

MEMBER OF THE A. B. C.  
FIFTIETH YEAR

# PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

ESTABLISHED IN 1872

Vol. LXXIV. No. 25

NEW YORK AND CHICAGO, JUNE 22, 1922

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# PAGE 19!



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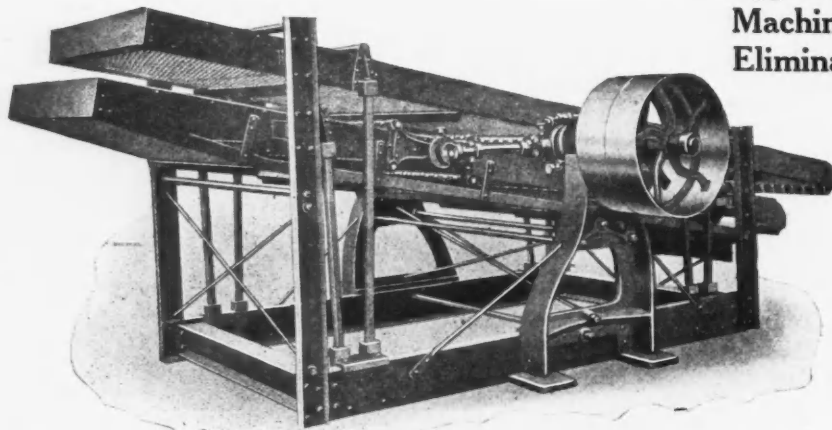
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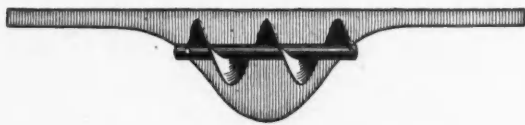
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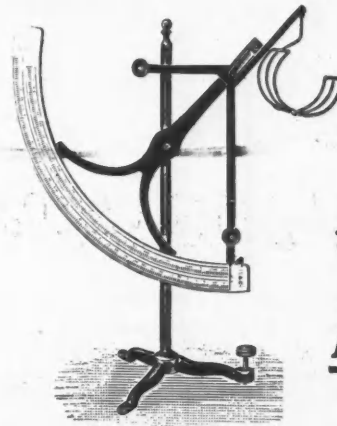
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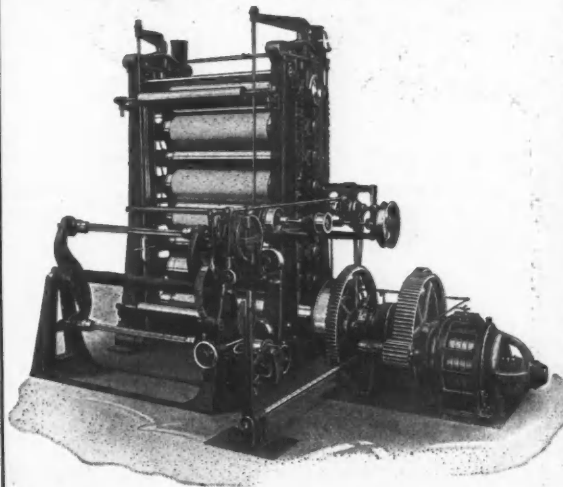
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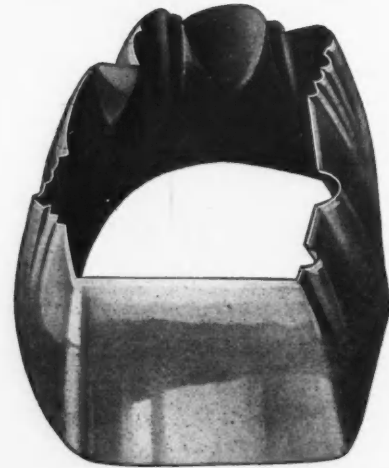
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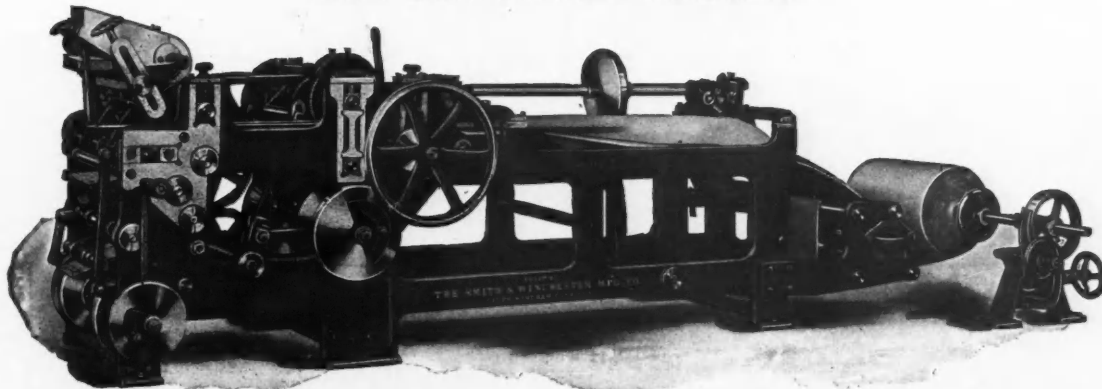
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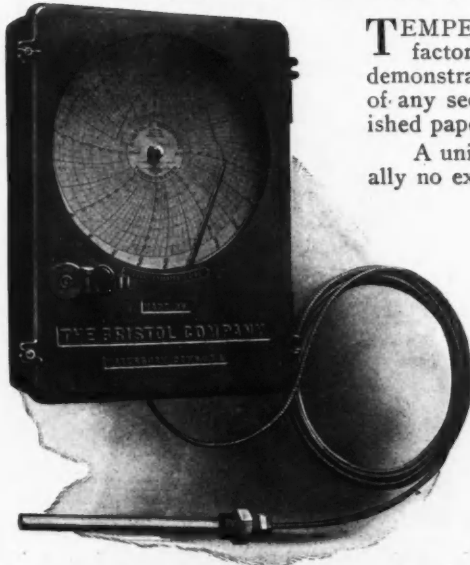
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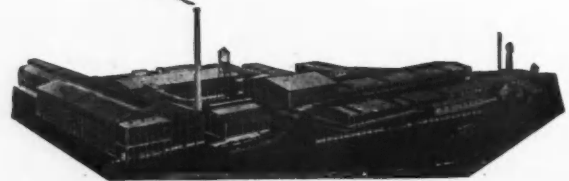
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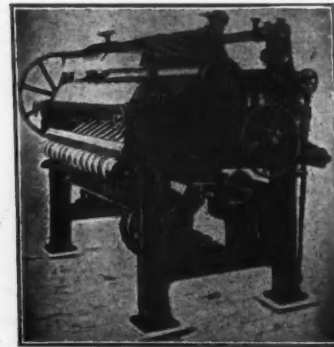
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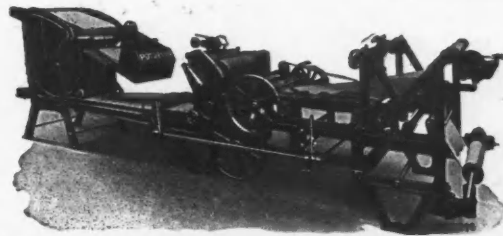
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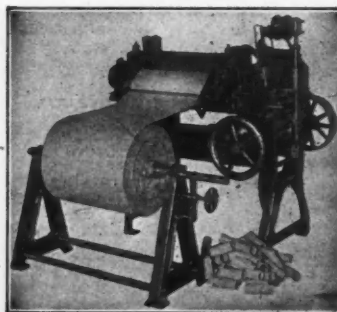
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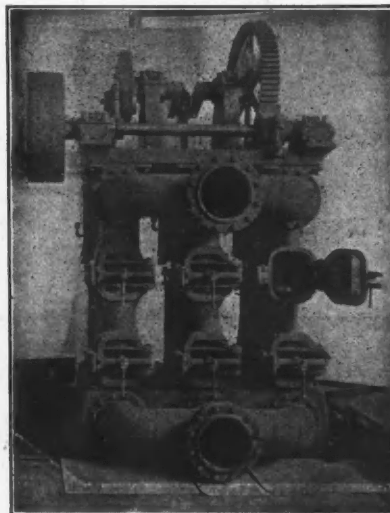
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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

**FIFTIETH YEAR**

PUBLISHED EVERY THURSDAY BY THE

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LESLIE R. PALMER, President

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NEW YORK AND CHICAGO

Thursday, June 22, 1922

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## NATIONAL WASTE DEALERS MEET AT ASTOR, NEW YORK

Among the Most Important Business Transacted Is the Adoption of a Standard Classification for Waste Paper by the Waste Paper Division of the Association—Paper Stock Division Considers a Classification Covering Cotton Rags Which Is for the Most Part Adopted—Meetings Are Unusually Well Attended and Numerous Important Matters Are Discussed.

More than seventy-five delegates attended the general meeting of the National Waste Material Dealers' Association at the Hotel Astor, 2:30 Wednesday afternoon. The meeting was called to order by President Frank C. Overton, of the association, and following immediately after the "get-together" luncheon, it was the culmination of the two-day convention which started Tuesday morning.

### Waste Paper Division Meeting

By far the most important business transacted at the various division meetings was the adoption of a standard classification for waste paper by the Waste Paper Division of the association. Efforts to bring about a classification standardizing grades in both East and West and serving as a regulating factor in the transactions with the mills, have been under progress for many months.

The Waste Paper Division was presided over by Fred Chase, of Chase & Norton, and this meeting was followed by that of the Paper Stock Division with Daniel I. Murphy as chairman. In the latter meeting, a classification covering cotton rags was considered and, for the most part, adopted.

The meeting was a large one, between 50 and 60 delegates being in attendance. The classification which was discussed was compiled in conjunction with the Writing Paper Manufacturers' Association.

### Foreign Trade Division Meeting

The scheduled meeting of the Foreign Trade Division was not called to order until immediately before the luncheon, and owing to this, no business was transacted with the exception of the election of a chairman. James Rosenberg was re-elected chairman until the end of the fiscal year, March 24, 1923.

### General Meeting

At the general meeting of the association in the east ballroom of the Astor, matters of interest to the assembled dealers were brought up and topics of the various division meetings reshaped.

### Biggest Demand in Rags and Paper

Demand for rags and paper, in manufacture of container board, etc., has increased in greater proportion than any other branch of the waste industry, according to President Frank C. Overton, of the association. Mr. Overton named the general amelioration of business conditions and the stimulated demand as reasons for the increased activity in the waste materials trade.

Another important subject which was brought to the attention of the assembled dealers was the labor situation. It was found that an actual shortage of skilled workers existed in many parts of the country, with the result that great numbers of unskilled men had been employed at considerably higher rates, averaging about 45 cents an hour.

In the Waste Paper Division meeting it was brought out that the Interstate Commerce Commission has seen the wisdom of endeavoring to encourage the conservation of waste materials. Existing freight rates on some grades, it was stated, are almost as high as those on manufactured products.

### Standard Classifications for Waste Paper

The following Standard Classification for Waste Paper has been adopted by the National Association of Waste Material Dealers, to be effective from July 1, 1922, to July 1, 1923, at which date a new circular will be issued:

**BALING:** Unless otherwise specified, it is understood that all grades are to be in machine pressed bales.

**TARE:** It is understood that unless otherwise specified, tare shall not exceed 3 per cent.

**WEIGHTS AND QUANTITIES:** A carload, unless otherwise designated, shall consist of the weight governing the minimum carload weight, at the lowest carload rate of freight, in the territory in which the seller is located.

**HARD WHITE ENVELOPE CUTTINGS:** Shall consist of all white hard sized (writing papers), to be free of ground wood, ink and all foreign substances.

**HARD WHITE SHAVINGS:** Shall consist of hard sized white writing paper, free from colors and tints, ground wood, and other substances. May contain machine ruled and unruled paper but not print ruled.

**SOFT WHITE SHAVINGS:** Shall consist of all white book paper cuttings, free from ground wood, ink, colors and not to contain over 10 per cent of coated papers.

**NO. 1 HEAVY BOOKS AND MAGAZINES:** Shall contain all books and magazines to be free of crumpled and scrap papers and not to exceed 3 per cent of ground wood.

**MIXED BOOKS AND MAGAZINES:** Shall consist of magazines and books, to be free from all other kinds of paper. They must be free of leather, board and cloth covers and all foreign substances, but may contain not more than 20 per cent of ground wood paper.

**KRAFT PAPERS:** Shall contain all kraft papers, free of waterproof papers.

**NO. 1 PRINT MANILLAS:** Shall be composed of a majority of manilla colored papers, writing papers and office waste. It must be free of soft papers, news and box board cuttings.

**CONTAINER MANILLAS:** Shall consist of manilla and other strong papers, with soft papers such as news and box board papers eliminated.

**NEWSPAPERS:** Shall contain dry, clean newspapers, free from all foreign substances not suitable for the manufacture of paper.

**MIXED PAPERS:** Shall consist of all grades of dry waste paper, free from objectionable material or materials that cannot be manufactured into paper.

**NOTE:** Variations of the above grades or grades not included in this classification are to be sold by description and/or sample.

### G. C. Russell Resigns From Barrett Co.

ELIZABETHPORT, N. J., June 19, 1922.—George C. Russell, who for fourteen years has been manager of the Barrett Company's paper mill here, has recently resigned. Mr. Russell will shortly return to his home town, Erie, Pa., for a much-needed rest before engaging in a new line of endeavor.

### Pulpwood in Pennsylvania

HARRISBURG, Pa., June 19, 1922.—The Department of Forestry has just completed a survey of the pulpwood situation in Pennsylvania, which shows that there are thirteen pulp mills in the state using 320,076 cords of wood in 1921. They employed 7,000 persons, paid out \$10,000,000 in wages and turned out products valued at \$20,000,000.

The most striking feature of the situation is the fact that more than 72 per cent of the wood used in the mills comes from outside the state. Three of the companies import every stick of wood they use, eight import more than 60 per cent, and not a single company relies entirely upon home-grown wood.

## KALAMAZOO IS COMMENDED ON SUPERINTENDENTS' MEETING

**Dr. Hugh P. Baker in Congratulating J. H. O'Connell on His Re-election to the Presidency of the American Pulp and Paper Mill Superintendents' Association Says That He Has a Real Opportunity for Service Not Only to the Superintendents But to the Paper Industry as a Whole—Chemical Pulp Mill Superintendents Start Campaign to Increase Members in the Branch of the Industry.**

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., June 19, 1922.—Kalamazoo's entertainment of the American Pulp and Paper Mill Superintendents' Association and the Cost Association of the Paper Industry was not in vain. The annual gathering long ago ended and the visitors have gone home, but as remembrances of the highly successful occasion, letters from participants are pouring into the office of President J. H. O'Connell, all being of a highly complimentary nature.

The communications indicate that the delegates and other visitors enjoyed every minute of their stay in this city. Nobody suffered for lack of attention. The programs were thoroughly appreciated, while the entertainment features were of a nature to enliven the heavier intellectual fare offered.

### Letter from Dr. Baker

Among these communications, many of them from superintendents and mill supply house representatives, is a letter from Dr. Hugh P. Baker, secretary of the American Paper & Pulp Association. He writes as follows:

"Congratulations on your re-election to the presidency of the Superintendents' Association. You have a real opportunity for service, not only to the Superintendents' Association but to the paper industry, through that association. If we can assist you in anyway here during the coming year in the work of your association, do not hesitate to call upon us.

"In thinking over your meeting and the work of your association it seems to me that your big opportunity this year is to carry on work that will bring in more of the eastern superintendents and that will swell the Superintendents' Association a little more effectively to the executives in the paper industry. As I suggested to you there, I think that closer affiliation with the Technical Association will help you in accomplishing these opportunities."

### Letter from J. A. Reilly

J. A. Reilly, manager of the cost and inventory department of the American Writing Paper Company, was also among those present and one of the most interested listeners at the various sessions. He addressed Mr. O'Connell as follows:

"Kindly accept my thanks for your many favors extended to the writer while in Kalamazoo at the recent joint convention. I enjoyed myself every minute and got some very good points by talking with various superintendents and cost men, and I feel that my time and expense has been very satisfactorily rewarded.

"You are to be congratulated on the way in which you conducted your meetings and the plans that you had worked up to perfection.

"Will you kindly extend my very best regards to Mr. Coughlin and your assistants? I met some mighty fine people in Kalamazoo and they used me royally. I only hope that you will come east some time and permit us the opportunity of reciprocating."

### Letter from John A. Bowers

John A. Bowers, superintendent of the Hammermill Paper Company, Erie, Pa., writes congratulating the Michigan division on the success of the convention, and also discloses the fact that the Chem-

ical and Mechanical Pulp Superintendents are planning greatly to increase their numbers and influence in the national organization during the coming year.

### For More Chemical Pulp Members

It appears that on Friday, June 9, during the convention, that a number of chemical pulp superintendents went into private conference to discuss ways and means whereby the number of workers in that branch of association activities could be increased, thereby benefiting the association by increased membership and at the same time making the association more valuable to those interested in this line of industry.

It was unanimously resolved that each one present would constitute himself a part of the committee as a whole in their endeavor to increase the number of chemical and mechanical pulp superintendents in the association.

A regular series of form letters will be adopted and used in the solicitation of new members.

It is believed that at least 150 names can thus be added to the association's roster.

The plan of campaign has been referred to President O'Connell for his approval or for any suggestions from his office.

The Superintendents' Association occupies a rather unique position, in that its secretarial duties are handled by a young woman, Miss P. C. Barrett. She has demonstrated her fitness for looking after details and covering a wide field of endeavor without a blunder. Her work, especially during the rush of the convention, was of high order, adding much to the comfort, pleasure and convenience of the visitors. It has been the subject of favorable mention in letters addressed to President O'Connell. Miss Barrett will continue to hold this responsible office for at least another year. She will likely be located in apartments more easily accessible for the general public.

### To Let Contracts for Valley Paper Mills

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 20, 1922.—Directors of the Valley Paper Mills Company at a meeting last week authorized architects to award contracts for constructing a new mill at Neenah. Excavation is expected to start the first week in July and the plant will be ready for occupancy late in 1923, it is said. The railroad company also will begin constructing side tracks at once.

The new mill will be located on property in West Menasha which the company purchased some months ago. The site was selected because it provides an abundance of spring water, which is essential to the production of high-grade glassine papers in which the new company will specialize.

The main building will be 610 feet long and of varying widths to accommodate the machinery. Two paper machines are to be installed, one to be devoted exclusively to the manufacture of glassine, and the other to making opaque and other papers. A modern printing plant also is to be included in the plant.

Contractors estimate the excavating will require about sixty-five days. In the meantime contracts for the side walls and other construction will be awarded. Some of the machinery for the plant has been ordered.

### Protest Against Casein Duty

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 21, 1922.—Senator Walsh, of Massachusetts, last week introduced in the Senate a letter from the American Paper and Pulp Association and from Robert Gair Company, protesting against the four cent per pound rate on casein. As set forth in the letter, the association points out "that the duty in the pending bill means a direct increase in cost of about a million dollars a year to the consumers of paper."



## GRATIFYING IMPROVEMENT IN RIORDON CO.'S REPAIRS

Both the Kipawa and Hawkesbury Mills of the Company Are Now Operating to Capacity in the Production of Sulphite Pulp—Canadian Pulp and Paper Association Presents Demands for a General Reduction of Freight Rates on the Railways Holding That Present Rates Are Not Warranted by Existing Economic Conditions and Constitute an Intolerable Drag on the Industry.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 19, 1922.—Gratifying improvement is being made in the rehabilitation of the Riordon Company. Money has been secured for meeting an obligation in connection with the purchase of the Gatineau limits, and the equity in this property, which is considered to be worth at least \$5,000,000, is now considered conserved for the company permanently. Both the Kipawa and Hawkesbury mills are now operating to capacity in the production of sulphite pulps. The company is receiving \$90 per ton for its highest grade bleached pulp, and \$80 a ton for book quality pulp. Since the Kipawa mill was opened on November 1, 1921, bank loans and prior liens charges have been reduced over \$1,400,000, through the proceeds of the sale of pulp on hand or since then manufactured. Several groups of limits have been sold, all but one of these being outside the Gatineau River Valley. The company still owns over 6,500 miles of limits, of which 5,700 are located on the Gatineau River, and in addition has four sawmills with a capacity of over 90,000,000 feet b. m., and also the Chelsea power on the Gatineau River. The credit for this satisfactory turn in affairs is due to I. W. Killam, who has been managing director for many months past, and to the company of which he is president, the Royal Securities Corporation, which has advanced several hundreds of thousands of dollars to provide working capital.

### Reduction in Freight Rates Demanded

The Canadian Pulp and Paper Association has presented a demand to a Select Committee of Parliament for a general reduction of freight rates on the railways. They hold that the existing high freight rates are not warranted by present economic conditions and constitute an intolerable drag upon the industry. In order to conform to present economic conditions the pulp and paper manufacturers have been obliged to reduce the average selling price of their manufactures by over 54 per cent, as compared with the selling prices obtaining in September, 1920, while raw material purchased on a high market has been written down an average of 42 per cent below the prices of the peak period. These conditions have forced a reduction in the prices paid to labor of 37.9 per cent. Notwithstanding a gross reduction of over 38 per cent thus achieved in production costs, the percentage of such costs as represented by freight charges on raw materials has increased from 11.26 per cent in September, 1920, to 22.89 per cent at the present time. Despite drastic reductions, the selling prices are of necessity still too high to permit a resumption of business on a normal basis, owing to the excessive freight charges. The industry is subject to keen competition from Europe which, under existing conditions, it is impossible to meet. The association therefore urges that freight rates in Canada should be restored to the basis prevalent prior to September, 1920, which would still leave them on a basis of approximately 42 per cent above the pre-war level.

### Collapse of Japanese Lumber Market

Despatches from Victoria, B. C., are to the effect that the Japanese lumber market, for months the backbone of British Columbia's export trade in lumber, has virtually collapsed. Prices for cedar logs in Yokohama are reported to be about one-half what

they were a few months ago, and apparently the country has entered upon a general liquidation period. China is definitely out of the market for the time being, on account of the civil war. Australia has placed a few fairly large orders of late, but, generally speaking, is waiting to be convinced that the market has reached bottom. Meanwhile lumber dealers are turning their attention to the American market.

### Abitibi Company Builds Railway

The Abitibi Power and Paper Company has begun the construction of a railway from the plant through the limits up to the Transcontinental Railway, a distance of about 16 miles. From this will be run several lateral lines covering a large section of the limits, and costing when complete about \$750,000. This road will be used to supplement the driving of logs by the rivers and lakes, and will enable the company to utilize large tracts of timber limits that otherwise could not be exploited except at a heavy cost, as these supplies are inaccessible to water. It is the intention of the company to mix the lean limits with the rest so as to supply pulpwood at an average cost over a number of years. The production of the company continues to work gradually up to the 500 tons a day mark. At present the output is averaging 475 tons. The company has contracts for the total production covering the whole of the present year.

### Price Bros. Running at Capacity

The Price Bros.' mills at Jonquieres and Kenogami are running at capacity, with a production of nearly 300 tons of news print per day. This condition, it is believed, will continue for the remainder of the year. In addition, there is some improvement in the lumber business, the company having begun shipments of lumber to England. Last winter the company cut about 25 per cent of its normal pulpwood supply, but it is expected that next winter a full normal supply will be cut.

### New B. C. Pulp Mill

Cruisers are now busy estimating the amount of pulpwood available along the Wigwam and Lodgepole creeks, tributaries of the Elk River, British Columbia. These operations are being conducted by the Provincial Government at the instance of Chicago newspaper interests, which have in view the establishment of a \$2,000,000 pulp and paper mill on the Elk River, below Elko, provided reserves of pulpwood aggregating 500,000,000 feet can be guaranteed.

### Paper Dumping Investigation

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 21, 1922.—While the investigation into the dumping of news print on the American market by foreign countries has not been entirely completed, enough information is said to be available at the Customs Service to lead experts of the Service to believe that no prosecution can be made under the anti-dumping law from either the Scandinavian countries or Germany.

Officials of the Service know, however, that paper is being placed on the American market by foreign manufacturers, in some cases at less cost than the actual cost of production in the United States, but it is pointed out by officials of the Customs Service this does not mean that foreigners are dumping paper in our market. The investigation of the dumping of Canadian news print paper in the United States, however, is not completed.

### Fred. A. Lakin Killed in Beating Tub

[FROM OUR REGULAR CORRESPONDENT.]

LIVERMORE FALLS, Me., June 20, 1922.—Fred A. Lakin, employed at the Otis mill of the International Paper Company, fell into a beating machine here last week and was instantly killed. He was 20 years old.



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## STANDARD PAPER CO. TO INCREASE CAPITAL STOCK

Makes Application Through Secretary of State for an Increase in Its Capital from \$360,000 to \$720,000—Will of Late Noah Bryant, One of the Founders of the Bryant Paper Co. Shows Valuation in Excess of \$600,000—James S. Tillman, Formerly Manager of the Paper Trading Co., Opens Office to Continue Paper Jobbing Business—S. B. Monroe Says Conditions Are Better.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., June 20, 1922.—The Standard Paper Company, of Kalamazoo, will declare a 100 per cent stock dividend to holders of common stock in the concern. Application has been filed through the office of the Secretary of State for an increase in capital from \$360,000 to \$720,000. As soon as this is acted on by the Michigan Securities Commission, the dividend will be available.

This concern is one of the strongest in the Kalamazoo valley. According to the last financial statement made for the year ending June 30, 1921, there was a surplus of \$693,542.42 on hand.

The statement follows:

Assets:—Real estate (land), \$29,518.49; buildings, \$301,521.32; machinery, \$382,769.04; accounts receivable, \$75,402.15; United States certificates, \$250,000.00; notes, \$2,500.00; shares, coal, \$4,000.00; inventory, \$160,804.45; prepaid insurance, \$1,883.25. Total, \$1,208,398.70.

Liabilities:—Common stock, \$360,000.00; accounts payable, \$51,897.83; cash overdraft, \$5,253.31; taxes (reserve), \$97,705.14; surplus, \$693,542.42. Total, \$1,208,398.70.

The statement for the year ending December 31, 1920, showed total assets of \$1,506,091.51, with a surplus of \$1,059,399.85. The loss shown by the comparative statements indicates reduced inventories and a voluntary reduction in profits to get down to brass tacks.

### K. V. P. Co. to Instal Water Treating Plant

One of the finest chemical water treating and filtering plants in America is to be installed by the Power Plant Specialty Company, of Chicago, at the plant of the Kalamazoo Vegetable Parchment Company, of this city. F. F. Vater, chemical engineer of the Chicago concern, has been in Kalamazoo for some time figuring out the details of the new installation and now his plans are about completed.

"By our system the Kalamazoo Vegetable Parchment Company will go back to Kalamazoo River as the source of its water supply," said Mr. Vater, "abandoning at least in part the system of wells installed in the past two or three years.

"We are able to take the water from Kalamazoo River, below the mouth of the city sewerage system, and all the paper mills on the upper reaches of the stream, thoroughly de-grease it, treat it to remove all algal spores and color perfect. We give a perfect water for the manufacture of the higher grades of paper, such as the Kalamazoo Vegetable Parchment Company specializes in."

Mr. Vater explained that the proposed installation will call for an outlay of approximately \$150,000. There will be a pump-house adjacent to the river bank. The intake from the river will be designed to have a cut off, with pump fittings and equipment in duplicate units, thus insuring certainty of adequate supply. Centrifugal pumps will be used and will have a capacity of 10,000,000 gallons daily, or 7,000 gallons a minute.

The water from the river is pumped direct to the operating building, a structure 60 feet wide by 400 feet long. This will be built by the mill by day labor. It will be concrete, brick and steel.

Plans are now being prepared by Billingham & Cobb, architects in the Press building.

The operating building will contain a complete battery of filter units, chemical storage and chemical proportioning apparatus, the latter being constructed to regulate the feed of chemicals in exact proportion of the needs of the water passing through the filtering processes. An added feature at the operating building is the fact that all water from the river passes through a set of revolving screens, designed to remove all paper stock that may escape from the mills above. Apparatus will also be installed whereby all waste waters from the mill will be controlled and returned to the operating building for re-filtering.

All operating building equipment, like that at the pumping station, will be in duplicate, thus insuring certainty of supply and making it possible to overhaul the apparatus without closing down the mills for lack of water.

### James S. Tillman to Job Paper

James S. Tillman, formerly secretary and general manager of the Paper Trading Company, whose affairs were recently closed up, has now opened offices in this city and will continue jobbing paper to the trade.

"Business is looking better," said Mr. Tillman. "The paper industry, last to feel the industrial decline, is coming back slowly but surely."

### Says Business Conditions Are Better

S. B. Monroe, treasurer of the Allied Paper Mills, has returned from a business trip to Chicago. He was in touch with several paper jobbers in that city and reports conditions looking brighter. Mr. Monroe reports that the Allied warehouse and sales offices, recently opened in New York City, are now ready for an active sales campaign. It is the intention to carry a heavy stock for the convenience of the eastern market.

### Will of Late Noah Bryant

The will of the late Noah Bryant, one of the founders of the Bryant Paper Company, of this city, has been filed in the probate court and showed a valuation in excess of \$600,000. It was all in personal property and goes to his heirs. No charitable bequests are included.

Practically all of the wealth of the deceased was invested in Kalamazoo industries. His holdings included: Bryant Paper, 25,883 shares common stock; Illinois Envelope Company, 2,052 shares common stock; Kalamazoo Vegetable Parchment Company, 4,800 shares common stock, and 2,984 additional shares subscribed; Kalamazoo Railway Supply Company, 2,900 shares common stock; Limousine Body Company, 2,500 shares common stock, also heavy interests in the Allied Paper Mills.

### General News of the Trade

Fire broke out in the stock room of the Western Board and Paper Company last Saturday night. It was confined to that department and the loss was not heavy.

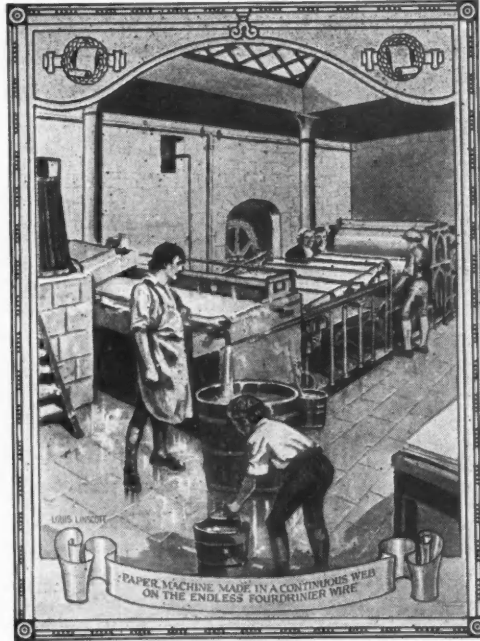
A. A. Wheat, of the Northern Michigan Pulp Company, Petoskey, has sufficiently recovered from a recent long, severe illness to return to his duties. He plans to go north in the immediate future, remaining there at least during the summer.

J. H. O'Connell, president of the American Pulp and Paper Mill Superintendents' Association, has been in Chicago, New York City, and Watertown, N. Y., on business during the past two weeks.

Edward P. Bagg, of the Parsons Paper Company, Holyoke, Mass., together with Mrs. Bagg and daughter, have been visiting Mr. and Mrs. E. C. Parsons, of this city. They returned home Tuesday.

Peter King, formerly superintendent of the Monarch Paper Company, Kalamazoo, and later in the mill supply business, is now residing in Portland, Ore. He writes that he is delighted with the west and likes his business connections there.

*Progress  
and  
Paper  
Making*



No. 3

## When Napoleon was Emperor

About the time Napoleon crowned himself Emperor, two Frenchmen made an invention which has done more to help the progress of the world than any emperor who ever lived.

Henry and Sealy Fourdrinier, inventing the machine that bears their name, made it possible to manufacture paper in a continuous web instead of sheet by sheet. This meant more paper, very much more paper, for the world.

It was this invention that paved the way for the multiplicity of books, magazines and newspapers. In the century that followed the development of the paper making machine, mankind advanced further in knowledge and achievement than during any corresponding period in the history of the world. This advance was not the intellectual triumph of a small favored group. Athens was brilliant in a world of barbaric ignorance. The nineteenth century saw the real beginning of the education of the people. Knowledge came to the common man and it was paper and printing that brought it to him.

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## MARKET IN PHILADELPHIA SHOWS SLOW IMPROVEMENT

**While Demand Is Still Uncertain the End of Each Week Shows Some Betterment in Conditions—While No Price Reductions of Importance Have Been Made by the Coarse Paper Mills, Competition in This Market Continues Keen—Bag Market Is in Unsatisfactory Condition With Some Extremely Low Prices Reported—Paper Stock Market Continues in More Satisfactory Shape.**

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., June 20, 1922.—The week's experience of the fine paper distributors confirms the analogy suggested in these columns several weeks ago, between the paper trade and the stock market. For no apparent reason, there was experienced during the week a quietness and a recession which in some cases amounted to almost a slump. But the new week gave evidence of a recovery and unpleasant as the experience of the last week was to some, it did not to the slightest extent impair the deliberate judgment of virtually all that conditions, already ever so much better than they have been, steadily will continue to improve and that a decline even though it extends over the period of a week only presages an increase to follow. The market has been somewhat spotty, it is true, for some weeks, but the gain has been much greater than the loss.

Demand rises, then falls, then rises again a little higher than before, and when it falls again does not go to as low a level as previously.

Another element which added slightly to the trade's dissatisfaction was the shading off in price of a leading line of book paper, which because it is so widely advertised, occupies a foremost position in the trade. On this brand the falling off at most was but a half cent per pound, but even this slight decline was sufficient to stiffen up the determination of some buyers to hold off in the hope perhaps more than in the real expectation, of being able to drive better bargains later on. Save for the case noted the market generally continued steady all along the line and there is no thought on the part of the trade that with the oncoming of the customary summer dullness, there will be any general price revision.

### Coarse Paper Market Without Change

In the coarse paper market business remained without much change. No noteworthy price reductions were made by the mills but in this market competition to secure business still continues to be so keen that it is the buyer rather than the distributors who makes the price. In the bag market a condition approaching demoralization exists, and numerous instances were reported of sales of bags actually below cost. One of the medium size jobbers reported purchases of bags from a larger distributor at considerable less than the mill price for this identical brand.

But after all, the bright spots in the week's experiences were more plentiful than the shadows and the absolute truth is that during this period of quiet, but only of relative dullness, the trade actually is in a happier frame of mind than it has been at any time during the past year—a condition due almost wholly to the splendid relationship now existing between the paper distributors and their largest customers, the printing industry and, arising from the peace pact ratified at the get-together meeting in Kugler's Cafe two weeks ago which made more history than any occurrence in the graphic arts in recent years.

### Paper Stock Continues to Improve

While the paper stock dealers continue to enjoy the increased

mill demand which two weeks ago caused prices to advance for the first time this year, there was really no gain during the week although one had been anticipated. Nevertheless all grades of paper stock, commons and the better, with still the only exception hard white, moved as freely from warehouses, millward, as they did into the establishments of the packers. All the principal paper stock dealers report being able to dispose of, at the market price, all the stock they can get together, and while they are of opinion that prices will advance, do not look for an increase large enough or soon enough to warrant them storing up goods in anticipation.

### Amity Between Printers and Paper Men

Too extravagant terms hardly can be used to describe the amity now existing between the fine paper dealers and the Typothetae. The estrangement, which existed in a group of the members of the Typothetae against those firms which refused to accede to the demand for the long list not only has disappeared but has given way to a cordiality and a spirit of co-operation which in the words of one of the distributors "makes dealings with these printers a real pleasure."

Though but a week or two has elapsed since the agreement was entered into by the Trades Relations Committee of both the Typothetae and the Paper Trade Association, time enough has elapsed and experiences enough have been enjoyed, to give a real basis for observation. The paper distributors as one man say that while chairman Wm. Sharpless of the Typothetae Trades Relations Committee was a most ardent and strenuous advocate of the long list and still believes in it in principle and hopes that some day it will be accepted by the paper distributors willingly, he has been most fair, impartial and considerate in his interpretation of the agreement entered into in the scores of concrete cases which have been reported to him by the paper distributors in their desire to live up to the spirit of the pact that was entered into. Mr. Sharpless has been compelled to remain at his telephone almost continuously in order to advise the paper distributors how to deal with particular cases under the terms of the new agreement, and in every case he has given advice which has been accepted by the paper men. Discussing his experiences Mr. Sharpless says: "I am delighted with the co-operation which is being shown by the paper distributors and the abundant evidence that has been given me, of their intention to live up not only to the spirit but to the very letter of the agreement. I realize the great responsibility that has been placed upon me and I know that I can only discharge it satisfactorily by continuance of the good will and co-operative spirit shown by the paper distributors. It is my deliberate judgment that a condition such as now exists between the printers and the paper men, and which I believe will continue because both sides are endeavoring to see that it does, is unparalleled in our trade annals. On the part of the printers there is recognition of the fact that they should look to the paper distributors rather than to the mills for their supply and I have yet to find one representative printer who does not deprecate buying from the mills under the present conditions in which the paper distributors are doing so much to give the proper protection to the printers and other converters and retailers of paper. Lest there be a misunderstanding, however, I desire to say that in my judgment the long list is not dead and that we are entering upon an educational campaign for the general establishment of a long list which I hope to see successful sooner or later by the free will acceptance of the long list on the part of the paper distributors, as a desirable thing for themselves as well as for the printers."

Two developments of the week exemplify the increased good fellowship between printers and paper men although they are not directly connected with the new agreement.

Application was made to the Typothetae during the week for  
(Continued on page 24)





# RIVER POLLUTION

A combination of the BIRD SELF-CLEANING SHOWER PIPE and the BIRD SAVE-ALL is of material help in reducing the pollution of streams.

A large part of the waste water can be filtered and used over again thereby reducing the volume of water leaving the mill.

Obviously the smaller quantity of water can be handled with far less trouble and expense. The saving is especially large where state regulations compel treatment of the waste.

**BIRD MACHINE COMPANY**  
 SOUTH WALPOLE MASSACHUSETTS

*Western Representative:*  
 T. H. Savery, Jr., 1718 Republic Bldg.,  
 Chicago, Ill.

*Canadian Builders of Bird Machinery:*  
 Canadian Ingersoll-Rand Co., Ltd.,  
 260 St. James St.,  
 Montreal, Canada.

## BIRD SAVE-ALL

A commonsense pulp saver.  
 A detector of leaks.  
 A practical white water filter.

## BIRD SELF-CLEANING SHOWER PIPE

A practical self-cleaning shower pipe with which white water can safely be used.

## MARKET IN PHILADELPHIA SHOWS SLOW IMPROVEMENT

(Continued from page 22)

membership by five firms, the largest number received at any one time in recent history, and of these three were paper distributors. Favorable action on these applications was taken by the Executive Committee of the Typothetae and it only remains now for them to be assigned to a division. The paper firms were The Raymond & McNutt Company, A. S. Datz & Son and the Atlantic Paper Company. The two last named are not members of the Paper Trade Association.

### General News of the Trade

Although the Golf Tournament of the Paper and Printing and Publishing trades of Philadelphia will not be held until June 27 at the meeting taking place at the Philmont Country Club, almost two score of acceptances were filed with Irwin F. Fegargee of Curtis & Bro. Inc., who is acting as secretary, at the close of the week, and of course more are expected this week when the list closes. Those who have expressed their desire to participate include Wm. S. Wilcox, of Wilcox-Walter Furlong Paper Company; Wm. H. George, of the Whiting Patterson Company; J. H. Lindsay, of Lindsay Brothers; Simon Walter, S. Walter, Inc.; W. W. Seary, the D. L. Ward Company; Arthur B. Sherrill, Riegel & Company; H. F. Donahue, the Molten Paper Company; Norman W. Fort, Thomas W. Price Company; E. A. Wehenmayer, Jessup & Moore Paper Company; David Lindsay, Lindsay Brothers; Irwin F. Megargee, E. W. Fry; S. A. Benedict, J. A. Klepper; A. Sidney Jenkins; W. A. Jennens, Albert Wolf; F. W. Roberts; Charles L. Zink; G. V. B. Leitch; J. S. Potsdamer; H. E. V. Haydock; George W. McDoughall; R. H. Dippy; Gustav A. Vassel; Albert Sorenson; W. J. Boyd; Wayne S. Shantz.

Asher Humes has severed his connections as a fine paper salesman with The Paper House of Pennsylvania and has been succeeded by Walter J. Hackett formerly of the Raymond & McNutt Company. Mr. Humes has returned to his old affiliations, the D. L. Ward Company with which he became connected at the time of the dissolution of the Megargee-Hare Company. He is well acquainted with the up-state trade and has been assigned to the Wilkes-Barre branch of the Ward Company.

W. D. Predmore of the Riegel & Co. credit bureau, has returned from attendance at the national conference of the credit men in Indianapolis.

Raymond J. Considine of the Paper House of Pennsylvania spent last week in attendance at the sessions of the Advertising Clubs of the World.

A testimonial dinner to President George W. Ward of the D. L. Ward Company was tendered to him on Wednesday night of last week by the members of his organization, at the Balla Golf Club.

William Tustin, formerly with the Garrett-Buchanan Company is now on the sales organization of E. R. Grossman.

The Beck Paper Company business family picnicked on Saturday afternoon last in Fairmount Park near the Lincoln Drive. The guests were taken to the park in the automobiles and delivery trucks of the company which spread an open air luncheon for them. Until twilight, there was conducted a program of games and sports and in the evening there was another luncheon. The function was in charge of J. Harry Rees, Harry Glenn, and Harold Simon.

Paper distributors began on June 19 closing their establishments at 5:00 o'clock and they will continue the early closing schedule until September 15.

Wilcox, Walter Furlong Paper Company has made application for membership in the Paper Trade Association of Philadelphia.

C. S. Manderbach some time ago salesman in the coarse paper department of the D. L. Ward Company who left to take an out of town position, has returned to this city.

The Garrett-Buchanan Company reported that up until the close of business on June 15, every day of the month had shown an increase in business over any day during the last nine months.

Riegel & Co. have added to their line the day break cover made by the New York and New England Company of Holyoke. It comes in single and double ply.

There was solemnized in the cathedral on Saturday morning last, the marriage of Miss Katherine N. Murphy, the daughter of Daniel I. Murphy to Frank X. Morris. Following the marriage a reception was held at the Bellevue-Stratford. Mr. and Mrs. Morris will take up their residence at Cynwyd. The Murphy firm is in course of removal from its warehouse at Front and Race streets. It has taken offices in rooms 304-5-6 Brown Brothers Building southeast corner of 4th and Chestnut streets and will have packing of paper and rag stock done outside. It proposes to develop extensively the import business in which it was engaged before the Great War but which was almost abandoned because of the conflict.

Clarence Holland office manager for Sylvester S. Garrett, is spending his vacation on a trip through the South.

D. K. Brown, of the Neenah Paper Company paid the city a visit during the week.

### Paper Specifications Committee Reports

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 21, 1922.—The committee which has been working out specifications of paper for the Government Printing Office for the six months' period beginning September 1, made a report to the Joint Congressional Committee on Printing on Tuesday. The report itself shows that only minor changes were made in the former specifications, but the committee recommends that a conference be held with paper manufacturers before the next opening of bids in February, 1923.

The joint committee approved the recommendations of the Specifications Committee, and also thought the bids should be opened on July 31. The Specifications Committee's report to the Joint Committee is as follows:

"In accordance with the resolution of the Joint Committee on Printing of June 8, 1922, the Committee on Paper Specification re-assembled on Tuesday, June 13, considered the proposal and specifications for furnishing paper for the public printing and binding for the term of six months beginning September 1, and submits herewith its recommendations for proposal and specifications for paper.

"No changes other than the correction of a few minor typographical errors have been made at this time in the specifications. It has been nine years since the Specifications Committee has considered the proposal and specifications jointly with the paper makers. During these years a number of changes have developed in the specifications themselves and in paper making, and the Specifications Committee is of the opinion that it would be desirable for it to meet early in the fall to give very careful consideration to possible revisions in the specifications, and to this end it would recommend that the Joint Committee on Printing appoint the Specifications Committee at an early date."

### Bryant Venable Resigns

[FROM OUR REGULAR CORRESPONDENT.]

CINCINNATI, Ohio, June 20, 1922.—Bryant Venable, secretary and assistant to the president of the Whitaker Paper Company, has resigned, severing his connections with the company June 15. Mr. Venable has not as yet announced his plans for the future.



# HIGH SPEED

Is a quality not confined  
to our Paper and Board  
Making Machines.

## The 'Beloit' Paster

also has the stamina and  
design for fast work.

*Ask us for results obtained  
on some of these machines*

**BELOIT IRON WORKS**

BELOIT, WIS., U. S. A.



## MODERATE PAPER DEMAND IN THE TORONTO MARKET

**Usual Summer Quietude Is Now Setting In but a Considerable Improvement in Business Is Expected in the Fall—Better Demand Is Reported for Bleached Sulphite—Shackleton Forest Products, Ltd., Get Charter to Buy and Sell Pulpwood—Fort William Paper Co. to Start Work Soon on Two Machine News Print Plant—Timber Limits of Western Canada Pulp & Paper Co. Sold.**

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 19, 1922.—There is a moderate turnover in the paper business so far this month and conditions are about the same as they have been for some time past. It is expected that trade will slow down somewhat in the near future, as July and August are generally quiet months. The trade is now anxiously looking forward to a lowering of railway freight rates, which, it is expected, will be announced in a few days. This will help clear the industrial atmosphere. With the promise of abundant crops this year business in the rural centres is picking up materially. It may result in heavier orders for fall buying.

The bulk of the business in the paper line done today is in the way of limited quantities for replacement. News print is in active demand and the fact that a number of mills are adding new machines and other plants are to be erected evidences firm belief in the future of this staple commodity. Envelope manufacturers and stationery houses report a good trade, running from sixty to eighty per cent capacity. Toilet and tissues are in fair demand and the mills have enough orders on hand to keep them going nicely for the next few weeks.

There has been some improvement in the demand for sulphite pulp and several mills now report orders ahead, particularly in bleached. Ground wood pulp remains about the same, with prices fairly firm. Some Toronto wholesalers have adopted the practice of taking a half-yearly inventory and have now started upon this work.

### New Company Will Handle Pulpwood

A charter has been granted to the Shackleton Forest Products, Limited, 409 Manning Chambers, Toronto. The organization will go extensively into the buying and selling of pulpwood. The centre of operations in northern Ontario is at Shackleton, forty-five miles west of Cochrane, on the Canadian Transcontinental Railway. A. M. Moffat is president of the company, and associated with him are F. E. Frantz, of Niagara Falls, Ont., and Joseph Myers, of New Liskeard, both of whom have had long experiences in the pulpwood line.

### Carrier Pigeons in Forest Survey

L. L. Reid, of Sault Ste. Marie, is training some of his carrier pigeons for use with the ten-passenger aeroplane, which is to make a survey of the forests in the Michipicoten area this summer for the Spanish River Pulp and Paper Mill, Limited. Six of the pigeons, which will aid the survey of the timber limits, have already made the flight from Searchmont to Sault Ste. Marie, a distance of about thirty miles, in a little better than half an hour.

### Paper Business in West Improving

W. H. Sherriff, of the Hodge-Sherriff Paper Company, Toronto, who this week moved into their handsome new offices in the McKinnon building, returned lately from an extended business trip to the Canadian West, going as far as Vancouver, and visiting all the principal cities. Mr. Sherriff reports that the paper trade is improving in the west and that the demand for kraft, both glazed and unglazed, is good. The prospects for an abundant harvest on the prairies is most promising.

### Pacific-Burt Co. Holds Annual

At the annual meeting of the Pacific-Burt Company, manufacturer of counter check books, which was held in Toronto last week, the report for the last fiscal year was presented, and further comment on the business situation pointed to the fact that the company had a good volume of orders on hand, with the outlook generally satisfactory. A. E. Ames was elected as resident vice-president and H. T. Scott as resident vice-president in California. S. J. Moore, of Toronto, was returned as president, and the other directors are James Ryrrie, F. N. Burt, E. G. Baker, C. W. Colby, S. J. Moore, Jr., and Horace P. Brown.

### News Print Plant for Fort William

The Fort William Paper Company, which started operations a little over a year ago at Fort William, Ont., with a capacity of 125 tons a day of ground wood pulp, is about to branch out into the news print line, and it is expected that, by August of next year, this commodity will be turned out. Work will soon start on an addition to the mill, which will house two paper machines and the output will be one hundred tons of news print daily.

### Toronto Co. Buys Western Mill

The Manufacturing, Holding and Investment Corporation, Limited, of Toronto, has purchased the plant and timber limits of the Western Canada Pulp and Paper Company, Limited, at Port Mellon, which is located twenty miles north of Vancouver, B. C., and has a capacity of forty tons a day of kraft pulp. The mill has been closed for many months, following financial difficulties. The purchase gives seventy cents on the dollar on outstanding first mortgage bonds, and it is understood that the industry will be put in operation again.

### Stationers Pay Visit to Brantford

The Commercial Stationers' Association, of Toronto, recently paid a visit to the envelope factory of Barber-Ellis, Ltd., at Brantford, Ont., on the invitation of this well-known firm, at the head of which is J. F. Ellis, former president of the Canadian Paper Trade Association. The visitors traveled in a special car and were conducted through every part of the busy establishment, after which they were entertained at luncheon at the Brantford Club. Mr. Ellis extended a warm welcome to the guests of the firm, which sentiments were heartily reciprocated.

### Newton Falls Paper Co. Making Improvements

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., June 19, 1922.—The Newton Falls Paper Company is now advancing work on the construction of a new and modern boiler house. It is another step in the carrying out of expansion and remodeling plans undertaken some time ago when the new owners took possession of the plant.

An officer of the company said today that the work of constructing the boiler house has progressed about 25 per cent. It will be a concrete and steel structure, 75-x 150 feet in dimensions and one story high. A Kellogg brick stack, 200 feet high, will also be erected.

The most modern boiler installation will be made. Contracts are awarded for the installation of two 612-horsepower B. & W. Stirling boilers. Coal handling and crushing apparatus will be installed.

The building is placed upon foundations designed to permit the addition of higher stories in event this is desired at a later time.

### S. D. Warren Co. Opening Chicago Office

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, June 20, 1922.—G. W. Olmsted is opening up the Chicago office of the S. D. Warren Company in room 1019 Old Colony Life building, 166 West Jackson Boulevard.



**FOR QUALITY PAPERS  
USE**

**A-1 BLEACHED SULPHITE PULP**

MANUFACTURED BY

**Kellner-Partington Paper Pulp Co., Ltd.**

**Borregaard**

**Norway**

SOLE AGENTS FOR U. S.

**J. Andersen & Co.**

**21 East 40th Street**

**New York, N. Y.**

**WAYAGAMACK**

**KRAFT PULP**

*Uniform in Quality  
Essential for Strength Requirement*

**The Pulp and Paper Trading Company**

**21 East 40th St., New York, N. Y.**

Sole Agents for United States for

**CANADIAN KRAFT, Ltd.**

**Three Rivers, Canada**

## CHICAGO DEMAND FOR PAPER IS SOMEWHAT MORE ACTIVE

**While Volume Business Has Not Yet Developed It Is Expected to Do So Soon—Chicago Paper Co. Holds Its Last Salemen's Meeting at the City Club With Forty in Attendance—Service Paper Bag Co. Incorporates with Capital Stock of \$18,000 to Manufacture and Deal in Paper Bags—Excelsior Paper Co. Capital \$150,000 Opens Office at 11 So. La Salle St.**

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, June 19, 1922.—Business houses in general are said to be showing signs of more confidence in the future and with this development has come the almost certain prospect that they will also be in the market for a quantity of paper later this summer for advertising purposes.

Among the Chicago trade is a feeling that the market has grown a little firmer and more stable. Buying is said to be done more regular now and while volume business has not as yet been developed, it is felt that this is fast coming. One salesman for a local paper house calling on printers in the city, said that many of them are doing a very good business now and they feel that the turning point, when their business will gather momentum is approaching.

The sales manager of another house said that he had recently interviewed several paper men and other business heads on the subject of better business and found that there was every reason to look forward to improvement in the very near future. He said that right now business with his house had shown no change, but that it was doing a fairly good business in small lots.

C. J. Foley, of C. J. Foley & Co., mill representatives, Chicago, said that he had noticed a gradual strengthening market here. All lines were moving a little better, Mr. Foley said, and while the volume had not been increased to where it was two years ago, this would come in time. Mr. Foley is now handling a line of French imported cover paper for an eastern importing house. The line is very attractive and should take well with the high-grade box-makers in this city.

### Chicago Paper Co. Has Outing

The Chicago Paper Company held its last salesman's meeting of the summer at the City Club, Chicago, June 2, with forty in attendance. Salesmen from all territories were present. A delightful dinner was served as the starting factor of the evening. Subjects brought up covered the sales program of the organization during the summer and some enthusiastic talks. Two of the principal speakers were, Ernest Mahler and Raymond Kelly of the Kimberly-Clark Company, who spoke on the papers, which this firm handles. The consensus of those present was that business was showing better signs now and by the end of the summer months would begin "to open up." The Chicago Paper Company will hold no sales gatherings during July and August. The next monthly meeting of these members of the trade will be held in September.

### General News of the Trade

O. H. Runyan, sales manager of the Whitaker Paper Company has just returned from a week's business trip. One of his stops was St. Louis. He said business in the cities he visited was about the same as in Chicago, and everyone was holding an optimistic outlook.

W. N. Gilbert, of the Chicago Paper Company, made a business trip last week in which he visited the Commerce Paper Company

of Toledo, and also the Century Paper Company, of Indianapolis, two subsidiary houses of the Chicago firm.

L. D. Green, S. Alexander and D. Rubin are the officers of the newly incorporated Excelsior Paper Company which has opened an office at La Salle street. The company has been capitalized at \$150,000.

Members of the paper box trade and the supply trade held the first outing of the year at the Pink Poodle Farm, Friday, June 9. The picnic was well attended. Baseball and other outdoor sports were features of the picnic which was capped by a wonderful chicken dinner. The contingent of "joy seekers" made the fifty-mile trip to the Pink Poodle Farm in automobiles, starting from Clark and Ohio streets.

The first 1922 Golf Tournament of the Printing Trades Golf Association, of Chicago, of which several of the local paper men are members, was held at Olympia Fields, Wednesday, June 14, with close to 100 printers and allied industry members in attendance. The play started in the morning and continued throughout the entire day, closing with a steak dinner in the evening. C. W. Sherman, of the Seaman Paper Company, and Douglas Wray, of the Douglas Wray Paper Company, were two of the paper men to win prizes.

J. R. Russell, Chicago manager of the Marathon Paper Company, with offices at 111 West Washington street, has returned to the city after spending a week calling on trade in the east.

Alexander Thomson, of the Champion Coated Paper Company, was recently operated on for an attack of appendicitis. He is now said to be recovering and has been taken home from the hospital. The operation was performed at a Cincinnati hospital.

"Bob" Butterworth, Chicago manager of the Champion Coated Paper Company, who now have offices in the Conway building, said that business was going along fine.

The first of a series of 48 booklets to be mailed out weekly for that number of weeks was put in the mails last week by the Franklin-Typhothetæ of Chicago. These booklets are being distributed through the local typhothetæ for the American Writing Paper Company by the United Typhothetæ, and constitute a full course in building a printing business, selling more "printed salesmanship" and reaching the customers. Twelve of the booklets pertain to building a printing business. Twenty-four give instructions on getting more printed salesmanship trade, and twelve have been written expressly for the printing buyers and will be sent to these buyers every fourth week, starting in August, until the course is exhausted.

### To Be Secretary of Cardboard Association

Jacob Erichsen has been made secretary of the Cardboard, Glazed and Fancy and Gunned Paper Manufacturers Associations, succeeding O. M. Porter, who has become secretary of the Pulp Manufacturers Association, in addition to his other duties as assistant secretary of the American Paper and Pulp Association and of the Woodlands Section of that association.

Although Mr. Erichsen makes no pretense of being an experienced trade association executive, his business experience justified the belief that he would be able to do effective work in the paper industry.

A Norwegian by birth, he has traveled extensively in Europe, South America, India, Africa and Australia.

Mr. Erichsen in 1914-15 was traveling representative for Norwegian publishers, establishing branches in England, Sweden, Denmark, Germany and the United States after which he was placed in charge of imports of American, English, French and German machinery for the biggest importing firm of its kind in Norway. He came to the United States in 1918 to open branch offices here and in South America for a Norwegian foreign trade company, from which he has severed his connection just recently.

# PAPER STRAWS



In connection with our Paper Can Machinery, we have developed

## A Machine for Making and Counting Spiral Paper Straws

The straws come from the machine waxed, ready for packing.

We are interested in selling the exclusive use of the machine and the method of manufacture, together with our service to equip and put into operation a plant to make these straws on a large scale.



*Does This Interest You?*



**SAMUEL M. LANGSTON COMPANY**  
CAMDEN, NEW JERSEY

## BIDS AND AWARDS FOR GOVERNMENT PAPER

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 21, 1922.—The purchasing officer of the Government Printing Office has received the following paper bids:

21,900 lbs. 33 x 46—146 smooth tea cover paper: Dobler & Mudge, at \$.085 per lb.; R. P. Andrews Paper Company, \$.0865; Knowlton Brothers, \$.0807; Whitaker Paper Company, \$.0855; Mathers-Lamm Paper Company, \$.0849; George W. Millar & Co., Inc., \$.092; Old Dominion Paper Company, \$.08649; Graham Paper Company, \$.0909; Thomas Barrett & Son, \$.0865; Reese & Reese, \$.0858, and Dill & Collins Company, \$.0925.

5,000 lbs. Green calendered tag board, 24-inch rolls: Dobler & Mudge, \$.099 per lb.; Maurice O'Meara Company, \$.11; Whitaker Paper Company, \$.1037; Reese & Reese, \$.1651; R. P. Andrews Paper Company, \$.0764.

17,500 lbs. white antique printing paper, 20½ x 29—50: Dobler & Mudge, \$.117 per lb.; R. P. Andrews Paper Company, \$.14 and \$.139; Mathers-Lamm Paper Company, \$.0945; the Whitaker Paper Company, \$.1224; Reese & Reese, \$.1611 and \$.15775.

4,800 lbs. smooth pink cover paper, 20 x 25—48: Dobler & Mudge, \$.0873 per lb.; R. P. Andrews Paper Company, \$.087; Knowlton Brothers, \$.0847; Whitaker Paper Company, \$.0869; Mathers-Lamm Paper Company, \$.0863; Thomas Barrett & Son, \$.09; Reese & Reese, \$.087275; and Old Dominion Paper Company, \$.08749.

72,000 lbs. white glazed bond paper, 21 x 32—36: Etna Paper Company, \$.1163; Whitaker Paper Company, \$.1297; Dobler & Mudge, \$.1649; R. P. Andrews Paper Company, \$.119; Lee Paper Company, \$.14; Whiting-Patterson Company, \$.12; Old Dominion Paper Company, \$.14249.

3,920 lbs. red cardboard, 22 x 28—196: Dobler & Mudge, \$17.50 per ream; Carter Rice & Co., \$18 and \$22; R. P. Andrews Paper Company, \$18.60; Old Dominion Paper Company, \$18.424; Mathers-Lamm Paper Company, \$15.275; Whitaker Paper Company, \$17.05 and \$18.75; B. F. Bond Paper Company, \$18.50; D. L. Ward Company, \$18.50; Thomas Barrett, Inc., \$17.68; Reese & Reese, \$17.10; Garrett-Buchanan Company, \$28.75.

1,810 lbs. 22½ x 28½—181 fawn index bristol board: Dobler & Mudge, at \$.23 per lb.; Whitaker Paper Company, \$.25; R. P. Andrews Paper Company, \$.235; Old Dominion Paper Company, \$.1974.

20,000 lbs. 26 x 38—No. 50, strawboard: C. L. La Boiteaux Company, at \$36 per ton; Wilkinson Bros. & Co., \$62.50; United Paperboard Company, \$55.86; Reese & Reese, \$68.45; R. P. Andrews Paper Company, \$50.20.

7,800 lbs. 38 x 48—No. 16, map paper: Dobler & Mudge, at \$.1648 per lb.; R. P. Andrews Paper Company, \$.17; Old Dominion Paper Company, \$.1777; B. F. Bond Paper Company, \$.169; Whitaker Paper Company, \$.1695, and Reese & Reese, \$.1972.

35,000 lbs. No. 2 binders' Board: Dobler & Mudge, \$59.50 per ton; Mathers-Lamm Paper Company, \$69.95; Republic Bag and Paper Company, \$70; Dennison-Pratt Paper Company, \$65.40; Whitaker Paper Company, \$80.80; American Paper & W. W. Company, \$52; Wilkinson Bros. & Co., \$57.90.

400 sheets 18 x 23 overlay board: R. P. Andrews Paper Company, \$.35 per sheet; A. M. Collins Manufacturing Company, \$.38; Mechanical Chalk Relief Overlay Process, \$.40.

16,000 lbs. best quality binders' board: Dobler & Mudge, \$68 per ton; Mathers-Lamm Paper Company, \$99; Whitaker Paper Company, \$98; Republic Bag and Paper Company, \$75.60; Dennison-Pratt Paper Company, \$101.40; American Paper & W. W. Co., \$57; R. P. Andrews Paper Company, \$94; Wilkinson Brothers' Company, \$107.80.

Bids will be opened at the printing office on June 21 for 1,838

lbs. (50 reams) of green safety writing paper, and on June 23 for 6,860 lbs. (50 reams) 40 x 42 rope manila paper.

50,000 lbs. chip board, 26 x 38—No. 50: The C. L. LaBoiteaux Company, \$.0182 per lb.; Dobler & Mudge, \$.018625; United Paperboard Company, \$.1875; George W. Millar & Co., Inc., \$.018875; Mathers-Lamm Paper Company, \$.01699; Whitaker Paper Company, \$.017465; Reese & Reese, \$.01854.

10,000 orange cardboard shipping tags, 3 x 6¼: The Denny Tag Company, Inc., \$1.99 per thousand; Whitaker Paper Company, \$2.02; International Tag Company, \$2.11 and \$2.57; Campbell Paper Box Company, \$2.10; American Tag Company, \$2.23; R. P. Andrews Paper Company, \$1.87; Dobler & Mudge, \$1.98; Dennison Manufacturing Company, \$2.25; and Gimbel Brothers, \$2.04.

Bids for the following paper were opened at the Government Printing Office on June 19:

1,275 17 x 28—25½ glazed salmon bond paper; 15,000 lbs. calendered tag board, in 24-inch rolls, 26 inches in diameter; 1,350 lbs. 16 x 21—18 No. 20 fine white glazed bond paper, and 16,000 lbs. (3,200 sheets) trunk board, 34 x 44—No. 10.

The purchasing officer of the Government Printing Office will open bids on June 23 for:

2,190 lbs. (20 reams) 21 x 32½—109½ salmon commercial ledger paper, and

7,200 lbs. (150 reams) of 20 x 25—48 rough cover paper.

The Old Dominion Paper Company has been awarded the contract by the purchasing officer of the Government Printing Office for furnishing 1,810 lbs. of 22½ x 28½—181 fawn index bristol board at \$.197 per pound, bids for which were opened on June 12.

### Innovation in Mill Vacations

An innovation in vacations is announced in the mill magazine of the Mead Pulp and Paper Company, by which the mill will shut down for an entire week, from July 2 to 8, and give all vacations of one week or less at that time. Only those needed to make necessary repairs will be retained at work.

The vacation policy of the company is to give three days' vacation with pay for all employees who have been with the company for three years, four days for four-year employees, one week for those with six to nine years' service, and two weeks to those with ten or more years' service.

The company announces that the list of those entitled to such vacations has increased to such numbers that it is no longer practicable for vacations to be scattered through the summer, so the entire plant will be closed down during the vacation period. Those wishing pay before the vacation are enabled to get their money before the holidays. Those who are forced to work during the vacation week will be given their vacations later in the summer. This is a vacation plan recently advocated by Babson, and which he will follow in his own organization, but the Ohio company is probably the first to inaugurate such a plan in the paper industry.

The same number of the mill magazine which makes this announcement prints a complete list of those entitled to vacations, 191 in all, or 43 per cent of the force at Chillicothe, and gives the time allowed to each on the basis of service.

### To Establish New Rates on Paper Stock

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 21, 1922.—The Interstate Commerce Commission has suspended certain schedules until October 13. The suspended schedules propose to establish import commodity rates on paper stock, carloads, from New York and other North Atlantic ports to points in Central Freight Association territory, which are higher than present domestic rates.



*Quality—it means more than price*



“HAFSLUND BEAR” } Bleached  
and “FORSHAGA” } Sulphite

“KLARAFORS” } Easy Bleaching  
Sulphite

STRONG UNBLEACHED SULPHITE

“HURUM” and “BAMBLE”  
Extra Strong Kraft; Bleached and Bleachable Sulphate

“EDSVALLA” and “DEJEFORS”  
(50% Moist) (Dry)  
White Spruce Ground Wood

*Tonnages available on dock for prompt shipment*

THE  
**BORREGAARD COMPANY**  
Inc.  
200 FIFTH AVENUE, NEW YORK CITY

## New York Trade Jottings

The Schmidt & Ault Paper Company announces the appointment of M. L. Macauley & Co., 30 East 42nd street, New York City, as its selling representative in the territory of Greater New York.

The name of the Brooklyn Standard Paper Company, paper bag manufacturers, located in the Bush Terminal building, Brooklyn, N. Y., has been changed to the Brooklyn Standard Bag Company.

The Board of City Record, of New York City, has recently approved Bartlett Bond and Bartlett Ledger, according to a statement made by A. Price & Son, 61 Whipple street, Brooklyn, N. Y.

R. M. Porter, secretary-treasurer of the Woodlands Section of the American Paper and Pulp Association, left New York last Saturday for a two-weeks' vacation in Massachusetts.

W. J. Raybold, vice-president and treasurer of the B. D. Rising Paper Company, and president of the American Paper and Pulp Association, was among the New York trade visitors this week.

During the absence of Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association, and R. H. Porter, Warren B. Bullock, publicity director of the association, is "sitting on the lid," as he aptly phrases it.

President E. C. Robertson, Vice-President B. W. Gates and Secretary-Treasurer V. Paul Travers, of Hydroiloid, Incorporated, 111 Broadway, New York, announce their resignation as officers and directors of that concern.

D. J. McLaurin, vice-president of the New York District of the Salesmen's Association of the Paper Industry, is working up an elaborate entertainment for the annual outing at Melville, Long Island, N. Y., to be held July 12. Plans have been made to have an aeroplane take part in the entertainment.

The Madison Paper Corporation has recently incorporated under the laws of the State of New York, with a capital stock of \$20,000. The incorporators are S. Somers, J. Orozoco and E. M. Miller, their attorney being D. E. Keller, of 51 Chambers street, New York City.

John J. Spinelli, of Atterbury & McKelvey, 145 Nassau street, New York City, was married on June 11 to Miss Mary E. McGrath, of Brooklyn, N. Y. Mr. and Mrs. Spinelli are spending their honeymoon in Yellowstone Park, and upon their return will make their home in Kew Gardens, Long Island, N. Y.

Leonard H. Bogart, secretary and general manager of W. M. Pringle & Co., Inc., New York, announces his resignation as of June 1, and his affiliation with the Milton Paper Company, 110-112 Greene street, New York. Mr. Bogart will devote his entire time to creating new lines and handling of the selling end of the business.

R. S. Kellogg, secretary of the News Print Service Bureau, now on a combined business trip and pleasure tour of the lake states, writes Warren B. Bullock, publicity director of the American Paper and Pulp Association, that he is getting a lovely sunburn in northern Wisconsin. The message was written on the back of a postcard showing the Marathon Paper Mills at Wausau, Wis. Mr. Kellogg is expected back in New York shortly after the first of July.

A statement issued by the treasurer of the Miner-Edgar Company, china clay, 110 William street, New York, reports net earnings for the first four months of 1922 of \$163,299. This shows an increase over the average annual earnings for the past four years of the company and the several corporations recently consolidated with it. The aggregate earnings over the four-year period were \$1,587,802, at an annual rate of \$396,973, compared with the present annual rate, based on the earnings of the first four months of 1922, of \$489,688. It is reported that the company is negotiating refinancing plans to include the marketing of \$1,500,000 in bonds.

The paper industry was honored by the election of Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, as president of the Trade Association Executives in New York City, at the annual meeting just before his departure for Europe. He was vice-president the preceding year and succeeds Alfred Reeves, of the Automobile Chamber of Commerce. Dr. Baker has also been made a member of the department committee on Natural Resources Production of the Chamber of Commerce of the United States, of which Maj. William DuB. Brookings is manager. The departmental committees of the National Chamber have a general advisory supervision over the affairs of the department, and some of the country's best-known lumber and mining men are included in this committee's membership. Dr. Baker's membership on the Forestry and Reclamation of Waste Land committees of the National Chamber has been continued for the coming year.

### New York Golf Tournament

Ardsley-on-the-Hudson, New York, was the scene of the golf tourney staged June 13 and 14 by the New York Paper Trade Golf Association. The results follow:

#### KICKER'S HANDICAP

Harrison Starr.

#### CHAMPIONSHIP. FINALS

First Eight: C. R. McMillan beat Alex Calder 5-4.  
Second Eight: G. G. Abernethy beat A. K. Luke 2-1.  
Third Eight: E. C. Peck beat H. D. Bigelow 1 up.  
Fourth Eight: A. E. Dubey beat H. S. Chalfant 2 up.  
Fifth Eight: Lou Calder beat J. L. N. Smythe 1 up.  
Sixth Eight: Gordon I. Lindsay beat J. H. Lindsay 1 up.

#### BEATEN FOURS

First Eight: D. L. Luke, Jr., beat George Clark 1 up.  
Second Eight: E. A. Weißenmayer beat Fred Burkhardt 4-2.  
Third Eight: D. L. Luke, Sr., beat H. F. Harrison 4-2.  
Fourth Eight: Fred Leahy beat P. A. Harris 4-3.  
Fifth Eight: C. H. Morian beat John R. Miller 1 up, 19 holes.  
Sixth Eight: W. J. Boyd beat C. C. Walden, Jr., 1 up.

#### SPECIAL EVENTS

Luke Trophy.—Best two rounds handicap—won by A. E. Dubey, 186-40-146.

Thirty-six-hole Handicap—won by H. S. Chalfant, 189-36-153.

### To Appraise Hinckley Fibre Co. Assets

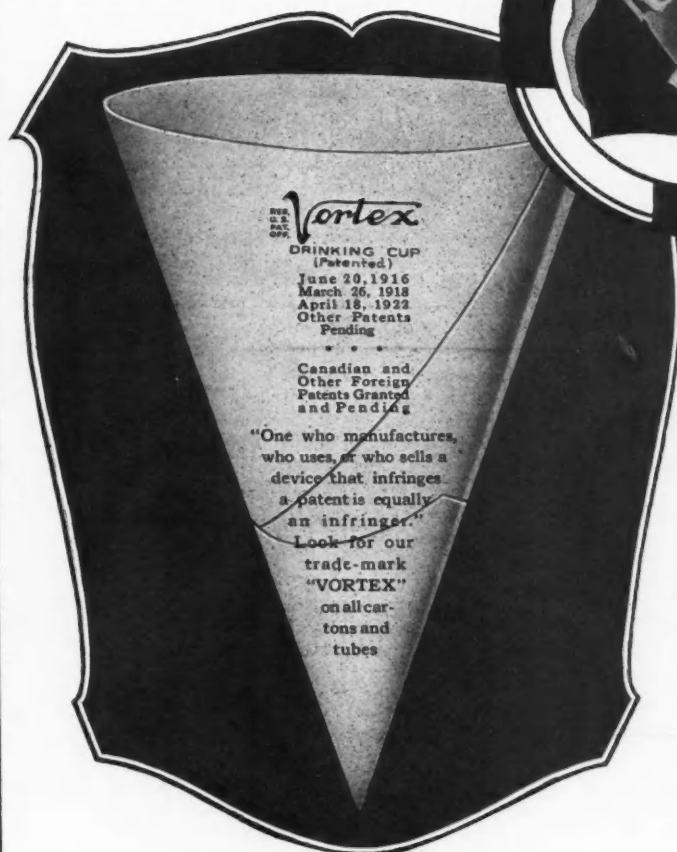
[FROM OUR REGULAR CORRESPONDENT]

UTICA, N. Y., June 20, 1922.—Attorney Charles E. Norris, of Carthage; T. S. Burrowes, of Little Falls, and E. W. Elsworth, of Watertown, have been named appraisers of the property of the Hinckley Fibre Company. The receiver's sale must be held July 1 at Herkimer, and the appraisers will start their work Friday of this week.

The company owns a sulphite mill at Hinckley, large stumpage rights and several thousands of acres of timber land in fee. Its liabilities have been placed at \$1,250,000.

The appointment of these appraisers was made by Federal Judge Frank, of the northern district. They will appraise the value of the real estate of the company and all of its stock.

## The Drinking Cup



# Vortex

The Cone-Shaped Pioneer

FOR years this cup has maintained an outstanding leadership, won and held through unrivaled superiority. Made of heavy quality paper, scientifically sterilized, strongly reinforced and perfect for utility and sanitation. Read the features which explain a few of the excellent points of *Vortex* Drinking Cups.

There is an unlimited market for *Vortex*. They sell easily at an excellent profit. The resale price is very low. Write at once for prices and terms. This line will prove profitable for you.

## Vortex Features

- Made of clean, strong, pure white paper.
- Perfectly sterilized. Meet requirements of Pure Food and other existing Laws.
- Outside reinforced with pure, fully refined paraffin wax. Strong and rigid.
- No wax on inside. Tasteless and odorless.
- No glue. Sealed with paraffin under pressure.
- Spiral wrapping reinforces cup.
- Extra reinforcement at bottom of cups prevents cups sticking together.
- Will not absorb moisture or leak when left for an indefinite period.
- Conveniently shaped; no holders needed.
- Packed in dustproof cardboard tubes; shipped in sealed cartons.
- Nested together and dispensed inverted, inside untouched by hands.

## The Safety Zones

*Vortex* Drinking Cups are the safety zones of double protection.

They protect the user from infections directly traceable to the common drinking cup.

Protection to the seller is afforded that safeguards against legal action which may arise from the use of cups infringing on our fully protected patents.

## THE VORTEX MFG. COMPANY

421-431 North Western Avenue, Chicago

## Obituary

### George J. Babson

[FROM OUR REGULAR CORRESPONDENT.]

DOVER-FOXCROFT, Me., June 20, 1922.—George J. Babson, a leading business man of this town, and pioneer in the pulpwood shipping industry of Piscataquis county, died at his home here last week. Mr. Babson shipped the first poplar from the Piscataquis valley to pulp mills in the western part of the state in 1893, the first shipment being 2,500 cords. With Foxcroft as his operating center, Mr. Babson then rapidly increased the territory operated and the quantity of wood handled. Spruce wood shipments were made by Mr. Babson a year later, and have been continued by him on a constantly increasing scale. Having control of extensive tracts of land in various townships owned by himself and associates, Mr. Babson was prepared to furnish the stumpage or material for anything manufactured from lumber, building up a considerable fortune through his business. He was a public spirited man, having recently given \$5,000 to Dover-Foxcroft, the interest on which is to accumulate for 100 years, when it will be spent for some civic purpose. In the meantime, the principal will be loaned to young men educating themselves, at the normal rate of interest. Surviving are his wife, and three sons, Horace of Fort Worth, Texas; Keith, a student at Harrisburg Academy; and George J. Jr. a student at Phillips-Andover, Mass. Roger Babson, the statistician, is a distant relative.

### Mrs. Lillian I. McEnery

CHICAGO, June 20, 1922.—Lillian I. McEnery, wife of F. T. M. McEnery, of the McEnery Paper Company, 112 West Adams street, died June 7, at her residence, 6831 Jeffery avenue, after an illness of three weeks with pneumonia. Mrs. McEnery is survived by her husband and her daughters, Betty and Ruth. The funeral services were held at 3:45 o'clock Saturday afternoon, June 10, at the Oakwood Cemetery chapel. The interment was at Oakwood.

### Complete U. S. Paper Specification

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 19, 1922.—The committee which has been working on the specifications of paper for the Government Printing Office, of which F. P. Veitch, chief of the paper laboratory of the Bureau of Chemistry, is chairman, completed its work last week. The specifications committee will make an official report to the Joint Congressional Committee on Printing some time this week.

The specifications committee made only a few minor changes in the specifications as compared with the specifications which were completed for the last bid opening for paper for the Government Printing Office. The committee decided that it would go into more detail in its work for the yearly contract beginning March 1, 1923. The specifications committee will suggest to the Joint Committee that the bids be opened on July 31, and the awards be made one week later for the paper for a six months' period beginning September 1. There is no doubt but what the Joint Committee will approve these bids.

At the time the last report was made to the Joint Committee on Printing, the specifications committee suggested that the question of the temperature and humidity conditions under which the paper is tested should be referred to a committee of technical men and that a report should be submitted within six months to the Joint Committee on Printing. This technical committee consisted of Mr. Veitch and Frederick A. Curtis, chief of the paper laboratory of the Bureau of Standards. The report will be made to the Joint Committee on Printing, but no publicity will be given to it at this time because the specifications committee has agreed to let the matter rest until the next opening of bids.

### Navigation on Fox River Halted

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 20, 1922.—Navigation on the Fox River last week was halted from two to three months when the government canal and part of the locks at Little Rapids was carried out by the high water which followed the 48-hour rainstorm. The Little Rapids Pulp Company, at Little Rapids, operated by the Combined Locks Paper Company, will be idle until temporary repairs can be made on the broken canal to divert the water into its power flume. This may require a month or six weeks.

Destruction of the canal and locks was a severe blow to Fox River Valley paper mill owners, most of whom received their coal supplies by barge on the river from the docks in Green Bay. Last year about 125,000 tons of coal was transported on the river, while this year less than 15,000 tons was in the mill yards. Most of next winter's coal supply must be moved by rail at a cost of from 30 to 50 cents a ton above the river transportation costs.

Work is to be started at once on a temporary dam across the head of the destroyed canal to divert the water into the Little Rapids power flume. This dam also will keep the water out of the government canal so that repairs can be made.

None of the other mills in the valley suffered severely from the high water which approached the flood stage of last spring. The water rose more than six feet in two or three hours and some of the mills were slightly hampered by back water. There was little or no property damage to the mills, but the destruction of roads, bridges, railroad tracks and farms amounted to several hundred thousand dollars.

### Fourdrinier Wire Prices

The Armstrong Bureau of Related Industries for its clients, the manufacturers of paper machine wires, furnishes for publication the following prevailing market price information on brass Fourdrinier wires (new standard) as last quoted to the trade by the respective sellers and cleared through the Bureau:

	Price per sq. ft.
No. 60 mesh .....	50—51 cents
No. 65 mesh .....	52—53 cents
No. 70 mesh .....	56—57 cents
No. 75 mesh .....	59—62 cents
No. 80 mesh .....	61—72 cents

### Buried Alive by China Clay for Paper Mills

[FROM OUR REGULAR CORRESPONDENT.]

PORTLAND, Me., June 20, 1922.—One man was buried alive by the caving in of 1,500 tons of china clay imported from Wales for Maine paper mills, on the British steamer *Teesbridge* here this week, and two others were saved from death by a timely rescue. Michael Murphy, a longshoreman, was suffocated, as he was buried beneath the clay for 20 minutes before his body was recovered. Shovelers rescued two other longshoremen. Five men in the hold of the steamer escaped by rushing to the opposite side of the hold.

### Thomas W. Williams Injured in Pulp Mill

ELKTON, Md., June 14, 1922.—Thomas W. Williams, night superintendent at the Radnor Pulp Works here, owned by the Jessup & Moore Paper Company, of Wilmington, is in a serious condition in Union Hospital. He is suffering from serious burns about the face, arms and body. His eyes are also injured. Mr. Williams was in the act of helping one of the employees with an acid pipe, and when the sediments became loose, acid flew out with considerable force, striking him in the breast and splattered on his arms and face, a small portion striking his eyes.



# Watchmen of Health are Watchmen of Wealth So Burt's Drinking Cups Pay Well

helping cut down the 9 days each year the average protected office worker loses through illness. Much of this sickness,—such as epidemics of influenza, quinsy, grippe, pneumonia, etc., or just

common colds are known to be spread by the use of a common drinking glass. Burt's Paper Drinking Cups pay for themselves many times over by preserving the health of employees.

## BURT'S PAPER DRINKING CUPS HAVE TWELVE EXCLUSIVE FEATURES

No wax to taste.

Not easily set aside.

Untouched by hands.

No bottom to fall out.

Lowest priced.

No opening up.

No touching drinking edge before use.

Made of fine white paper.

No animal glue used.

Kept in dust-proof one-at-a-time dispensers.

No softening when holding hot drinks.

Treble reinforced to fit hand without holder.

Hundreds of millions of these cups are being used or shortly will be used by America's leading banks, offices, shops, theatres, hotels, hospitals, etc.

**F. N. BURT COMPANY, INC.**

Paper Cup Division  
**BUFFALO**

**NEW YORK**



## Recent Incorporations

THE DEERFIELD VALLEY PAPER COMPANY, Portland, Maine, to deal in all kinds of paper and paper materials; capital stock, \$650,000 and 10,000 shares of no par value; preferred stock, \$650,000; nothing paid in; par value of preferred stock, \$100; number of shares subscribed, seven common; directors, E. V. Mann (president), M. D. Mills (treasurer), Charles D. Booth (clerk), M. M. Andrews, M. S. Newcomb, F. B. Rowe, H. T. Pierce, Portland; C. D. McCullough, Westbrook.

ENVELOPE DEVELOPMENT COMPANY, Manhattan, New York; patents, 2,000 shares common stock, no par value; active capital, \$74,000. Incorporators, H. J. Wall, I. S. Brown, Jr., I. E. Warwick. Attorney, J. Fuller, Jr., 44 Court street, Brooklyn.

D. LECOUE & Co., Manhattan, New York, rags and paper. Capital, \$10,000. Incorporators, D. LeCoe, P. Fezza, A. Salvo. Attorney, C. Novello, 320 Broadway.

THE SERVICE PAPER BAG COMPANY, Chicago, Illinois; capital, \$18,000; to manufacture and deal in paper bags and other merchandise. Incorporators, M. Raginsky, C. W. Vacca and O. M. Nudelson.

### Charles F. Hubbs & Co. Hold Outing

Charles F. Hubbs & Co., paper merchants, of 389 Lafayette street, New York city, and allied houses, held their twelfth annual outing Saturday, June 10, at Ulmer Park.

The day was an ideal one and everyone present, including Mr. Hubbs, took part in at least one of the many events. The crowd left the office in motor buses and after reaching the grounds proceeded at once with the games, which were as follows; Relay Race—Won by Single Men's team. Go-as-you-please race—Won by H. B. Aschoff. Tug of War—Won by Single Men. Heel and Toe—Won by George E. Beggs of Hubbs & Hastings Company, of Rochester, N. Y. Shoe Race—Won by F. E. Hight. Bucket Race—Won by Kenneth Lyons. Three Legged Race—Won by F. E. Hight and C. P. White. Sack Race—Won by I. L. McCarthy.

Several of the new men, including W. Dickson, P. Anderson, M. Brennan, R. Buchanan, and R. Kelly, were then initiated into the Hubbs Lines Association through the medium of an event designated as the "Get Together of 1922."

This was really a funny affair to be remembered by those who took part in it.

A delightful breakfast was then served, after which the decks were cleared for the annual classic, the baseball game between the married and single men. After a battle which would have done justice to a minor league park, Bill Foge mastered the single men's batters to the tune of five to one. He was opposed on the mound by "Cliff" Doremus, a new man, who with a little more luck might have won.

Dinner was then served, after which C. P. White, who presided, called on A. J. Corning and H. A. Simpson of Hubbs & Corning, Baltimore; Mr. Beggs of Hubbs & Hastings, Rochester; H. J. Severance of Hubbs & Howe, Buffalo, and F. T. Jamison of Interstate Paper & Cordage Company, Pittsburgh. Mr. Mulcahey told character stories, and Harry McCann, accompanied by W. Dickson at the piano, sang character songs, and Mr. White, toastmaster called for three cheers for the committee, Messrs. Hight, chairman, J. H. Doremus, J. J. Mahoney, H. J. McCann, and T. H. Mahar, after which the crowd went home, fully satisfied with the day's fun.

### Safety Program is Planned by Paper Men

F. H. Rosebush, chairman of the Program Committee, is experiencing some difficulty in arranging a suitable program for the meetings of the paper and pulp section to be held Tuesday and

Wednesday, August 29 and 30, in connection with the National Safety Council convention at Detroit.

Those who attended last and previous years' programs have left the convention feeling well repaid for the time spent, and brought back with them some valuable information which they no doubt applied in their work, and the reductions they have made in accident records may have been, in a measure, due to information received at the meetings.

"These benefits are only gained through co-operation of the members. Their accidents, trade risks, and the problems of the industry are all the same," says Walter A. Gleason, chairman of the section. "Why, then, if one member has solved the problem, should he hesitate to give the others the benefit of his experience? As in past years, the work of the section has fallen on a certain few, and the others who share in the benefits take no part in the program.

"It has often been said that if you put nothing into a program you will not take anything out of it. Your safety problems during the past year have no doubt offered you some very interesting solutions. You must have some problems which are giving you difficulty. Let us know about them—perhaps some of us may have solved them.

"Ideas or suggestions may be sent to Mr. Rosebush, care of Nekoosa-Edwards Paper Company, Port Edwards, Wis., or to myself at the Hammermill Paper Company, Erie, Pa. Better yet, if you are called upon by the Program Committee to take part in the program, do so. Come at any rate with your mind made up to take part in the discussions. We want to have a large attendance, with some good, lively discussions."

### Paper Industry Has Normal Production

"October or late September will probably see the paper industry back to the normal position which it can be expected to maintain through the next winter and spring, at least," says the monthly review of business of the paper and pulp industry, the bulletin of the American Paper and Pulp Association. "This is the indication as the result of the improvement of business during the past two months.

In fact the industry is now back to normal production, but with the dull months of summer approaching it is not certain that a maintained prosperity can be achieved before the fall.

"Orders are, however, increasing for the various grades of paper, and the outside statistical agencies are advising the purchases now of some grades to meet the needs to the end of the year.

"Paper production and shipments for March were the largest since October, 1920, according to the Federal Trade Commission reports. The volume of orders and production in the fine paper branch of the industry is now well stabilized, business having been around the 80 per cent level from February into June, news print production for March as reported by the United States Department of Commerce, was on an index number of 103 with the 1919 average as the base of 100, and production of other grades was 119.

"Box board is the only weak spot in the industry, this being due to a price war between paper box manufacturers. Coated paper faces the loss of its important export trade if the proposed 4 cents duty is placed on casein, as this would divert the essential Argentine supply to Germany, and enable the Germans to take the export market now held by America."

### Senate Committee May Take No Action on Casein

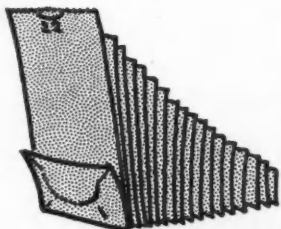
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 21, 1922.—While the Senate Finance Committee has received the brief of the American Paper Manufacturers protesting against a 4 cent per pound duty on casein, it is understood that no action will be taken by the committee.

Indications are that no change will be made in the casein rate on the floor of the Senate, but an effort will be made to change the rate in conference.



**B**Y centering your efforts on one standardized line of grocers' bags, you avoid tying up much capital and are not compelled to load your warehouse. It will pay you to decide—**TODAY**—to

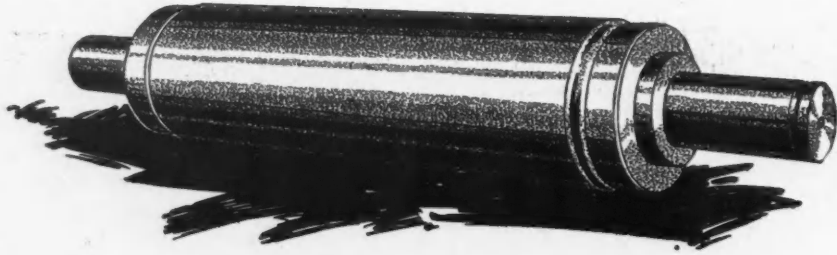


Lawrence Grocers' Bags are made in Improved Self-Opening and Old Style Squares. They are good honest values—offering both you and your customers the utmost in character and in uniformity.

# LAWRENCE GROCERS' BAGS

*James Lawrence, President*

**THE LAWRENCE BAG COMPANY**  
MIAMISBURG, OHIO



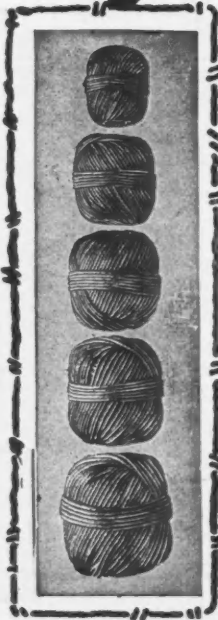
## SUPER CALENDER ROLLS

The final touch is given your paper stock by the Calender Rolls. For half a century our rolls have been putting that finishing touch upon papers that have an acknowledged superiority.

**THE APPLETON MACHINE COMPANY**

APPLETON WISCONSIN

# "AMERICAN"



PAPER MAKERS TWINE

TUBE ROPE

WALL PAPER TWINE

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FINE AND COARSE POLISHED TWINES

"AMERICAN" BRAND MANILA ROPE

"AMERICAN" BRAND TRANSMISSION ROPE

The name "AMERICAN" as applied to cordage means "more value in every way." Send for copy of our General Catalogue, Prices and samples. Address Department M.

*Largest Makers of Commercial Twines and Rope in the World*

**AMERICAN MANUFACTURING CO.**

NOBLE AND WEST STREETS, BROOKLYN, NEW YORK CITY

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**GROUND WOOD  
CHEMICAL PULPS**

**PERKINS-GOODWIN CO.**  
NEW YORK

**PAPER**

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# Becker Paper Corporation

**350 Madison Ave., New York, N.Y.**

317 Main Street, Springfield, Mass., Branch Office for New England States

Dealers in All Grades of Paper

SPECIALISTS IN

**BOOK PAPER, GLASSINE and EMBOSSED  
GLASSINE PAPERS**

Exclusive Distributors for

**WESTFIELD RIVER PAPER COMPANY  
RUSSELL, MASS.**

## VELURE-SURFACE FELTS

This is the name we have adopted for our high finish FELTS to distinguish from similar felts not of our make.


NOT a new FELT with us, simply a new name so the trade will know our SUPERIOR and DISTINCTIVE FELTS by a DISTINCTIVE name.

We recommend VELURE-SURFACE FELTS where high finish is required and YOUR conditions will warrant.

Write for our blanks so you can furnish us the information we need, and we will guide you right and save you MONEY.

YOURS FOR SERVICE.

**LOCKPORT FELT COMPANY**  
NEWFANE, N. Y.



# WOOD PULP

*We solicit your inquiries for*


- Bleached Sulphite
- Unbleached Sulphite
- Bleached Soda Pulp
- Groundwood
- Kraft

**THE MEAD SALES CO.**

111 West Washington St.,  
Chicago, Ill.

PULP DEPT.

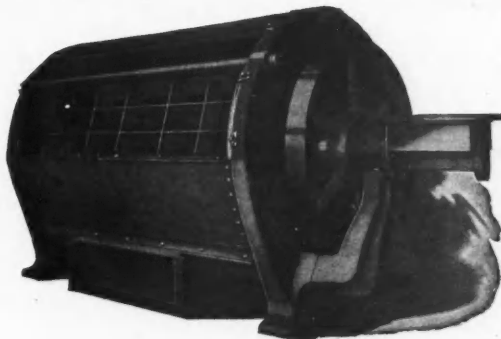
Callahan Bank Bldg.,  
Dayton, Ohio.



# "IMPCO" TAILING SCREENER

## FOR SCREENING GROUND WOOD TAILINGS

Very Low  
Power  
and  
Upkeep Expense



Delivers  
Rejections Free  
from Good  
Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING  
*WRITE FOR FULL DETAILS* *CORRESPONDENCE A PLEASURE*

**IMPROVED PAPER MACHINERY CO.** Nashua, N. H.  
SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

# WHALEN SULPHITE PULPS

Made from the SITKA SPRUCE of BRITISH COLUMBIA  
Noted for Fibre, Color and Strength

**SNOWWHITE  
BLEACHED  
SULPHITE**

**GLACIER  
EASY BLEACHING  
SULPHITE**

**SWAN  
STRONG  
SULPHITE**

As exclusive Sales Agents for all of the products of the WHALEN PULP & PAPER MILLS, LTD., in addition to stocks at the mills, we will carry large stocks of the above well-known brands in New York, thus insuring prompt deliveries.

Your inquiries addressed to any of our offices will bring prompt quotations by wire.

**CANADIAN ROBERT DOLLAR CO., Limited**  
VANCOUVER, B. C.

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Robert Dollar Co., Robert Dollar Bldg., San Francisco.  
Robert Dollar Co., 15 Moore Street, New York, N. Y.  
Robert Dollar Co., Harris Trust Bldg., Chicago, Ill.  
Robert Dollar Co., L. C. Smith Bldg., Seattle, Wash.

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Robert Dollar Co.,  
Shanghai, Hong Kong,  
Hankow, Tientsin,  
Ichang, Chungking, and  
Pekin, China; Kobe,  
Japan; Calcutta, India;  
Manila, P. I.; Singapore,  
S. S.

# Editorial

Vol. LXXIV New York, June 22, 1922 No. 25  
FIFTIETH YEAR

## Waste in the Industry

A general survey of the industry, indicating the chief avenues of waste particularly of material, with emphasis on those easily possible of elimination with consequent increase of efficiency is being undertaken by a committee of the Technical Association of the Pulp and Paper Industry of which Robert B. Wolf is chairman and George D. Bearce is vice-chairman.

So far those who have expressed a desire or willingness to participate are the following: Reuben B. Robertson, Champion Fiber Company, Canton, N. C.; H. O. Keay, Laurentide Company, Grand Mere, Que.; O. L. Berger, G. D. Jensen Company, New York City; J. D. Rue, Forest Products Laboratory, Madison, Wis.; F. J. Morrison, Newton Falls Paper Company, Newton Falls, N. Y.; H. P. Carruth, Mead Pulp and Paper Company, Chillicothe, Ohio; Ernest Mahler, Kimberly-Clark Company, Neenah, Wis.; Philip K. Fletcher, Fletcher Paper Company, Alpena, Mich.; H. S. Taylor, Mead Pulp and Paper Company, Dayton, Ohio.

After a somewhat detailed survey of the pulp and paper industry two of the lines for special study suggested at the annual convention of the Technical Association of the Pulp and Paper Industry were the prevention of losses or means of recovery of material in the mill effluent and the utilization or more efficient use of barker drum refuse. While only a minority of paper and pulp mills are confronted with the problem of barker drum refuse they represent by far the major portion of the production of paper and are largely located in areas where coal carries a high cost. The utilization as fuel and improvements in apparatus in removal of the water is the most probable solution. The question of mill effluents is or should be of vital interest wherever a mill is located. Not only does it usually carry in it valuable paper making material but being discharged into the streams and lakes constitute the stream pollution that is charged to the industry. A great many of the stream pollution charges have been shown to be unfounded, nevertheless the public has retained the general belief that wherever there is a paper or pulp mill there is stream pollution.

A thorough study of its own condition by each mill would appear to be an extremely valuable procedure.

## Foreign Paper Trade

The exports of paper for April, according to statistics just issued by the Department of Foreign Commerce, again showed an increase as compared with the preceding month. While the increase is not large it is nevertheless gratifying because it apparently indicates that the decline which has been constantly registered for many months past has come to an end and that a permanent improvement has set in. The figures for April were \$2,164,860 as compared with \$2,074,373 for March and \$2,027,604 for April of last year. The exports of paper for the ten months ending with April were valued at \$16,379,417 as compared with \$53,179,897 for the same period of last year.

The exports of news print especially showed a good increase, the figures for April being \$308,928 as compared with \$246,275 for March and \$186,518 for April of last year. The exports of news print for the ten months ending with April amounted to \$1,558,880 as compared with \$4,307,133 for the corresponding period last year.

The exports of cover paper for April amounted to \$16,375 as compared with \$16,319 for March; of grease-proof and waterproof paper \$10,808 as compared with \$9,515 for March; of wrapping paper \$203,124 as compared with \$212,530 for March, of writing paper except papeteries \$121,045 as compared with \$99,259; of surface coated paper \$44,575 as compared with \$66,039 for March; of tissue and crepe paper, \$46,997 as compared with \$48,910 for March; of toilet paper \$38,553 as compared with \$45,700 for March; of bristols and bristol board \$29,316 as compared with \$14,304 for March; of paper board and strawboard \$158,869 as compared with \$160,873 for March and of paper bags \$101,507 as compared with \$98,592 for March.

The imports of paper for April showed a decrease as compared with March, the figures for the former month being \$6,498,575 as compared with \$7,150,576 for the latter and \$8,546,577 for April of last year. The imports of paper for the ten months ending with April were valued at \$70,618,272 as compared with \$86,481,792 for the same period last year.

The imports of news print for April also showed a decline, the figures being \$5,285,534, as compared with \$5,455,889 for March and \$7,513,087 for April of last year. The imports of news print for the ten months ending with April amounted to \$59,843,722, as compared with \$72,047,121 for the corresponding time last year.

The imports of rags for April was valued at \$285,722, as compared with \$331,526 for March and \$109,207 for April of last year. The imports of rags for the ten months ending with April were valued at \$2,513,252 as compared with \$5,392,593 for the same period last year.

The imports of all other kinds of paper stock for April was valued at \$228,289, as compared with \$259,189 for March and \$261,940 for April of last year. The imports of all other kinds of paper stock for the ten months ending with April were valued at \$2,477,079, as compared with \$4,857,888 for the corresponding period of last year.

The imports of mechanical pulp for April were valued at \$318,861, as compared with \$296,035 for March and \$216,573 for April of last year. The imports of mechanical pulp for the ten months' period ending with April were valued at \$4,804,623, as compared with \$11,709,353 for the same period last year.

The imports of unbleached sulphate for April were valued at \$948,944, as compared with \$850,459 for March and \$563,072 for April a year ago. The imports of unbleached sulphate for the ten months ending with April amounted to \$11,154,721 as compared with \$13,881,374 for the same period last year.

The imports of unbleached sulphite for April amounted to \$1,418,783, as compared with \$952,139 for March and \$646,892 for April of last year. The imports of this variety of pulp for the ten months ending with April were valued at \$15,154,311, as compared with \$29,239,785 for the same period last year.



The imports of bleached sulphate for April were valued at \$36,870, as compared with \$14,527 for March and no imports for April of last year. The imports of bleached sulphate for the ten months ending with April were valued at \$348,633, as compared with \$1,178,657 for the same period last year.

The imports of bleached sulphite for April were valued at \$1,438,707, as compared with \$1,108,642 for March and \$295,201 for April of last year.

The imports of bleached sulphite for the ten months ending with April were valued at \$10,258,416, as compared with \$15,649,942 for the corresponding period of last year.

### The First Sulphite Mill in America

Editor, PAPER TRADE JOURNAL: BOSTON, Mass., June 7, 1922.

In examining your valuable and most interesting Fiftieth Anniversary Number, I note that in the excellent review by O. L. Berger of the "Development of the Sulphite Process," he states that "G. N. Fletcher built the first sulphite mill in the United States at Alpena, Mich., in 1887."

In the interest of historical accuracy, I desire to point out that in this particular statement Mr. Berger is in error. The first sulphite pulp mill in the country was that of the Richmond Paper Company at Rumford, near Providence, R. I. Its construction was begun in 1883, and it went into operation in 1884, using the process which Carl Daniel Eckman had developed at Bergvik, Sweden, in which the wood was cooked in a solution of bisulphite of magnesia. I went to this mill as chemist in the summer of 1884, and shortly afterward was made superintendent of the pulp mill. James Marshall, the brother of the famous papermaker, George Marshall, was at that time superintendent of the two-machine book mill, which formed a part of the same plant. A little later John G. Luke succeeded Marshall as superintendent of the paper mill.

The credit for the reintroduction of the sulphite process to this country, after the abandonment by Tilghman of his experiments, belongs, therefore, to Charles S. Wheelwright, who, with his associates, acquired the Eckman patents and organized the Richmond Paper Company.

The Fletcher mill, to which Mr. Berger refers, was not even the second mill in the country, for in 1885 I was sent by Mr. Wheelwright to Newbern, N. C., to bring into operation the small mill of the S. H. Gray Manufacturing Company, making sulphite pulp from cypress and gum wood, also by the Eckman process.

Either contemporaneously with the Fletcher mill, or a little before Rogers and Van Nortwick built the sulphite pulp mill of the Wisconsin Sulphite Fiber Company at Monaco, Wis., using the quick-cook process with bisulphite of lime in rotary digesters, where I was employed supervising operations during the winter of 1887.

Yours faithfully,

ARTHUR D. LITTLE.

NOTE.—In justice to Mr. Berger it should be stated that he undertook the preparation of the article on the "Development of the Sulphite Process" in the Fiftieth Anniversary Number of the PAPER TRADE JOURNAL, referred to in Mr. Little's letter, reluctantly, stating in his opening paragraph: "It is, of course, impossible to give any really comprehensive account of the history of the sulphite process in a short article of this kind, neither would I be the right man to write such a history. I will, however, give a few dates and names as I have found them in the altogether too scant literature we have pertaining to this industry." It was, of course, the intention of neither Mr. Berger nor the PAPER TRADE JOURNAL to detract from the credit due anyone, and Mr. Little's correction is therefore gladly printed so that it may be easily accessible in the future among the all too meagre facts that are commonly known regarding the early history of the sulphite industry in this country.—EDITOR.

### "Water Power in Canada"

MONTREAL, Que., June 17, 1922.

Editor, PAPER TRADE JOURNAL:

Sir: The editorial by B. T. McBain appearing in your issue of June 8, entitled "Water Power in Canada," intended, evidently, to provide an argument in support of a high tariff on importations of pulp and paper from Canada into the United States, gives a decidedly erroneous impression of the contrasting industrial conditions in the two countries. Admitting that it would not be becoming for an outsider to discuss another country's fiscal policy, which is purely a domestic concern, it may perhaps be permissible to indicate wherein the inferences contained in the editorial appear to be at fault.

Your editorial speaks of the "many wonderfully large water powers, some of them running as high as 200,000 to 300,000 horsepower," at the disposal of the pulp and paper mills in the region "north of Montreal, Que.," the power from which costs the mills "practically nothing beyond the interest on cost of development."

The facts are that the total installation of hydraulic motive power for all Canada, not Quebec alone, employed in the operation of pulp and paper mills and their subsidiary industries, amounts to but 637,080 horsepower. This includes all power derived from hydraulic sources, both direct and indirect. The amount of electrical energy derived from water-power so employed amounts to 339,488 horsepower. Of the latter amount, the companies purchase from outside sources some 160,577 horsepower, leaving 178,911 derivable from their own power installations. For the purchased power the companies pay the current market price, which, in most instances, varies but little from the cost of similar energy in the United States. But whether they buy their power or develop it themselves, it is incorrect to infer that it represents no greater cost to them than the interest on the cost of the development. Hydro-electric power costs, other things being equal, are very much the same in both countries.

The further inference that pulp and paper mill labor costs are considerably less in Canada than in the United States is similarly erroneous. International union wage scales and conditions apply to a majority of the mills in Canada, the same as in the United States. Expert labor comes higher here because much of it is derived from the United States and requires special inducements to persuade it to migrate to Canada.

If it were literally true, as asserted, that Canada's forehandedness in building dams and constructing extensive hydro-electric developments, taken with the States' alleged neglect to follow a similar course, gives the Dominion an undue advantage in the pulp and paper market as compared with the American producers, that fact would seem to constitute a reflection upon American enterprise rather than a basis for sympathy, were it not for the additional fact that much of the Canadian development of which complaint is made owes its existence to American initiative and the investment of American capital, the chief inducement being the more abundant raw materials to be found here, and that a large proportion of the resulting benefits flow across the border.

The question arises, should such capital be penalized merely because it is invested on the north instead of the south side of an imaginary line?

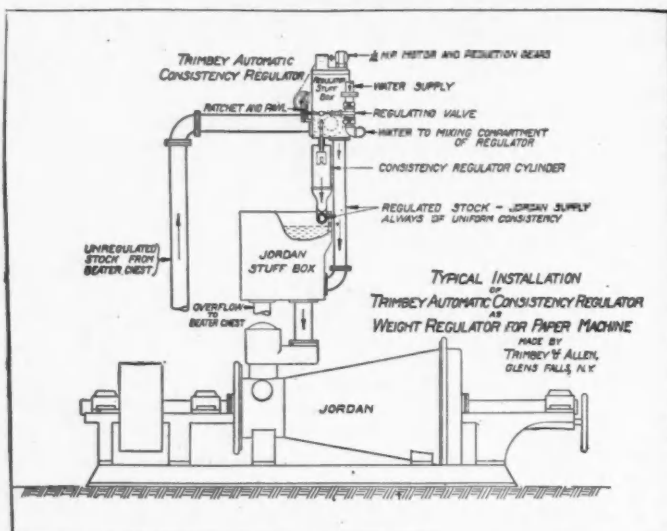
EDWARD BECK, Secretary,  
Canadian Pulp and Paper Association.

### U. S. Printing Office Testing Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 21, 1922.—All paper for the use of the Government Printing Office is now being tested in a paper laboratory at the Printing Office. As is well known to the trade, the paper heretofore has been tested at the paper laboratory of the Bureau of Standards and sometimes in the paper laboratory of the Bureau of Chemistry. E. O. Reed, formerly connected with the paper laboratory of the Bureau of Chemistry, is in charge of paper testing at the Government Printing Office.

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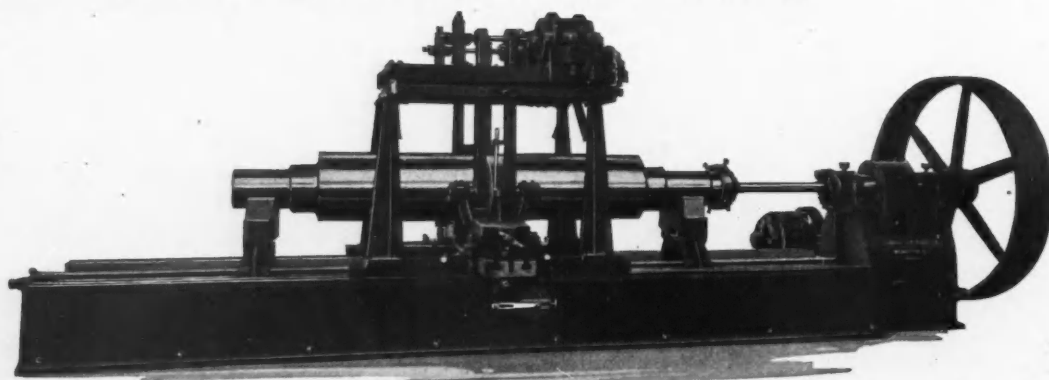
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## Section of the

**Technical Association of the Pulp and Paper Industry**

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by **W.G. MacNAUGHTON, Secretary**

**TO GIVE EXTENSION COURSE IN PAPER MAKING**

The first correspondence study course on the manufacture of pulp and paper will be given next September by the University of Wisconsin according to announcement made at the Forest Products Laboratory, Madison, Wis., on June 8, when plans for such a course were made in a conference attended there by R. S. Kellogg of the Vocational Education Committee of the Pulp and Paper Industry, George Hambrecht and A. R. Graham of the Wisconsin Board of Vocational Education, Professors L. E. Reber and B. G. Elliott of the University of Wisconsin and Director C. P. Winslow and Dr. John D. Rue of the Forest Products Laboratory.

**To Give Five Courses**

Five courses based on Volume 3 of the test books prepared by the Vocational Education Committee of the Pulp and Paper Industry will be given. One course covering the entire volume will contain 32 study assignments. The four other courses were outlined similarly to the one above with the exception that each will contain but one of the four pulping processes. All of the courses will include instruction on the process leading up to pulping, including wood preparation, and following the pulping process beginning with pulp treatment. A fee of \$20.00 will be charged Wisconsin residents for the 32-assignment course. The other courses will cost \$15.00 each. If text books are included in the courses the university may charge \$5.00 extra per course. All of the courses will be available to residents outside of the State of Wisconsin at the regular rate plus an additional registration charge of \$2.00 per course.

**University to Give Study Course**

According to the co-operative arrangement the University of Wisconsin will administer the courses and the Forest Products Laboratory will correct the papers and have actual charge of the teaching of the courses, Dr. C. E. Curran of the laboratory pulp and paper staff will have charge of the correction of the papers. All of the information in the laboratory files and such technical advice as the members of the pulp and paper staff can give will be available to all students who take the course.

The University of Wisconsin is now preparing a descriptive pamphlet relating especially to the first set of five courses. These pamphlets will be distributed as soon as possible by the university. Similar material will be prepared for the Vocational Education Committee of the Pulp and Paper Industry to be used with the committee's bulletin to be issued soon, and which outlines the educational facilities for pulp and paper manufacture in the various states.

**Course Supported by Technical Associations**

Dr. Rue, in charge of the pulp and paper section of the laboratory, announced at the meeting that Volume 4 of the text books prepared by the Vocational Education Committee will be ready for publication in October and that Volume 5 will be ready early in 1923. In speaking of the correspondence course to be given, Dr. Rue explained that it was not the idea of the committee to teach pulp and papermaking by book study, but to give the young men and apprentices at the mill machines who desired to know the why and wherefor of their work and who desired to improve themselves in work and position, and opportunity to take an organized and supervised course of study in modern pulp and papermaking. He said the vocational course was the outcome of the work of the joint Canadian and United States Committee of the Technical Association of the Pulp and Paper Industry. The courses will be the first ever given by correspondence on the study of paper and pulp.

**Reorganization of Pulp Manufacturers Association**

A reorganization of the Pulp Manufacturers Association, forced by the unfavorable manufacturing and financial conditions of the year and more of depression, in which the element of foreign competition had no small part, has resulted in this association being brought for the time being under the wing of the American Paper and Pulp Association. O. M. Porter, Assistant Secretary of the American Paper and Pulp Association, has become Secretary of the Pulp Manufacturers Association, and will co-ordinate its work with that of the Woodlands Section, of which he is also secretary. The close relation between the Pulp Manufacturers Association, and the Woodlands Section of the American Paper and Pulp Association will, it is expected, be a step to the advantage of each group.

The retirement of H. H. Bishop, as secretary of the pulp manufacturers, takes the dean of the paper association secretaries out of the industry. The change was only made after a long series of conferences in which Mr. Bishop's advice as to the method of continuing the work of the Pulp Manufacturers Association was largely followed. Under the new arrangements, the Pulp Manufacturers Association will retain its identity and individuality, but considerable saving in overhead will be effected, until such time as the association can return to its old plan of maintaining separate offices and office force.

Mr. Porter will continue as assistant to Dr. Baker, in addition to his new duties with the pulp manufacturers, but his attention will be largely devoted to the problems of the raw materials of the paper industry.



## DRYING OF PAPER

In order that records may harmonize the Committee is endeavoring to develop a data sheet outlining a standard procedure to cover the essentials that will coincide with engineering practice. It is planned to submit the data sheet shown herewith to a number of engineers in the membership for their approval or suggestions.

To conduct the investigation in any mill it is necessary to know the amount of water evaporated in the drying operation and also the heat units applied.

It is necessary to calculate the quantity of water evaporated from the quantity of paper passed over the dryers, taking into consideration the difference in moisture content of the paper going to the dryers and coming off. It is necessary to agree to what is the quantity of paper on which this calculation shall be based. This may be fixed as the weight of all the paper that comes off the dry end of the dryer stack and includes not only the merchantable paper but also the weight of the dry broke at the calenders, reels and winder—in fact all the paper that has been dried. It has been suggested that the damp broke that may be made in the dryers due to the paper winding on a dryer cylinder, may be neglected as it is usually very small in amount. To compute the water evaporated it is necessary to have the average moisture in the sheet to the dryers and to the reels.

Knowing the weight of water evaporated, it was agreed that the calculation should be the heat units necessary to raise this quantity of water from its initial temperature to 212° F., and to evaporate it from that point. It is recognized that much of the water may be evaporated at a lower temperature than 212° F., depending on quantity and the relative humidity of the circulating air and the consequent rate of evaporation. In order, however, that calculations might be concordant, the evaporation temperature of 212° F., was agreed upon.

The heat is applied in the form of steam and some method of measurement is necessary. Undoubtedly the most accurate method is by the weight of the condensed water discharged from the dryers. In many mills, however, this is not possible as the condensate is maintained under pressure and delivered direct to the boilers. Where dumping traps are used and the weight of condensate handled in each cycle is constant and known, a counter on the trap might be employed to compute the pounds of steam used by the paper machine for drying. Knowing the heat units per pound of steam and the heat units per pound of condensate with the weight of each, the quantity of heat units supplied to the paper machine can be computed. Where one mill uses the condensate method and another the steam flowmeter, a difference is possible since the condensate represents only the steam that has been condensed in the dryers while the flowmeter will record in addition, the steam that may be exhausted to atmosphere. In many instances where both exhaust and live steam is used this discharge to atmosphere is more or less continuous. Since the condensate method would not indicate such a loss it would appear that the flowmeter is preferable. Where both exhaust and live steam is used there may be some difficulty in measuring the relative quantity of each. In such cases a flowmeter on each line may be necessary. Where live steam is used through a reducing valve, the superheat due to reduction in pressure should be taken into account.

The calculations outlined for air would seem to be largely for the purpose of locating losses of efficiency shown up by difference between the theoretical heat required and that supplied. An excessive amount of air exhausted at low relative humidity would indicate a loss of heat. From a study of average air conditions the quantity of ventilating air required

to carry off the water evaporated can be easily calculated.

The committee of which F. C. Clark, Pejepsco Paper Company, Brunswick, Me., is chairman, will welcome suggestions and criticisms of the proposed standard method. The subject of paper drying is so important in manufacturing that it is hoped that executives will recognize the value of the investigation undertaken and will encourage their engineers and superintendents to cooperate in it.

Test at Mill.....	
Machine No. ....	
Date, June 6-10, 1922.....	
Duration of test in hours.....	116
<b>PAPER</b>	
1 Grade .....	Sample
2 Actual basis weight (a) as made; (b) bone dry = (100-Item 7) × 2a.....	Standard News 32.5 lb. 29.57 lb.
3 Actual average trim = width of sheet leaving last dryer.	150 in.
4 Actual average speed = Tachometer.....	600 f.p.m
5 Actual hours that paper went over dryers = Tachometer.	100 hrs.
6 Percentage of fibre in sheet at first dryer (bone dry basis) .....	30 per cent
7 Percentage of moisture in sheet leaving last dryer (bone dry basis).....	9 per cent
8 Net percentage of moisture to be evaporated = (100-Item 6) ÷ Item 7.....	233.3 per cent
9 Bone dry weight of paper delivered by dryers $S \times T \times B$ or $\text{Item 4} \times \text{Item 3} \times \text{Item 2b}$ $\frac{600}{\text{hours (Item 5)}} \times \text{Actual}$	
10 Total weight of water evaporated = Item 8 × Item 9..	477,500 lb.
11 Average temperature of sheet entering dryers.....	1,114,166 lb. 60° F.
12 Total theoretical heat units required to evaporate the water from and at 212° = (H-h) × Item 1C *H = Total heat of steam at average gauge (Item 13) *h = Heat in water entering dryers above 32° F....	12,654,700,000 B.t.u.
*Marks & Davis Steam Tables	
<b>STEAM</b>	
13 Steam pressure 15.3 lb. gauge (a) Kind Exhaust.....	
14 Total lbs. of steam to dryers (Flow Meter).....	1,525,000 lb.
†Steam consumption may also be computed from the amount of condensate ejected by the drying system. Condensate may be measured by "V" notch meter or other fluid meters. It may also be possible to compute amount of condensate water from traps in special systems.	
15 Total heat units to dryers.....	17,733,400,000 B.t.u.
If exhaust or saturated steam is supplemented by superheated steam, the (1) quantity and (2) degrees of superheat should be considered in computing total heat units.	
16 Temperature of condensate — Recording thermometer.....	193° F.
17 Total lbs. of condensate from dryers.....	1,450,000 lb.
18 Total heat units in condensate = h × Item 17; h = heat units above 32° F per lb. of condensate.....	233,400,000 B.t.u.
19 Total net heat units consumed by dryers = Item 15 — Item 18.....	17,500,000,000 B.t.u.
20 Drying efficiency = $\frac{\text{Item 12}}{\text{Item 19}}$	72.2 per cent
<b>AIR</b>	
21 Cubic feet of air removed per hour.....	
22 Temperature of air, (a) Incoming; (b) Outgoing.....	(a)..... (b).....
23 Humidity of air, (a) Incoming; (b) Outgoing.....	(a)..... (b).....
24 Moisture entering drying system.....	(a).....
25 Moisture leaving drying system.....	.....
26 Total net water evaporated. This figure may be used as a check on the total amount computed from the weight of the paper (Item 10). Variations are liable to occur, due to the difficulty of obtaining correct air measurements .....	.....
<b>STATISTICAL</b>	
27 Number of dryers (felt dryers not included).....	30
28 Size of dryers, (a) Diameter, 48 inch; (b) Width; (c) Total area of dryers.....	(a) 164 in. (b) 5,150 sq. ft.
29 Width in contact with paper.....	150 in.
30 Percentage of circumference in contact with paper....	66 per cent
31 Effective drying surface (sq. ft.) = $(48" \times 3.1416) 66 \times 15C$ $\frac{144}{\text{}} \times 3C =$	4,716 sq. ft.
32 Pounds of paper per square foot of effective drying surface: (a) Bone dry = Item 9 ÷ Item 31..... (b) As Made = Item 32a — (Item 7 × Item 32a).....	(a) 101 lb. (b) 110.1 lb.
33 Heat units used per pound of water evaporated.....	15,720 B.t.u.
34 Heat units used per pound of paper dried: (a) Bone dry — (Item 19 ÷ Item 9)..... (b) As made Item 34a — (Item 7 × 34a).....	(a) 36,700 B.t.u. (b) 33,400 B.t.u.
35 Pounds of steam per pound of water evaporated.....	1.37 lb.
36 Pounds of steam per pound of paper dried: (a) Bone dry (Item 14 ÷ Item 9)..... (b) As Made (Item 36a — Item 7 × Item 36a)...	(a) 3.2 lb. (b) 2.912 lb.



## SOME OBSERVATIONS ON THE DE-INKING OF OLD NEWSPAPERS\*

By SIDNEY D. WELLS, ENGINEER IN FOREST PRODUCTS, FOREST PRODUCTS LABORATORY, MADISON, WIS.

The use of old paper stock for the manufacture of paper is very old and we find mention of a process by George Balthasar Illy in Denmark as early as 1695. In 1765 Dr. Jacob Christian Schaffer mentions its use in his "Papier Versuchen." In 1775 Professor Klapproth of the University of Gottingen suggests the use of turpentine and clay for the purpose. In 1794 during the French Revolution, Citizen Masson, a woman, ran an establishment for the conversion of old papers into new. In 1801 Matthias Koops established the Neckinger Mill at Bermondsey, England, to de-ink printed papers and make new paper therefrom using dilute alkali to dissolve the varnish in the ink, clay to act as a carrier, and washing to remove the carbon black, bleaching with chlorine followed to brighten the stock. Henry E. Rogers is first mentioned to use old papers in the manufacture of paper in the United States in a mill near Hartford, Conn., in 1849. During the last fifteen years, however, interest in the subject seems to have been unusually active and a great number of patents have been taken out suggesting the use of alkalies, soap, margaric acid and oleic acid in conjunction with alkalies, whiting, clay, talc, ground soapstone, earthy matter, etc.

In general, they consist of the solution of the varnish with some alkaline compound such as caustic soda, soda ash, or sodium soaps to liberate the carbon black and the holding of the particles of carbon black in colloidal suspension by preventing agglomeration with the use of peptizing agents such as soaps, silicic acid, aluminum hydroxide, vegetable jellies and clay, talc, whiting, etc. containing traces or small quantities of colloidal matter. In the case of clays and talc, what value they possess as a protective colloid is due to the fact that their smallest particles are peptized by the alkalies, especially if digested at high temperatures. Only papers free from groundwood can withstand the alkalinity and temperatures commonly used, as it is well known that groundwood cannot withstand such treatment without discoloration and attempts to completely de-ink newspapers have as a rule not met with success.

Early in 1921 the Forest Products Laboratory undertook a series of comparative tests at the expense of The Paper De-Inking Co. to determine the efficiency of a process patented by them which proposed using bentonite as the peptizing agent or protective colloid in conjunction with alkalies in comparison with other methods proposed. The result of the work showed such marked improvements in the process by the use of bentonite, especially when applied to News, that it seemed desirable to publish them and discuss so far as possible the principles involved.

Bentonite is defined by the United States Geological Survey as a transported, stratified, volcanic ash that has been altered shortly after deposition. It is very fine grained and had the property of swelling in contact with water to several times its original volume into a jelly like mass which on further dilution forms colloidal solutions which will remain in suspension indefinitely in mixture as dilute as one part of bentonite to fifty parts of water. Like any natural product different deposits differ considerably and the finest grained or most colloidal that have come to the writer's notice occur in Wyoming although samples from many deposits in that State proved to be low in colloidal content. Samples freshly taken from the quarries are of a greenish yellow color but on exposure to the air become light cream. Numerous chemical analysis have been reported and considerable variation exists in samples from various sources. It is a mineral akin to kaolin al-

though generally yielding on analysis more silica, less alumina, and more magnesia, and has been found to be an excellent filler for paper. It is its physical properties, however, that renders it of most value in de-inking paper and of these fineness is of most importance. Comparative tests with an excellent deposit of Wyoming bentonite, English china clay, and Georgia china clay in which one part of each was mixed in one hundred parts of water gave the following results on standing twenty-four hours:

	Parts remaining in suspension
Wyoming Bentonite .....	.78
English China Clay .....	.001
Georgia China Clay .....	.01

In de-inking printed paper and especially newspaper it is comparatively easy to loosen the carbon black by dissolving the varnish of the printing ink by means of alkalies such as sodium carbonate or caustic soda using as little as forty pounds of sodium carbonate per ton of paper and temperatures as low as one hundred and twenty degrees Fahrenheit. Such treatment will not injure groundwood pulp and if the carbon black could be completely washed out after liberation a satisfactory material would be obtained. Unfortunately the fibers of the paper stock serve as a very effective filter in immeshing the particles of carbon and there are no means of washing in common use that will permit their complete removal without excessive losses of pulp or expenditures of time, power, and water that are prohibitive. In fact a point seems to be reached beyond which it is impossible to remove the remaining traces of ink. The problem is entirely different from the removal of soluble impurities such as cooking liquor or bleach residue and very successful methods for handling the latter impurities will not answer the purpose. With Bentonite, however, we have a substance that will pass through ordinary filters and with its enormous surface, on account the extreme fineness of its particles, will carry the carbon black along with it. Even when washing with bentonite, however, it is better to avoid the formation of a sheet of felted fibers against the wire surface which will form a good filtering medium and drum washers are consequently better than decker washers.

### Laboratory Tests

In making the comparative tests referred to the semi-commercial apparatus available at Madison were used. The methods followed are given below:

#### Charging the Washer

The 25 lb. Hollander beater was half filled with water and heated by blowing in steam to a temperature of between 50 and 75° C. while from 1.5 to 2.5 lbs. of soda ash were added and allowed to dissolve. From 2 to 3¼ lbs. of ground bentonite were slowly added and beaten into colloidal solution by the action of the beater roll. If the foaming was excessive about ¼ pint of kerosine was either added to the beater or poured over the old papers, weighed out for the charge which amounted to from 25 to 37 lbs. of printed newspapers or periodicals. The paper was then added to the beater with the beater roll raised from the bed plate and water was slowly added until the beater was completely charged. Steam was then blown in to raise the temperature to between 50 and 75° C. and the papers macerated from 10 to 20 minutes.

#### Washing the Stock

The drum washer was then lowered and washing commenced.

\*Read at the convention of the American Pulp and Paper Mill Superintendents' Association, Kalamazoo, June 1-3, 1922.

When it had proceeded far enough to materially reduce the apparent quantity of ink present ten per cent of sulphite pulp, based on the weight of the old papers charged, were added to give the desired strength and facilitate the completion of the washing by rendering the stock more open. The speed of washing seemed to be directly proportional to the rate of the removal of water by the washer and anything that increased it increased the rate of washing correspondingly. When the washing had proceeded to the point where the waste water became free from ink, about 100cc. sulphuric acid were added to neutralize any alkali remaining and brightening the color of the stock. The washing was continued about ten minutes when the washer was raised and sizing, loading, and coloring materials were added to give the type of paper desired. In the case of news the stock was simply tinted and alum added. With the book paper runs, 15 per cent of clay and 1.5 per cent of rosin size were added. The furnish was run over the Fourdrinier paper machine into machine finished paper of the same type as that from which it was made.

**Yield and Water Measurements**

The laboratory runs seemed to indicate that either used news, book, or bond paper could be satisfactorily washed with the help of bentonite and used in making the same type of paper. Yield determinations on several runs indicated an average loss of from 9 to 10 per cent. The average time for washing the news runs was one hour. Measurements on the water used indicated a rate of 3.5 gallons per minute during the washing period. The details of the several runs are given in Table 1.

pipes and known in the mill as cookers. Steam connections were also provided in the sides for the admission of steam to heat the contents of the beater to boiling and hold them at that point. The bars on the beater rolls were spaced about five inches apart and since there were no bed plates the bars merely served as paddles to circulate the stock and gently macerate it. The cookers emptied into a concrete chest on the first floor from which the stock was pumped to a decker beside the cookers. The liquor from the decker was returned to the cookers and the stock was washed from the decker, with water into a second concrete chest. By use of the decker approximately half of the soda ash and one-third of the bentonite were returned to the cooker making possible a corresponding reduction in the amounts of the two needed.

**Washing**

From the second concrete chest the stock was pumped to any one of the four 2,000 lbs. Jones washers equipped with four drum washers each. The drum washers on one of these, washer No. 4, were covered with a special nickel alloy wire, 80 mesh, through which it was possible to remove 146 gallons of water per minute while with each set of four drum washers on the other washing engines which were covered with a corduroy type of copper wire only 60 gallons per minute could be removed. The rate of washing was proportional to the rate of the removal of water and in the case of washer No. 4 it was found possible to thoroughly wash the stock in one hour, while the other three washers took from two and one-half to three hours. After washing dilute sulphuric acid was added in the proportion of 13½ lbs. per ton of old papers.

TABLE 1

Run No.	Old Papers Used	Quality of paper	Paper charged air dry, wt., pounds	Chemicals		Washing time			Bleaching time			Color of finished sheet		
				Soda Ash, lbs.	Kind Clay used	Quantity Pounds	Sulphuric acid cubic centimeters	Temperature during curing °C	Charge and charging—Min.	Washing—Min.	Bleach used—lbs.		Bleaching—Min.	Washing—Min.
1	Wisconsin State Journal	News	25	2.00	Bentonite	2.00	100	55	10	65	..	..	..	Fair
2	Wisconsin State Journal	News	25	1.25	Bentonite	2.00	100	57	15	67	..	..	..	Fair
3	Wisconsin State Journal	News	25	1.65	Bentonite	2.13	100	55	15	75	..	..	..	Bright as original
4	Wisconsin State Journal	News	25	2.50	English	2.50	100	55	20	75	..	..	..	Dull
5	Wisconsin State Journal	News	25	2.50	Fullers earth	2.50	100	55	15	60	..	..	..	Dull
6	Ladies' Home Journal	Book	25	2.50	Bentonite	2.50	100	61	15	60	0.4	5	40	Bright as original
7	Ladies' Home Journal	Book	25	2.50	Bentonite	3.75	100	69	25	90	0.3	5	35	Bright as original
8	Miscellaneous Weeklies	Book	32	2.50	Bentonite	3.75	100	65	20	70	0.5	30	30	Bright as original
9	Chicago Tribune	News	25	1.62	Bentonite	2.12	75	55	12	60	..	..	..	Bright as original
10	Ladies' Home Journal, Saturday Evening Post, Pictorial Review, Cosmopolitan, American and Hearst	Book	25	2.50	Bentonite	3.75	75	65	15	90	0.3	5	25	Bright as original
11	London Times and Manchester Guardian	News	25	1.62	Bentonite	2.12	70	57	10	55	..	..	..	Bright as original
12	Wisconsin State Journal	News	30	2.00	..	..	76	55	12	60	..	..	..	Dull
13	Wisconsin State Journal	News	30	1.45	Wilkinson*	2.55	75	62	12	60	..	..	..	Same as original
14	Wisconsin State Journal	News	30	1.45	Wilkinson*	2.55	75	62	12	60	..	..	..	Same as original
15	Wisconsin State Journal	News	30	2.00	Borax	2.00	70	62	12	60	..	..	..	Dull
16	Wisconsin State Journal	News	30	2.00	Ivory Soap	2.00	70	62	12	60	..	..	..	Dull
17	Technical Notes	Writing	30	1.45	Bentonite	2.55	70	65	12	60	..	..	..	Same as original

\*A very colloidal bentonite.

**Mill Trials**

In view of the success obtained on a laboratory scale, in using bentonite for reclaiming used printed paper. O. L. Weber, General Manager of the Watab Paper Company, Sartell, was interested in trying the process in his mill and runs were made in June, 1921.

**Arrangement of Conversion Plant**

The conversion plant at the Watab Paper Company was located in a three-story concrete and brick building of excellent construction in which there was no perceptible vibration. On the top floor was the sorting department which was only used in these runs to remove straw board and metal and fill trucks with loads of from 600 to 1,300 lbs. each of old news.

**Cooking**

At one end of the second floor were two cast iron beaters of 3,000 pounds rated capacity provided with sheet iron covers and vent

A considerable brightening of the color was effected and the stock was dumped into a third stuff chest.

**Screening**

The stock was screened on flat diaphragm screens and run over a thickener or decker into a fourth stuff chest from where it was run through a Jordan and over wet machines into laps of pulp which were weighed and tested for moisture in order to determine the yield. The proportion of chemical and bentonite used in the tests were as follows:

Series No.	MATERIAL CHANGED				Time in cooker, min.	Temperature °C
	Cook No.	Paper	Soda Ash	Bentonite		
1	1 to 10	3,000	150	250	30	70
2	11	2,500	100	250	30	70
2	12	2,500	50*	125	30	70

\*Black liquor returned to cooker from decker in running preceding cooks. Decker was not used with all other cooks.

The first series of runs consisting of 10 cookers of old newspaper

stock thirty thousand pounds of papers were used from which the following lots of pulp were obtained.

68,765 lbs. testing 28.5 per cent bone dry.....	19,598 lbs.
14,025 lbs. testing 29.5 per cent bone dry.....	4,137 "
1,665 lbs. broken laps testing 29.5 per cent bone dry .....	491 "

Bone dry weight of pulp .....24,226 lbs.

Bone dry weight of paper used = 30,000 × 90 = 27,000 lbs. Yield 90 per cent.

Tests to determine the volumes of wash water and the fiber, clay and ink in the same were made on runs 14 and 15 in washers 4 and 3 respectively, with the following results:

	Washer No. 4	Washer No. 3
Volume of washer.....	4,200 gals.	4,200 gals.
Time to fill with valve turned to washing position .....	28 min. 45 sec.	70 mins.
Rate of flow per min.....	145 gals.	60 gals.
Total time washing.....	60 min.	2 hrs. 44 min.
Total volume of water.....	8,760 gals.	9,840 gals.
Fibre lost .....	37.9 lbs.	46.9 lbs.
Fibre lost .....	2.53 lbs.	3.13%
Ignited residue .....	49.3 lbs.	58.3 lbs.
Clay in water.....	58.0 lbs.	69.5 lbs.
Ink removed.....	3.6 lbs.	5.2 lbs.

From the results of the above tests it appears that the loss of fiber in the washers is only between 2½ and 3½ per cent. Since a yield of only 90 per cent was obtained the remainder of the 10 per cent lost must have occurred at the wet machines or in the cooker. From experience with the solubility of groundwood papers in water and dilute alkali a loss of between 1½ and 3 per cent would be expected in the cookers and the wet machines seems to be responsible for about half of the total loss. By using the stock directly from the washers much of this would be avoided and a considerable saving effected.

**Continuous Operation at the Watab Paper Co.**

As a result of the test in July arrangements were made for continuous operation on old news. The necessary supply of old newspapers, bentonite, and soda ash were accumulated and in November, 1921, operations were commenced. It was at first attempted to obtain an output of forty tons of de-inked pulp per day. It was found, however, that the color of the stock was too dull for the grades of paper being made and the output was reduced to thirty tons per day to give more time in the washers. At this rate it was found necessary to give close attention to the washing and, with the desire to keep the washers in rotation, stock insufficiently washed would occasionally be dropped. After running several months it became evident that the power consumption needed was more than it should be for the output and the quality of the washing too uncertain. A new type of washer seemed necessary that would wash the stock without the necessity of beating the stock more than was necessary for defibering the paper.

**Sloping Screen Washer**

In order to obtain the maximum washing with the least handling of the stock a sloping frame ten feet wide and twenty-four feet long was constructed with a slope of approximately one foot in five. Over this was stretched a discarded fourdrinier wire and under the frame was built a wooden tank divided by a partition midway between the ends. Above the screen was hung a grid of showers spaced thirty-six inches apart and supplied with water from a main along one side which was closed by a blind flange halfway from the ends. Fresh water was supplied to the lower showers and caught in the half of the tank below after passing through the stock. A centrifugal pump pumped the water from the tank to the upper showers. After passing through the stock on the upper portion of the screen it was caught in the other half of the tank below from where it was pumped to the Jones washers. The showers were directed at the stock at an angle of about 30° to the

surface of the wire and the grid was given a reciprocating motion of thirty-six inches so that the stock was moved down the screen by the force of the showers and at the same time thoroughly washed. On the return stroke the showers merely added water and violently turned the stock over and over. The old papers were passed from the cookers to the Jones washers as usual and from the stuff chest below the washers pumped to a flow box at the top of the sloping screen washer which distributed it over its entire width. The fresh water from the lower showers washed the stock already almost completely washed and was then passed through the upper showers to wash the stock as it came from the Jones washers. After being used twice it was still only slightly discolored and was used a third time in the Jones washers.\* The results obtained were surprising and it was evident that the stock was completely de-inked. It must be borne in mind, however, that the papers used were made from furnishes that were colored blue white as is customary and since the dye is not removed the washed stock was blue white and not light yellow like groundwood. For this reason proper adjustments should be made in using it and less dye used than is customary when using groundwood. The effectiveness of the washing is shown by the clay present in the washed pulp and the following ash tests will give a very good illustration.

	Ash
Stock after washing two hours in 2,000 pound beater with four drum washers .....	3.75%
Stock after washing one hour in 2,000 pound beater with four drum washers and passage over sloping screen washer .....	1.69%
Ash in paper after washing one hour in laboratory beater under similar condition using 10% of various clays and bentonite .....	Ash
Bentonite .....	3.29%
English China Clay .....	3.52%
Fullers Earth .....	4.09%

The removal of ink with bentonite is furthermore much faster than with either china clay or fullers earth as is shown by the following Ives tint photometer readings on paper made from the three runs referred to.

Similar readings on fresh groundwood, and the two stocks obtained at the Watab Paper Company of which the ashes are given above follow:

	White
Groundwood .....	70.5%
Stock washed 2 hours with drum washer.....	60.7%
Stock washed one hour with drum washers and passed over sloping screen washer .....	66.5%

In tinting groundwood furnishes to give the customary white demanded by the trade a certain darkening of the color occurs as is shown by the following tests on a number of typical commercial newspapers made from fresh ground and sulphite.

	White	White	
No. 1 .....	58%	No. 5 .....	55%
" 2 .....	53%	" 6 .....	63%
" 3 .....	65%	" 7 .....	55%
" 4 .....	60%	" 8 .....	57%

The test of 60½% white on paper run at the mill using 80% de-inked stock and 20% sulphite compares very favorably and indicates that for all practical purposes a satisfactory news sheet can be obtained.

During the trial at the Watab Paper Company since last November, something over fifteen hundred tons of old newspaper stock has been de-inked using bentonite as the carrying agent. Slight

\*A washer following the general lines of the washer described has been perfected and can be furnished by the Paper De-Inking Company.



changes were made from time to time and the proportion of chemicals finally used were as follows:

Old newspaper stock .....	2,500 lbs.
Bentonite .....	200 "
Soda ash .....	40 "
Hydrated Lime .....	25 "

With the sloping screen washer it was found possible to omit the use of sulphuric acid since the last traces of alkali were removed and with its elimination the yellowing caused by the alkali disappeared. With slight modifications in the washer the capacity of forty tons of de-inked stock is possible and changes in the arrangement of the plant with an increase in the width of the washer of five feet would make possible an output of fifty tons daily.

#### Discussion

The possibilities of a process for the recovery of old news-

paper stock such as had been described are apparent to any one familiar with the paper industry. When the price paid for old paper stimulated collection it is reported that about twenty-five thousand tons per month were collected in Chicago of which forty per cent was news. During the same period Cleveland is reported to have handled approximately three hundred and fifty tons per day of which one hundred and fifty tons was news. In our large metropolitan centers probably twenty-five hundred tons per day were collected which would furnish a very considerable portion of our daily consumption of approximately seven thousand tons of news print. The source is furthermore at the place of consumption and the saving in freight is a very important item. The color requirements of the publishers at the present time are very severe and any process that does not thoroughly remove the ink cannot be successful. While considerable difficulty was encountered in meeting these requirements in the trials herein described the results obtained as the process has been finally worked out seem to justify our belief that they can be met.

## THE "BARYTA RESISTANCE" OF WOOD PULPS\*

CARL G. SCHWALBE AND HERMANN WENZL

The determination of  $\alpha$ -cellulose gives information regarding the content of chemically-resistant cellulose in pulp, a value which is of importance in the manufacture of artificial silk, explosives, etc. The action of the strong sodium hydroxide (17.5 per cent) which is used in this determination dissolves out a variety of substances from the pulp; these are the decomposition products of cellulose, the hydro- and oxycelluloses, the cellulose dextrans, and the pentosans, which ordinarily comprise the greater portion of the so-called wood gum. That cellulose itself is not entirely resistant to the action of dilute alkalis is seen in the unavoidable removal of the strong alkali by washing with water.

The determination of  $\alpha$ -cellulose by this method has other sources of errors. According to Opfermann (*Die chemische Untersuchung pflanzlicher Rohstoffe und der daraus abgeschiedenen Zellstoffe*) the method and manner of kneading the pulp with the strong alkali is important. Further, the degree of fineness of the sample influences the result. Further factors are the temperature of the reaction and the manner of drying. Waentig (*Zellstoff u. Papier*, 2, 12-17 (1922)) points out the desirability of agreeing upon the above points, and specially mentions the ratio of alkali to pulp, advocating the ratio 10:1 instead of the previously used 5:1, and also that, following the action of the strong alkali at 18°, the product should be diluted with five volumes of water and immediately filtered.

#### Attempt to Discover New Method

In view of the many and in part fundamental errors in the  $\alpha$ -cellulose determination, Schwalbe and Becker (*J. prakt. Chem.* 100, 19-47 (1920)) attempted to discover a new method of estimating the amount of chemically-resistant cellulose in pulps. They found that cellulose showed a very marked stability towards the alkaline earths, especially towards lime, while the decomposition products of cellulose, the cellulose dextrans, hydro- and oxycelluloses, etc., were attacked and dissolved under these conditions. Using this observation, they investigated the degree of stability of several pulps towards boiling baryta solution, using this as a measure of the content of chemically-resistant cellulose and terming the value the "baryta resistance" of the pulps.

Although several determinations have been reported in various places, it was felt that a careful investigation should be made of the relation between  $\alpha$ -cellulose and the "baryta resistance" values, with special consideration of the effect of various conditions upon the incrusting residues in the pulp. Four pulps have been examined

with this in mind: an "Edel" sulphite pulp, an easily bleaching, normal Ritter-Kellner pulp, an easy bleaching, normal Mitscherlich pulp and an unbleached soda pulp. The following factors were studied: Influence of temperature, time, and pulp density upon the value of the "baryta resistance" numbers, and also upon the reduction value, as well as the action of baryta treatment upon the incrusting materials, such as pentosans and lignin.

Since the sodium hydroxide is used in the cold in the determination of  $\alpha$ -cellulose, and it is possible that the action of boiling baryta solution might be too energetic, the first study was that of the action of cold baryta solutions upon pulps.

Two grams of pulp and a definite amount of cold saturated barium hydroxide solution (at 20° this corresponds to 3.48 per cent BaO) were shaken in a stoppered flask for periods varying from 4 to 8 hours. A part of the samples were allowed to stand 14 hours before dilution, others were diluted at once with water, in the ratio of 1:2 and filtered on a Gooch crucible, previously ignited and weighed. The pulp was quantitatively washed onto the crucible, and then washed with hot water until the filtrate gave no test for barium upon the addition of sulphuric acid (no precipitate of barium sulphate).

After removing the suction, the crucible is filled with boiling 10 per cent acetic acid, the contents carefully stirred, allowed to stand and then sucked dry, the acetic acid then being washed out with hot water. The crucible was then dried four hours at 100-105° C and weighed. Correction was made for ash content by burning the pulp in an electric crucible oven, and weighing. This correction usually varied from 0.003 to 0.0036 gram.

The values found by this method varied from 94.4 to 97.5 per cent, while the  $\alpha$ -cellulose determination gave 82.5 per cent and the use of boiling alkali, 81.7 per cent. It is therefore evident that cold alkali cannot be used as an analytical method.

#### Method of Determination Employed

There then arose the question as to whether the earlier method as proposed was the best and most satisfactory, or whether better results could be obtained by changing the pulp density or time of heating or both. Investigation showed that the action of the baryta is practically ended after one hour's heating and that approximately the same results were secured with a density of 1.5 per cent as with 3 per cent. Since further work showed that the decrease in the pentosan content was least with a pulp density of 1.5 per cent and time of heating one hour, and, also, since the heating of a fiber mass of 1.5 per cent pulp density proceeds easier

\*Translated and abstracted by C. J. West from *Zellstoff u. Papier* 2, no. 4, 81-84 (April, 1922).



and smoother than that of a density of 3 per cent, it was decided to employ a density of 1.5 per cent and one hour's heating. The following method of determination was, therefore, employed:

Three grams of air-dried pulp are treated with 200 cc. of cold, saturated barium hydroxide solution and heated to boiling under a reflux condenser for exactly one hour. The hot mixture is then filtered on a Gooch crucible—the use of a filter mat is not necessary—and thoroughly washed with hot water. It is then washed with cold one per cent hydrochloric acid with careful stirring and periods of standing, until the filtrate is free of barium. The hydrochloric acid is then removed with boiling water, the crucible and contents dried four hours at 105° C weighed, and this weight corrected for ash content.

Schwalbe and Becker have reported that the alkaline earths act upon pentosans, though most of their results are based upon experiments made under pressure. It is provable that the degree of the reaction of barium hydroxide upon the pentosan content would depend upon the time of the action and the pulp density. Experiments were therefore made with pulp densities of 1.5 and 3 per cent and one and four hour cooking periods. After washing the product, the remaining cellulose content was determined and calculated to water- and ash-free material, from which one may determine the pentosan content.

**Results of the Experiments**

Results of these experiments indicate that the decrease in the pentosan content by cooking with barium hydroxide is relatively small, both in the one and four hour periods. Considering the loss in weight during the baryta cooking, it amounted only to about a third of the original value. In the case of a soda pulp and an alkali treated "Edel" pulp, the maximum decrease occurred with a pulp density of 3 per cent and a cooking time of one hour, while with the ordinary Ritter-Kellner and Mitscherlich sulphite pulps, the maximum was with a density of 1.5 per cent and a four hour cooking period. That this loss is comparatively small follows from a comparison with the loss in weight which occurs during the  $\alpha$ -cellulose determination, losses being obtained up to two-thirds of the original value.

In a comparison of the  $\alpha$ -cellulose and the "baryta resistance" methods, it is also necessary to compare the action of sodium hydroxide and barium hydroxide upon the amount of lignin present in the pulp. The action of 17.5 per cent sodium hydroxide upon the lignin content of a pulp does not appear to have been investigated. Lignin was determined according to the method of Krull (*Versuche über Versuckerung der Cellulose*), that is, the treatment of the pulp sample, after moistening with water, with gaseous hydrochloric acid. The values found are as follows:

	Lignin per cent
Ritter-Kellner original .....	2.70
barium .....	2.60
sodium .....	5.35
Mitscherlich original .....	5.30
barium .....	3.65
sodium .....	5.25

**What the Results Indicate**

These results indicate that the solution of wood-gum, etc., from the Ritter-Kellner pulp by means of strong sodium hydroxide produces a considerable increase in the lignin content, which is the more remarkable when one considers the loss in weight during the  $\alpha$ -cellulose determination. In the treatment with baryta, on the other hand, the values of lignin for a Ritter-Kellner pulp agree with those for the raw material, while those for the Mitscherlich pulp are considerably lower. In the latter case the values obtained after treatment with sodium hydroxide are very similar to those before treatment. It is suggested that the difference in the behavior

of the Ritter-Kellner and the Mitscherlich pulp may be due to peculiarities of the two pulps and may be characteristic. The results available at present are too few to draw a definite conclusion.

Schwalbe and Becker have stated that upon boiling with lime, pulps were obtained whose reduction capacity had nearly disappeared. Since in the determination of the "baryta resistance" the pulps are heated with alkaline earths, it was of interest to determine to what degree the reduction values were changed. The results indicate that with soda pulp, having an original value of 0.29, the change was very small.

Pulp	Original	Reduction Capacity After Treatment	Kind of Treatment
Edel .....	2.32	1.53	1 hr. 3 % density
Ritter-Kellner .....	2.55	0.72	4 hr. 1.5% density
Mitscherlich .....	2.33	1.58	4 hr. 1.5% density
Soda .....	0.29	0.23	1 hr. 3 % density

The table shows that, in the case of the other pulps investigated, the changes were rather marked. While the longer time of heating may be influential in the degree of change in the case of the Ritter-Kellner and Mitscherlich pulps, it is to be observed that the changes in the Mitscherlich and Edel pulps are about the same, though the time of heating was only one hour for the latter. One might conclude from this that the reducing materials present in the Ritter-Kellner pulp is much more sensitive to the action of baryta than those present in the Mitscherlich pulp. These results do not agree exactly with those reported earlier by Schwalbe and Becker, but in these early experiments the digestion was mostly made with lime under pressure. The time of reaction of the lime was also considerably longer. A simple boiling with alkaline earths for 1 or 4 hours is thus not sufficient to completely remove the reducing substances, among which there are to be found easily and difficultly destructible substances; only the former are quickly destroyed.

**Comparison of Existing Data**

The question now arises whether, based on a consideration of these results, the determination of the "baryta resistance" of a pulp has any advantage or value. In order to compare the existing data, all the determinations previously reported together with the values determined during the present work have been compiled in the following table.

GROUP I. SODA PULPS AND PULPS WITH ALKALINE AFTER-TREATMENT					
No.	Kind of Pulp	Cellulose	Barium-Cellulose	Pentosan	Copper Number
1	Soda Pulp I .....	88.36	96.0	10.56	1.89
2	Soda Pulp II .....	88.64	98.0	8.80	0.31
3	Nitration pulp .....	87.31	91.83	2.95	1.00
4	"Mitscherlich" .....	93.95	94.60	3.83	0.14
4	8 hours boiling with lime .....				
5	Same .....	92.81	97.7	5.05	0.09
6	Unbleached Soda .....	83.65	90.6	10.48	0.29
GROUP II. SULPHITE PULPS					
7	Pergamyn .....	87.85	83.4	6.96	1.84
8	Mitscherlich, bleaching .....	86.7	84.3	5.25	2.33
9	Mitscherlich, easy bleaching .....	90.52	84.4	5.37	1.63
10	Ritter-Kellner, unbleached .....	86.98	85.75	6.70	1.14
11	Ritter-Kellner, bleaching .....	87.6	84.4	5.63	2.55
12	Ritter-Kellner, normal, bichd. .....	87.91	80.78	6.37	2.14
13	Ritter-Kellner, bleached, soft .....	86.56	79.8	3.59	2.42
14	Ritter-Kellner, bleached .....	86.76	84.21	4.49	2.52
15	Ritter-Kellner, over-bleached .....	79.20	75.42	5.17	3.85
16	Cotton .....	98.85	97.80	1.28	0.28
GROUP III. "EDEL" PULPS					
17	Norwegian .....	89.20	89.90	5.60	0.51
18	Norwegian .....	90.32	90.01	5.64	0.30
19	Norwegian .....	85.7	83.6	5.33	2.32
20	Edel, ¼ bleached .....	85.29	87.06	6.06	2.07
21	Edel .....	86.8	80.7	4.28	3.00
22	Edel sulphite .....	90.56	87.66	3.24	1.42
23	Pulp for artificial silk .....	84.92	83.95	5.87	1.85

**A Study of the Tables**

When one compares, in the above table, the values for  $\alpha$ -cellulose and the "baryta resistance" numbers, it at once is evident that all pulps which were prepared by an alkaline cooking process or received an after-treatment with alkali (group I) showed numbers

for "baryta resistance" which were higher than the values for  $\alpha$ -cellulose. On the other hand, those pulps prepared by the acid sulphite process (group II) showed lower "baryta resistance" numbers. Between these two groups there is a third group (group III), containing the "Edel" pulps, in which the values for  $\alpha$ -cellulose and "baryta resistance" are very nearly alike. One gains an impression, from a study of the figures, that the Norwegian "Edel" sulphite pulps receive an alkaline after-treatment, because this is followed by an increase in the "baryta resistance" (compare Nos. 4 and 5). These pulps (4 and 5) were originally sulphite pulps which had been purified by cooking with lime.

The values under group II would indicate that the sulphite pulps contain more hydrolyzed material than is shown by the  $\alpha$ -cellulose numbers. Therefore, in the case of the sulphite pulps, the "baryta resistance" number indicates that amount of cellulose which has suffered no hydrolysis. On the other hand, in the case of the soda pulps, the "baryta resistance" numbers are much higher than the values for  $\alpha$ -cellulose. This difference may be due to the pentosans remaining in the pulp after the boiling with baryta. As has been shown above, the pentosans are destroyed to a much greater degree in the determination of  $\alpha$ -cellulose than in boiling with barium hydroxide.

It has been mentioned above that the barium hydroxide treatment only incompletely removes the reducing substances in the pulp. The barium resistance number is not a measure of the reducing substances in pulps and it is therefore not possible to consider this determination a substitute for the troublesome copper number determination. Many authors have attempted to replace this determination by a simpler one, and to destroy the reducing constituents by boiling with alkalis and determine either the remaining residue or the alkali consumption. It has been seen that there is no parallelism between the residue of the baryta treatment and the copper number, even if, for example, an over-bleached pulp with high copper number gives a low "baryta resistance" and a cotton with a low copper number gives a correspondingly high "baryta resistance." Results from the above table show that samples with nearly the same copper number (as 13 and 11) have very different "baryta resistance" numbers.

The difference in the copper number may be due, in part at least to other impurities than reducing decomposition products of cellulose. Thus it is very noticeable that in the soda pulps some samples have a very low copper number while others have a very high value. When it is remembered that sodium hydroxide destroys the reducing hydro and oxycelluloses, it would be supposed that all soda pulps would have very small copper numbers. That soda pulps occur with high copper numbers is due, according to Willi Schacht, to the degree of washing of the pulp, that is to the presence of black liquor in the cellulose fibers.

#### Supplements Cellulose Determination

The above discussion shows that the determination of the "baryta resistance" of a pulp gives information about the previous history of the sample. It cannot, in our opinion, replace the  $\alpha$ -cellulose determination, but can supplement it, because it avoids certain sources of errors in the  $\alpha$ -cellulose determination. In place of the variable room temperature, the boiling temperature is used. The differences which occur because of the differences in kneading the pulp with sodium hydroxide are avoided and, because of the slight action of the cold alkaline earth hydroxides upon the pulp, there is no danger accompanying the washing out of the hydroxide after the boiling, that is, of dissolving some of the cellulose or precipitating some of the reaction products upon dilution. The in-crusting substances are changed during the boiling period, since they are not precipitated upon dilution. It is also easier to obtain comparable results in the determination of the "baryta resistance" than in the determination of  $\alpha$ -cellulose. It is worth while to use

both methods for determining the chemically resistant cellulose, in order to obtain a sufficiently accurate picture of the different pulps.

#### Recreation at Forest Products' Lab.

The following printed under the caption of "We are not patting ourselves on the back, but—" is from the Bulletin of the Forest Products' Laboratory of Madison, Wis., which indicates that the staff of that institution which is becoming so increasingly helpful to the paper industry knows how to play as well as work: What other Madison morning newspaper has a pictorial section?



"HANDS CLASPED ACROSS THE BIG DRINK"

Girls, we are doing it all for you, because you didn't come to our festivities yesterday. The title of our news photo today is "Hands Clapsed Across the Big Drink." The two boys smiling at you from the foreground are Capt. Wirka and Capt. Suhm. Behind them are Beaumont, who waters players; Winslow, who pitched the first ball; and Fox, who umpired unscathed by pop bottles. Suhm and Wirka, when they came to bat, were presented with an armful of cut wildflowers by an admirer of theirs. My dear, you should have seen them! Lewis and Denicke, looking for all the world like genial bartenders, handed out bottles of ice-cold pop. It was a great day for the fans.

The fame was merely incidental. The Pen-jockeys fell in with the carnival spirit and held a batting bee. They bounced the ball all over the lot and ran around the bases like horses in a show ring. An editorial boost for Dain! He smote the ball for four safe hits and conducted himself like a real shortstop.

#### Copes System of Feed Water Control

"Regulating boiler feed water" is the title of a booklet which has just been published by the Northern Equipment Company, Erie, Pa. The subject has been treated in an entirely new way, the object being to cover the subject of boiler feed water regulation completely and yet very briefly. To accomplish this purpose, free use has been made of a graphical method of presentation: charts showing the effect of feed water regulation on water input, steam output, feed water temperature, etc., also other charts, photographs, etc. There are only twenty pages and the booklet can be read in less than fifteen minutes.

## A DICTIONARY OF PAPER TERMS

(Continued from last week)

- Grocery.** A general term for all kinds of papers used in the grocery and provision trades.
- Groundwood.** Pulp produced by grinding wood by means of grindstones in the presence of water. Synonym of mechanical pulp.
- Guard Board.** An inclined board placed on the top couch roll. It strokes the felt pile of the jacket preserving a smooth surface.
- Guide Roll.** An adjustable roll forming part of the carrying system for fourdriner machine wire, wet felt or dryer felt. Its function is to maintain a correct travel direction.
- Gum.** A sticky glue-like substance, usually soluble in water: such as gum arabic or dextrine.
- Gum Acacia—Gum Arabic.** Gum exuded from several plants of the acacia family, usually in transparent, pale yellow tearshaped pieces, also as a powder.
- Gummed Paper.** Paper having one side coated with gum to be used for labels, etc.
- Gypsum.** The natural mineral sulphate of lime. Plaster of Paris is made from gypsum by heating it to drive out most of its water of crystallization. The "set" of plaster is due to the reabsorption of water.
- H**
- Half Imperial.** See sizes of paper.
- Half Stuff.** Partially beaten rag pulp. Wood pulp not treated for sizing, etc.
- Hand.** Looking towards the wet end from the reels if the drive is on the right the machine is right handed and conversely left handed.  
See also sizes of paper.
- Hand-made.** Paper made on hand molds in sheets having a rough or deckle edge on four sides. Applied also to machine made paper simulating hand made in having two or more deckle edges. See Deckle.
- Hanging.** Wall Papers.
- Hard Water.** Water containing carbonates or sulphates of lime and magnesia.
- Harper.** A form of fourdriner machine in which the wire travels away from the presses, the flow box being placed between the breast-roll and the first press, and the wet sheet carried on the felt back over the wire to the first press.
- Head.** (1) The vertical distance, usually in feet, through which water falls effectively on the wheels in water power plants. (2) On a fourdriner paper machine the depth of stock in the pond.
- Head-Box.** See Flow Box.
- Heavy Spar.** See Barium sulphate.
- Hemlock.** *Tsuga canadensis* or *theterophylla*, a coniferous tree. Not suitable for mechanical pulp, but yielding a chemical pulp which can be used for the manufacture of all grades of paper.
- Hemp.** See *Cannabis sativa*.
- Hemp Paper.** Papers made from hemp, hemp refuse, old rope, etc. Used for wrappers, cable, and insulating purposes, and sometimes called hemp browns.
- Hitch Roll.** Roll from which felts reverse their running direction. Roll arranged to adjust the tension of the felt.
- Hollander.** An early design of a beating engine. The name, becoming obsolete, is due to the fact that the beater as now constructed was, in general principles, introduced about 1800 from Holland. Hollander type beater as opposed to other designs of beating engines such as Umpherston, Taylor, Horne, Rabus, etc.
- Hopper.** A funnel shaped box, used in filling digesters, rag boilers, stokers, etc., and to provide temporary storage.
- Horse Power.** The unit of work in engineering; equals 33,000 foot pounds per minute.
- Hosiery.** Papers used in the hosiery trade.
- Housing.** Covering. Such as that placed over the roll of a beater.
- Humidity.** The condition of the air with reference to moisture content. When air contains all the water it can carry as invisible gas a very slight reduction in temperature will cause condensation, or mist, this point is termed the dew point. Relative humidity is the percentage of the total water carrying power or ratio of moisture actually present to the amount necessary to cause saturation.
- Hydrated.** Chemically combined with water, e. g., slaked lime is hydrated. Well beaten stock is said to be hydrated.
- Hydraulic.** Pertaining to liquids in motion or subjected to pressure—usually refers to machinery operated by falling water, or by the transmission of pressure through water.
- Hydrocarbons.** Compounds of hydrogen and carbon only. The petroleum compounds are hydrocarbons. Cellulose is not because it contains oxygen in addition to carbon and hydrogen.
- Hydrocellulose.** A friable powder, obtained by exposing cellulose, previously dipped in a dilute mineral acid, to air. Paper dipped in weak sulphuric acid or in moderately strong bleach liquor, and then warmed, is quickly destroyed because of this change in constitution.
- Hydrochloric Acid—HCl.** Occasionally used to hasten the process of bleaching paper pulp. The compound is a gas soluble in water. The strongest form in common use is called "concentrated" and is an aqueous solution containing about 37 per cent HCl, Sp. Gr. 1.19.  
A common name is muriatic acid, and it is sometimes called spirits of salt, being obtained from common salt by the action of sulphuric acid.
- Hydrogen dioxide, hydrogen peroxide.** A compound of hydrogen and oxygen  $H_2O_2$ , which has a strong bleaching action by reason of its unstable character which tends to a breaking up of its molecule and liberation of nascent oxygen  $2H_2O_2 = 2H_2O + O_2$ .
- Hydrolysis.** The breaking down of organic compounds by the entry of the molecule of water. This is one of the principal reactions in producing chemical pulp from wood.
- Hydrometer.** An instrument for measuring the specific gravity of liquids. Hydrometers usually consist of a bulb elongated to save space, surmounted by a stem on which are the graduations; the whole weighted in such a way as to float vertically. The instrument sinks further in light liquids than in dense ones, and the scales are based on this fact. See Beaumé.
- Hygrometer.** An instrument for measuring the amount of moisture in the air. One form consists of two thermometers, the bulb of one being covered with wet silk and the other dry. The air circulating about the wet bulb causes evaporation,



which lowers the temperature. The difference between the wet and dry bulb temperatures is a measure of the saturation of the air (see humidity). Air approaching saturation will cause little evaporation at the wet bulb so that the difference in temperatures will be small.

**Hygroscopic.** Having the property of taking moisture from the air, deliquescent.

**Hypochlorite of Lime.** Calcium hypochlorite. See Bleaching powder.

**Hyposulphite of Soda or Hypo—Antichlor.** Properly thio-sulphate of soda. A white crystallized or granular substance used to correct excess of bleach.

## I

**Idler.** A pulley which directs or carries a belt or by pressure or tension puts a slack belt into operation. It does not transmit power.

**I. H. P.** Indicated horse power, the result obtained by calculation from an indicator card.

**Imitation Art.** Paper heavily loaded with clay and run through damping calenders.

**Imitation Parchment.** See Parchment.

**Imperial.** See sizes of paper.

**Impression Papers.** See duplicating papers.

**Indanthrene Blue.** A blue dye of exceptional fastness to light.

**Index Boards.** Pulp boards made of strong stock, even, hard sized, well calendered giving a good writing surface.

**Indian Red.** A form of finely divided, red ochre used in coloring wrappers and boards.

**India Proof Paper.** Thin paper made from the inner fibers of the bamboo stem. Extremely soft and absorbent, it is, therefore, eminently suitable for taking full bodied impressions in plate printing.

**Indicator.** (1) An instrument that may be attached to the cylinder of an engine or any reciprocating machine, having a card upon which a diagram is inscribed indicating abnormalities in any part of the stroke.

(2) In chemical tests a substance indicating the end of a reaction.

**Induction Motor.** The usual form of electric motor in which a rotating armature induces alternate positive and negative currents by cutting the magnetic line.

**Ingrain.** A name applied to mottled papers.

**Insides.** Sheets in packages exclusive of four or five outside sheets. In newspapers the ready printed section furnished country papers, "patent insides."

**Insulation.** The separation of conducting materials by non-conducting materials. Dead (not moving) air is a very good insulator, hence many insulators are based on maintaining air space without circulation.

**Insulating Paper.** See Cable.

**Interlocking Drive.** An arrangement recently applied whereby motors driving the sections of a paper machine are synchronized for maintaining uniform speed.

**Iodine.** An element of the halogen group. Atomic weight 126.92. A solution, decinormal strength, is used to determine sulphurous acid in sulphite pulp mills.

**Ion.** That part of a salt or other electrolyte which carries the electrical charge.  $\text{Na}_2$  and  $\text{SO}_4$  are the ions of sulphate of soda.

**Iridescent.** Paper exposed to fumes of ammonia, having been first soaked in a mixture of gum, sulphate of iron, sulphate of indigo, and nutgalls, in solution.

**Iron Oxides.** See ferric and ferrous oxides.

**Iron Sulphate.** See ferrous sulphate.

**Isinglass.** A high grade of gelatine obtained from the swimming bladders of sturgeon. Mica is sometimes incorrectly called isinglass.

**Ivory.** Special finish on high grade cards, obtained by calendering between rolls upon which beeswax has been rubbed.

**Ivory Boards.** Hard, white, transparent boards, made from well beaten stuff, the substance being obtained by bringing two or more webs of moist paper together, the junction being effected by pressure, no adhesive being employed.

## J

**Jack.** A name applied to several mechanical contrivances, certain levers, a spring clip terminal in telegraph or telephone instruments whereby instruments can be quickly brought into circuit. Screw jackets and hydraulic jacks are operated to raise heavy objects.

**Jack Ladder.** The haulway up which logs are taken from water storage into sawmills or to be loaded on railway cars.

**Jacket.** The felt wrapped round a roll, as in the case of couch rolls. More correctly a tube of felt of the proper size to be drawn over the top couch roll of a paper machine or the couch rolls generally.

**Jacketed.** Covered with a jacket. In the case of certain cooking or heating apparatus vessels provided with double wall for a steam, hot water, or oil, space to prevent troubles due to direct contact with source of heat. Kettles for treating rosin with soda to make size are frequently jacketed.

**Jacquards.** Thick papers of ordinary quality made from jute and waste papers, cut and perforated to suit the Jacquard looms in spinning factories.

**Japanese Copying.** Specially thin and strong papers made in Japan from long fibers used for copying books.

**Japanese Paper.** This is made from the bark of the plant, *Morus Papifera Sativa*, and is used for fine engravings and especially for proofs of engravings and etchings.

**Japanese Vellum.** Thick papers made of Japanese fibers, very tough and durable, almost as difficult to tear as vellum. Finished with a good surface, suitable for certificates and various uses where very tough and durable material is required.

**Javelle Water.** A bleaching fluid prepared by adding potassium carbonate to ordinary chloride of lime liquor. The clear liquor is convenient for bleaching small quantities of fibers experimentally as there is no deposit of lime on the fibers, which sometimes occurs in the case of ordinary chloride of lime.

**Jordan.** See refining engine.

**Joule's Equivalent.** The mechanical equivalent of heat. The heat required to raise one pound of water one degree Fahrenheit if translated into energy without loss would raise 778 pounds one foot vertically.

**Journal.** That part of a shaft actually in contact with the bearing.

**Jute.** The bast fibers of the plants *Corchorus capsularis* and *C. olitarius* (Order Tiliacæ) are the source of jute or "gunny"; used for sacks, cordage, etc., hence finding its way into paper.

## K

**Kalinite.** Native potash alum, potassium aluminum sulphate.

**Kaolin.** See China Clay.

**Kathode.** The conductor or electrode by which a current leaves a conducting system.



**Kerosene—Coal Oil—Astral Oil.** Sometimes called paraffine oil.

**Killed Acid—**or killed spirits—Hydrochloric acid, neutralized by the addition of zinc until effervescence ceases. Used as a flux in soldering.

**Knife-Barker.** See Barker.

**Knotter.** A screen for removing knots, uncooked chips, or other foreign matter from cooked pulp; usually a revolving cylinder through the screen on the sides of which the fine pulp runs, while the tailings are discharged at the end.

**Kollergang.** See Edge Runner.

**Kraft.** The word itself means "strong," originally used of paper made from incompletely cooked spruce soda pulp worked into half stuff by a kollergang or edge runner; now usually refers to paper made from sulphate pulp or otherwise "kraft pulp."

**Kraft Brown.** Brown papers made of spruce soda pulp of high class quality, and designated by the German word *Kraft* meaning *Strength*. Usually refers to paper made from sulphate pulp.

## L

**Labarraque Solution.** Solution of Sodium Hypochlorite.

**Laboratory.** A place in which tests are made and experimental work is carried out.

**Lag—Lagging.** (1) The process of covering boilers, etc., with non-conducting material.

(2) The enlarging of a pulley by applying layers of wood, leather, etc., to its face.

**Laid.** Papers made with the use of a dandy woven in such a way as to leave distinct lines: those made in one direction being close together: others at right angles being about one inch apart.

See Wove and Dandy.

**Lake.** An insoluble color fixed on fiber by formation of a color precipitate. The word is used in several somewhat similar cases.

**Lamp Black.** A black material obtained by the incomplete combustion of hydrocarbons.

**Lanolin.** A semi-solid fat obtained from wool scouring which readily forms emulsions with water.

**Lap.** A sheet of pulp as taken off the wet machine, and folded for convenience in handling. It is often subsequently subjected to hydraulic pressure.

**Lapis Lazuli.** The natural ultramarine, which see.

**Lapping.** (1) A term used in England for certain wrappings.

(2) The production of pulp in laps.

**Larch.** See Tamarack.

**Leach.** To wash out, or to subject to a washing process.

**Lead Acetate.** When added to pulp in the beating engine, followed by a solution of potassium bichromate, a bright yellow precipitate, chrome yellow or canary yellow is produced which colors the fibers.

Used in testing paper for traces of sulphur and sulphur compounds, since filter paper saturated with lead acetate turns black or brown in contact with hydrogen sulphide.

**Lead Chromate.** A color produced by precipitating lead acetate with potassium chromate in the presence of the fibers. Called canary yellow or chrome yellow.

**Leather Boards.** Imitation leather prepared by pulping up leather scrap with or without jute or manila paper stock or wood pulps. Used for boxes, trunks, shoe-counters and heel-fillers.

**Leatherette.** Papers used for box covering and for covers of

cheap note-books: common papers made the color of the leather of which they are imitations, either as colored body papers or with colored surface and embossed with leather grain.

**Ledger.** Heavy account-book papers, usually colored faint blue, tub-sized, often laid and pressed.

**Lignified Fiber.** Mechanical wood pulp, also jute or any unbleached chemical wood pulp.

**Lignin.** A non-fibrous, undefined substance associated with celluloses in wood, completely removed by adequate chemical treatment.

**Lignite.** A form of fossil vegetable material, almost converted into coal, but not hard or black like the true coal.

**Lignocellulose.** The compound celluloses found in wood, as compared with the simpler cellulose which is found in the seed hairs of cotton.

**Lime.** See Caustic Lime.

**Linen.** Paper made from linen rags. Often incorrectly applied to rag papers generally.

**Linen Brief.** Foolscap paper ruled with thirty-six lines across the width of the paper and a vertical marginal line.

**Linen Faced Papers.** These receive their patterns in one of three ways: (1) By passing between embossed and engraved rollers, as described under embossed papers.

(2) By interleaving with zinc plates upon which are glued sheets of linen, and passing through the plate-rolling machine.

(3) Sheets of linen used between sheets of paper to be impressed—metal plates top and bottom, and pressure applied at the plate rolling machine.

**Liners.** Kraft papers from pulp made by sulphate process from mill edgings and slabs, largely from Southern Pine.

**Litharge.** Yellow oxide of lead PbO; used with glycerine in cements for sulphite digester linings.

**Litho—Lithographic.** A soft-sized paper, carefully made and dried, so that when moistened during the various printing operations, the expansion or stretch is very slight. Used for illustrations and color printing. When made for large poster work, care must be taken to maintain uniform thickness of sheet throughout, as the printing is done by contact with the face of a stone or aluminum plate upon which the design is raised only to a very minute degree above the level; hence the paper must be level to get the fine inking effects.

**Lithopone.** A white pigment prepared from the precipitate produced in the reaction between zinc sulphate and barium sulphide: also called Orr's white, Griffith's white or ponolith.

**Liquor.** The solution used or extract produced in various processes; bleach liquors, green liquor, white liquor, waste sulphite lye, black liquor, etc.

**Litmus.** A vegetable dye which is red in acid media and blue in alkaline. Often used as an indicator for the presence of acids or alkalis.

**Litmus Paper.** A chemical test paper made by soaking filter paper in tincture of litmus. Acids turn the paper red; alkalis turn the paper blue.

**Loans.** Strong tub-sized, light rag papers, sometimes handmade. Long treatment in the beater characterizes papers of this type; several sizes from *medium* 21 inches by 17 inches to *imperial* 29½ inches by 21½ inches. A little heavier than bank papers, not highly glazed.

**Loft Dried.** Paper hung up in sheds or lofts to dry slowly, so as to prevent any loss of strength due to drying rapidly on the steam-heated dryers of the machine.

**Log-haul.** See Jack Ladder.

**Logwood.** The wood of *Haematoxylon Campeachianum*, used as a source of black and gray colorings in certain papers.

**London Boards.** Originally boards formed by pasting sheets of best hand-made drawing paper. Thick pasteboards are sometimes supplied as London board.

**Long Elephants.** These are used by the paper stainers: that is, wall-paper printers.

**Luminous.** Paper prepared by mixing a phosphorescent compound with the half stuff.

**Lunar Caustic.** See Silver Nitrate.

**Lye.** A name usually applied to a strong solution of caustic soda or potash, but often used for other liquids; sometimes also for solid caustic soda.

### M

**M Paper.** That which is not up to the first sorting, but in which the imperfections are trivial, perceptible only to the expert.

**Machine.** When the "Machine" is referred to in a paper-mill, it is always understood to mean the paper-making machine.

**Machine Finish.** (1) The appearance of a sheet of paper after coming off the last dryer of the machine not calendered. (2) Paper calendered directly at the end of the machine is also called "machine finished."

**Machine Tender.** The senior member of the crew in charge of a paper machine. In operation—while having general supervision—his particular care is usually the wet end and his station usually covers the portion from the screens to the dryers.

**Madder.** A root—*Rubia Tinctorum*—producing several colors such as chocolate, Turkey red, purple or pink, according to treatment.

**Magazine Grinder.** A machine for making mechanical pulp, in large pulp mills, equipped with a rectangular bin placed vertically over the grindstone, and fitted to contain pulpwood blocks. Auxiliary equipment is arranged to supply them automatically to the stone as required.

**Magazine Paper.** Soft printing paper with a good machine finished or super-calendered surface, in order to give equal printing surfaces for half-tone illustrations both sides of the sheet. Imitation art papers are also used for illustrated magazines. Usually composed of bleached sulphite and soda pulp, also fillers.

**Magenta.** See Fuchsine.

**Magnesia.** Oxide of magnesium  $MgO$ —present in quicklimes prepared from dolomite or limestones containing carbonate of magnesium. Sometimes used by sulphite mills with milk of lime systems to increase the magnesia in the liquor.

**Magnesium.** An element—symbol  $Mg$ —Atomic weight 24.32—One of the alkaline earth metals, similar to calcium in chemical properties and often associated with it in limestones and dolomites.

**Magnesium Silicate.** See Agalite, Talc, Asbestos.

**Malachite Green.** (1) A mineral, basic copper carbonate.

(2) A coal-tar dye matching the mineral pigment in color.

**Manifold.** Paper for use in copying or multigraph work. Sometimes slightly waxed.

**Manila.** A paper made originally from bast fibers of manila hemp, *musa textilis*, now frequently refers to strong grades of paper made of chemical wood pulp: used for tags, wrapping and filing folders. The term is used to indicate the color and finish as well as the strength.

**Map Paper.** Thin, tough paper, folding without cracking, usually slightly sized with animal sizing.

**Marble.** Paper used by bookbinders, the color design of which is prepared by laying paper on the surface of a bath of gum tragacanth over which dyes have been sprinkled. The workman combs the surface into a variety of patterns.

**Marcasite.** White iron pyrites: a mineral sulphide of iron,  $FeS_2$ .

**Marshall Drive.** The usual form of drive for paper machines: with core gear and pinion—The driven section operates at right angles to the driving shaft, each section being controlled by cone pulleys on main line and counters, speeds being adjusted by changing the positions of belts.

**Marshall Refiner.** A refining engine from its designer, developed in Great Britain similar to the Jordan, but has in addition a disc attached to the large end of the cone provided with bars, which revolves against another stationary disc. The stock after passing the cone must pass between these discs.

**Marshall's Paper Tester.** An instrument for measuring the tensile strength of paper by breaking a strip of standard width. Incidentally the strength is measured.

**Mauve.** The first of the aniline dyes prepared in England by W. H. Perkin in 1856—dyes various shades of purple.

**Mechanical Pulp.** Pulp prepared by grinding wood by holding it with hydraulic pressure against a revolving grindstone with the addition of water. Synonym Groundwood.

**Medium.** See Sizes of Paper.

**Megasse.** See Bagasse.

**Mercaptan.** A very evil smelling compound, methyl mercaptan,  $(CH_3SH)$ , found in the gases from sulphate pulp cooking.

**Mercerize.** To treat textiles made of cotton cellulose with strong solutions of caustic soda under conditions suggested by Mercer, producing a silky sheen.

**Mercerized Cellulose.** Cellulose treated with strong solutions of caustic soda for the manufacture of viscose. Alkali cellulose.

**Mesh.** The size of opening in a wire cloth. The fourdrinier machine wires are usually 60 to 70 meshes to the linear inch, but for special cases, such as cigarette and similar papers, as small an opening as 90 to the inch might be used.

**Metallic.** Specially coated paper on which marks may be made with metal points: silver aluminum, etc., used for note-books and indicator diagrams. Mixture of whiting, lime and zinc white is used and subsequently glazed.

**Methyl Alcohol.** Columbian or wood spirit,  $(CH_3OH)$ . Now legally called Methanol in the United States, and Methyl hydrate in Canada. Obtained by destructive distillation of wood.

**Methylated Spirits.** Not wood spirit, but grain alcohol (Ethyl Alcohol  $C_2H_5OH$ ) which has been denatured by the addition of small amounts of wood alcohol or other substances.

**Methyl Orange.** A coloring matter, useful as an indicator in chemical analysis. When a drop of its aqueous solution is added to an alkaline solution a yellow color results. If a drop be added to an acid solution, a pink color results.

**M. G. Caps.** Machine glazed caps. Paper for wrapping purposes made on a Yankee machine, thus glazed one side only. Sometimes any strong thin wrapping paper used for bags.

**Micrometer.** A gage used for measuring the thickness of paper sheets in thousandths of an inch or in millimeters.

**Middles.** A rough coarse board, used as a filler for finer pasted sheets. Generally prepared from waste paper and mechanical pulp.

(To be continued)

## CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

### Properties, Chemistry and Testing of Raw Materials and Finished Product.

**Australian Wood Pulp Tests.**—*Paper Trade J.*, lxxiv, No. 17, 18 (April 27, 1922).—Tests have been made recently on various woods native to Australia to determine their suitability for paper making. Excellent results are said to have been obtained with the hoop pine and silky oak of Queensland. The latter is cheaply grown and makes a very strong wrapping paper. Kraft papers can be made from cypress, pine, and white oak grown in the same province. In the State of Victoria, "wooly-but," "silver top" and "mountain ash" have given most satisfactory results.—I. G.

**The Decomposition of Typha Domingensis.**—E. Heuser and J. Haugerod. *Papierfabr.*, xx, 253-262 (March 5, 1922).—The authors determined cellulose, ash, silica, wax and fat, wood gum, and pentosan. Boiling the grass with milk of lime solution yielded a pulp which had a high lignin content. Sulphate treatment was carried out under a number of different conditions.—I. G.

**The Strength of Hand-Made Paper Samples.**—T. E. Blasweiler. *Papierfabr.*, xx, 193-197, (Feb. 19, 1922).—The suitability of fibrous materials for various purposes can be determined otherwise than by making large scale tests on the paper machine. A sample containing 25 to 50 g. of air-dry pulp is placed in a suitable container where it can be stirred and mixed with any desired material, sized, loaded, colored, or subjected to other treatment. A sheet of suitable size is prepared from the mixture, and can then be subjected to pressure tests, impregnation, parchmentizing, coating, etc. It is claimed that this arrangement is particularly suited to making sizing, loading, and coloring experiments. The hand-made sheet can be compared with the machine-made paper produced under the same conditions of sizing, loading, coloring, etc. In most cases the strength of the hand made paper was lower than that of the corresponding machine made paper.—I. G.

**The Determination of the Sizing Quality.**—F. T. Carson. *Paper Trade J.*, lxxiv, No. 14, 43-49 (April 6, 1922).—The different methods used in the determination of the sizing quality of paper were investigated and their value is discussed. Okell's electrolytic method is examined in some detail. A new method has been evolved, based on the following principle, which has not been used heretofore: A small piece of paper, when floated on the surface of the water, will curl up into a cylindrical form with the machine direction as the axis. After maximum curling has taken place the sample begins to unfold. The time taken for this maximum curling to take place is remarkably uniform for the same paper under the same conditions. An explanation of this phenomenon is suggested, connecting it with the sizing quality of the paper and showing how it can be used as a measure of the degree of sizing. The method is applicable to all grades of paper from a good newsprint to the finest bonds, but is not suited to those papers which are so thick as to render the degree of curl comparatively small. The method affords a numerical value for relative sizing quality, the apparatus required is simple, and the test takes but little time.—I. G.

### Forestry

**Canada Against the Export of Unmanufactured Pulp Wood.**—*Paper Trade J.*, lxxiv, No. 17, 18-19 (April 27, 1922).—The

movement is said to be gaining momentum. The agitation for the enactment of laws to prevent the exportation of pulp wood from Canada is widespread. The principle behind the movement is that the prohibition of such exports will tend to encourage the growth of the domestic paper industry and help to establish new paper mills in Canada. The buying up of whole sections of woodlands by American interests for conversion into pulp wood is held to be detrimental to local industries.—I. G.

### Wood Preparing and Equipment

**A New Idea in Chip Breaking.**—A. D. Wood. *Paper Trade J.*, lxxiv, No. 17, 46-47 (April 27, 1922).—Two general methods of treating chips are in vogue in American pulp mills. In one case all the chips are sent through a breaker, then screened, the sawdust being discarded and the rejects given further treatment with rechippers. In the other process the entire product of the chipper is sent to the screen and only the rejects to the rechipper. The problem was how to break the chips to suitable size without increasing sawdust loss. The breaker is provided with spikes on its face. (See next abstract).—I. C.

**Chip Breaker.**—U. S. A. Patent 1,414,914, A. D. Wood, L. Thantham and E. T. Self, May 2, 1922. (Compare preceding abstract).—A breaker head provided with sharpened spurs or prongs is placed just behind the chipper disc and in the path of the chips. The large chips from the chipper are impaled and broken by the prongs. The breaker is preferably rotated to increase its efficiency.—A. P.-C.

### Sulphite Manufacture and Equipment

**Utilization of Sulphite Waste Liquors.**—Ger. Patent No. 341,690, L. Stein.—According to the principal patent (Ger. Patent No. 339,741) and Ger. Patent No. 340,453, a gelatinous substance is added to the liquor in such an amount that only a partial precipitation of the lignin and tannin takes place in the form of a fine suspension. As has been demonstrated by actual experiments, still further quantities of gelatinous materials can be added to the liquor obtained in this manner, without causing precipitation of the lignin, provided substances such as various forms of starch, gum arabic, etc., are also added. The products obtained in this manner are useful not only as sizing materials, dressings, etc., but also as adhesives.—I. G.

**Removing Sulphur Dioxide from Sulphite Waste Liquor.**—Ger. Patent No. 345,774, Zellstoffabrik Waldhof and H. Clemm.—The sulphur dioxide is absorbed by allowing the liquor to remain in contact with finely divided wood or other cellulosic material before neutralization. Chips intended for the manufacture of pulp can be used for this purpose.—I. G.

**Combustion of Sulphite Waste Liquors.**—E. Wirth. *Papierfabr.*, xx, 65-71, (1922).—The dry material in sulphite waste liquor has an average calorific value of 4,400 calories on a 10 per cent ash basis. This figure can vary owing to the fact that the treatment of the liquors may introduce larger quantities of ash. The net calorific value of the liquor itself at any concentration may be calculated from this figure by deducting the total heat required to evaporate the water present in the liquor. When the concentration of solids in the liquor is 12.5 per cent, this figure is zero, and it is of no practical importance for concentrations below 40 per cent. The concentrated liquor must be burned with the aid of a coal fire. Tests in a boiler furnace indicated 80 per cent efficiency for liquor containing



15 per cent of water and 70 per cent for liquor containing 56 per cent of water. The acidity of the concentrated liquor requires 6 g. of caustic soda for neutralization. The most economical method of neutralizing is to add to the thin liquor, containing 11 per cent solids, 3.75 kilos of chalk, 2.1 kilos of quicklime per cubic meter, with a trace of caustic soda. Before passing the liquor to the evaporators, the sludge should be separated. As sodium sulphite corrodes the evaporator, it should be oxidized by passing air through the liquor. The evaporation is conducted with the aid of a "heat pump," which is designed especially for the separation of the calcium sulphate from the self cleaning heating surfaces. About 285 liters of original waste liquor are required to produce a quantity of liquid fuel, which contains 30 per cent of water and which can give 100,000 calories of effective heat in the boiler furnace. The quantity that must be evaporated is 256 kilos for which the consumption of power is 7 kilowatt hours, or 7.6 h.p. hours. The hot thick liquor that is produced in the evaporator is fed directly to the boiler furnace without any special arrangement. One man can run the neutralizing and evaporating plant.—I. G.

**Utilization of Sulphite Waste Liquor.**—Ger. Patent No. 343,140, L. Stein. Addition to Ger. Patent No. 341,690.—Sulphite waste liquors which have been treated so as to yield products which are used in the dressing and finishing of textiles may be mixed with various substances which improve the value of the products for these purposes. Such substances as starch, gum or gum tragacanth, mixed with glue or other gelatinous substances can be used. Much better results are secured in this manner.—I. G.

**Sulphurous Gases from Sulphite Waste Liquors.**—Ger. Patent No. 350,155, G. Leuchs and Eisenwerke Gesellschaft Maximilianshuette, March 3, 1922.—The sulphite waste liquor, either dried or in the liquid condition, is mixed with sulphates such as kieserite, kainite, etc.—I. G.

**Process for the Preparation of a Pure Cellulose.**—Ger. Patents Nos. 336,535 and 337,768, Aktien Gesellschaft für Zellstoff und Papierfabrikation.—The patent covers a process for the production of a very pure form of cellulose with a fiber that resembles that of cotton or wool. This cellulose is extracted from vegetable materials by the sulphite process. The sulphite liquor is mixed with organic acids or their salts, or both, e. g., acetic acid or sodium formate. It is also advisable to add mineral acids. The operation is carried out in two or three stages. In the first place the material is treated with the usual sulphite liquor, then with mixtures made as above. A final treatment may also be given by subjecting the material to the action of organic acids. This treatment yields a very pure cellulose free from all impurities.—I. G.

**New Digester Equipment in Sulphite Mills.**—A. D. J. Kuhn. *Wochbl. Papierfabr.*, lii, 3508-3513 (Nov. 29, 1921).—New devices for charging chips into the digesters, for introducing the liquor, for blowing the digester are described. Diagrams are given of various new parts of digesters, such as acid level glass, outlet for the used liquor, arrangement for taking a sample of the pulp in the digester during the cook, etc.—I. G.

#### Soda and Sulphate Manufacture and Equipment

**Dry Distillation of Evaporated Pulp Waste Liquors.**—Ger. Patent No. 344,609, E. L. Rinman. Also Can. Patent No. 189,656 (April 15, 1919).—The distillation is carried out in the presence of strong bases and of superheated steam. At the start the temperature is kept below 200 degrees Centigrade to drive out the major part of the water; then the temperature is raised to between 200 and 300 degrees until most of the methyl alcohol has been evolved; and finally it is raised to 300 to 500 degrees at which temperature acetone is produced and distilled.—I. G.

**Utilization of Sulphate Waste Liquors.**—Ger. Patent No. 343,954, L. Stein.—The concentrated liquor, at a density of 34 to 37 degrees Beaumé, is mixed with a solution of rosin, oil, etc., in a volatile, inert solvent such as benzine, benzol, carbon tetrachloride, etc. Only a small amount of these solutions need be used, and the mixture is agitated until an emulsified mass is obtained. A good adhesive composition can be made from nine parts of the concentrated liquor and one part of a solution of rosin in benzine. A very effective dressing preparation is produced from nine parts of the liquor and one part of a solution of oil in benzol. A tanning agent can be prepared by kneading together nine parts of the liquor and one part of oil dissolved in benzine. This mass must be diluted with water before using.—I. G.

**Process for the Preparation of Pulp.**—Ger. Patent No. 349,880, E. Opfermann.—Straw, reeds, flax, broom, esparto, and other similar cellulosic materials are treated with caustic or carbonated alkalies or with the oxides and hydroxides of the alkaline earths, in as concentrated solutions as possible, in edge runners, stamping machines, or refining engines, the solutions acting during the comminution of the mass. The advantage of the method rests in the fact that the decomposition of the cellulosic material can be carried out to any desired point with a minimum consumption of chemicals. The presence of large amounts of water reduces the effectiveness of the chemical solutions, and while the ordinary process requires the aid of heat and pressure, the present process can be carried out in the cold without the need of expensive machinery. In addition, the liquor that is recovered from the first decomposition treatment can be readily used for subsequent treatments, and when its concentration is reduced too low for the purpose it can be very easily re-concentrated and regenerated by the addition of more chemicals.—I. G.

#### Bleaching, Bleach Manufacturing and Equipment

**Producing Bleach Liquor with Liquid Chlorine in the Pulp and Paper Mill.**—S. W. Jacobs and H. P. Wells, Electro Bleaching Gas Co., New York. *PAPER TRADE J.*, lxxiv, No. 16, 41-47 (April 20, 1922); *Paper Ind.*, iv, 100-117 (April, 1922).—A discussion of the adaptation of liquid chlorine to the bleaching of those fibers which do not respond to an acid bleach, or where because of the large quantities of chlorine required to carry it in solution in water is impractical. The bleaching agent is calcium hypochlorite, prepared by the action of chlorine gas on high calcium lime. The product is of the same chemical composition as the solution prepared from dry bleaching powder, but differs markedly in some of its physical qualities. Chlorine passes up through a tower down which milk of lime is allowed to flow, the tower being packed with rings to afford as large a surface as possible for absorption. The solution, after passing down the tower, flows into a circulation tank where it is kept agitated and from which it is pumped back to the top of the tower and allowed to flow down again. When the solution is of the required strength, the bleach liquor is pumped from the circulation tank to a storage tank. A description is given of the specially designed bleach plant built at the Lincoln Paper Mills, Merritton, Ont., for the preparation of bleach by this process. Detailed results are given of operating tests showing an absorption efficiency of practically 100 per cent, an availability of the absorbed chlorine of 99.17 per cent, a maximum of 0.131 per cent of the absorbed chlorine converted to chlorate, loss of 0.31 per cent in sludge, a requirement of 1,052 pounds of lime per 1,000 pounds of chlorine, and an alkalinity of the finished bleach equal to one gram of lime per liter. The advantages of the system are discussed.—I. G.

**Alkaline and Acid Bleaching.**—Hottenroth. *Wochbl. Papier-*



*fabr.*, lii, 3784-3789 (Nov. 11, 1921).—The rapid bleaching action on litmus coloring matters, which is obtained with a cold, acid, solution of bleaching powder, is not obtained with a hot, alkaline solution. With equal consumptions of chlorine, the same bleaching action is not secured on cellulose with a cold acid bleach liquor as with a warm one. Cellulose bleached in liquor acidified with carbon dioxide shows an increase in the copper number, in spite of the fact that the whiteness of the pulp is not so pronounced, as compared with cellulose bleached in a warm alkaline solution. This copper corresponds approximately to the increase caused by sulphuric acid under conditions of equal acidity. The most effective bleaching action is obtained with the use of carbon dioxide when the solution is acidified to such a degree that the bleaching action of the bath remains effective as long as possible during the process. Less chlorine is consumed in bleaching tests made first with acid and then with alkaline bleaches than in either the acid or alkaline bleach used alone. The alkaline bleach followed by the acid bleach does not yield the same result. The best practice is to allow about two-thirds to three-quarters of the chlorine consumed in the bleaching process to act in acid solution, and the remainder in the alkaline solution.—I. G.

**Paper Manufacturing and Equipment**

**Furnishing Beaters.**—*Papierfabr.*, xx, 6-8 (Jan. 8, 1922).—The various apparatus used in furnishing beaters are described in detail as regards both operation and construction. The various measuring devices used are also explained in detail.—I. G.

**Beater.**—Ger. Patent No. 342,772, Griley-Unkle Engineering Co. In the trough there is a sorting device by means of which the material which has not become properly loosened up can be removed periodically. It consists of a shaft with pickers which can swing out diagonally across the direction of flow of the stock and which automatically remains fixed in each of the positions in which it is placed.—I. G.

**The Rational Theory of Beating.**—S. Smith. *Papierfabr.*, xix, 1184-1189 (Oct. 21, 1921); 1285-1289 (Nov. 11, 1921); 1465-1471 (Dec. 16, 1921); xx, 97-105 (Jan. 29, 1922).—The hollander is studied from all angles: efficiency, capacity, power consumption, etc. A formula is deduced for the rate of circulation of the stock in the beater.—I. G.

**Sizing paper with Rosin and Coumarone Resins.**—Ger. Patent No. 349,595, G. Muth.—One part of saponifiable rosin is melted with about 10 parts of coumarone resin and the mixture kept liquid until foaming stops. The mass is then treated with alkalis, ammonia, or water glass solution to produce an emulsion. The cooking may be carried out either in an open vessel or under pressure. The use of coumarone or indene resins, or other artificial resins, gives a cheaper, more uniform, and purer product than natural rosin, and the soap obtained is so soluble in water that it can be added directly to the beater.—I. G.

**Engine Sizing with Animal Sizes.**—Ger. Patent No. 349,881, Badische Anilin und Soda Fabrik.—Addition to Ger. Patent No. 331,350. To 100 parts of dry pulp add 0.25 per cent of rosin size, 2 per cent of the animal size or albumen, 4 per cent of "Neradol D" (which is a condensation product of cresol with formaldehyde prepared according to Ger. Patent No. 262,558) and 1 to 2 per cent of aluminum sulphate. The paper is then finished in the usual manner. Other animal sizes can be used, as well as other condensation products and various organic substances which precipitate the size. The size is thus rendered insoluble and firmly fixed on the fiber.—I. G.

**List of Abbreviated and Full Titles and of Addresses of the Journals from Which Abstracts Have Been Prepared for This Issue.**

Paper Industry.....The Paper Industry, 356 Mcnadnock Block, Chicago, Ill.

PAPER TRADE JOURNAL...PAPER TRADE JOURNAL, 10 East Thirty-ninth St., New York City.  
 Papierfabr. ....Der Papier-Fabrikant, Otto Elmsner, Oranienstr. 140-142, Berlin, S. 42, Germany.  
 Wochbl. Papierfabr. ....Wochenblatt für Papierfabrikation, Güntler-Staib in Biberach a. d. Riss, Württemberg, Germany.

**Canadian Paper Imports and Exports**

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., June 12, 1922.—A report issued by the Department of Trade and Commerce on the imports and exports of various commodities for the fiscal year ending March 31, 1914, 1921 and 1922, contains much information of interest to the pulp and paper industry, as it enables comparison to be made between the year just closed and the last pre-war year. Details relating to the industry are shown in the following items:

Imports Into Canada—	1914	1921	1922
Cardboard .....	\$324,133	\$1,697,548	\$842,193
Printing paper, lbs. ....	19,366,575	7,967,171	5,268,039
Printing paper .....	\$815,990	\$1,039,938	\$478,680
Wrapping paper, lbs. ....	6,980,626	6,353,648	3,862,629
Wrapping paper .....	\$214,498	\$695,218	\$243,567
Writing paper and stationery....	\$451,873	\$466,494	\$385,579
Other paper.....	\$3,517,772	\$4,219,701	\$2,459,298
Paper boxes and containers.....		\$1,473,436	\$803,075
Other manufactures of paper....	2,587,468	4,044,064	2,725,213
Total value.....	\$7,911,734	\$13,633,399	\$7,937,605

The figures show that the value of these imports, which increased greatly in 1921, decreased in 1922 to little above the figures for 1914. As regards quantity, Canada imported much less paper in 1922 than in the pre-war year; this will be seen from the figures on printing and wrapping paper where quantities have decreased very considerably but values have not declined in anything like the same proportions.

**Exports from Canada:**

Under the heading of exports we have the following figures:

	1914	1921	1922
Wall paper rolls.....	550,433	5,108,287	2,359,284
Wall paper rolls.....	\$45,328	\$831,771	\$445,536
Printing paper, cwts. ....	5,851,579	15,112,586	15,138,327
Printing paper.....	\$11,386,845	\$78,922,137	\$64,635,627
Paper boards .....		\$5,267,842	\$2,306,525
Wrapping paper, cwts. ....	182,520	340,946	162,625
Wrapping paper .....	\$615,310	\$3,672,780	\$1,264,654
Other paper and manufactures of	\$627,553	\$3,408,776	\$881,076
Total value.....	\$12,675,036	\$92,103,306	\$69,533,418
Pulpwood, cords .....	1,089,384	1,615,467	825,967
Pulpwood .....	\$7,388,770	\$21,513,594	\$9,879,150
Chemical pulp, cwts. ....	1,515,633	9,080,964	7,098,527
Chemical pulp .....	\$2,923,083	\$55,060,219	\$25,468,785
Mechanical pulp, cwts. ....	4,816,170	5,282,042	5,336,710
Mechanical pulp .....	\$3,441,741	\$16,491,818	\$10,456,092

The tremendous advances in the value of our exports in 1921 was of course partly due to the increase in prices, but it is satisfactory to note that where quantities are given in the Government figures these show up well in comparison. The quantity of wall paper exported in the fiscal year just closed was over four times the quantity in 1914; printing paper exports increased from 5,851,579 cwts. to 15,138,327 cwts.; wrapping paper did not do as well, showing a decline from 1914 figures.

A similar large increase is noted in the quantity of chemical pulp exported in 1922 and a similar increase in mechanical pulp. Considering that the figures for the fiscal year, 1922, includes nine months of 1921, which was a year of depression and slackness, there seems good evidence that the pulp and paper industry of Canada stood the shock very well and that it is progressing in the right direction.

**Maine Wants W. S. Forest Station**

AUGUSTA, Me., June 20, 1922.—Governor Baxter has taken up with the United States Forest Service the advisability of establishing a government forest experiment station in Maine. He urges that the bureau establish a station here, on account of the necessity for conserving the very valuable timber lands of northern Maine, in order to assure the permanence of the great lumber and pulp industries in Maine. An experiment station would study the local problems and its work would be of great value.

## Trade Mark Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade-mark applications pertinent to paper and pulp field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister building, Washington, D. C., or Bush building, 130 West Forty-second street, New York, trade-mark specialists.

As an additional service feature to its readers, the PAPER TRADE JOURNAL gladly offers to them an advance search free of charge, on any mark they may contemplate adopting or registering.

**FIDELITY**, in white letters in upper part of black shield and letters S. A. D. Company as monogram, below. No. 142,423. San Antonio Drug Company, San Antonio, Tex. For waxed paper, wrapping paper, crepe paper, tissue paper and toilet paper.

**ROBARCO**, in white letters on black background. No. 156,808. Rockwell-Barnes Company, Chicago. For adding-machine rolls, binders clip boards, composition books, copy cloths, document manila, file backs, file folders, hat checks, impression books, journal books, long day books, memorandum books, metal file boxes, paper tablets; paper fasteners, brass and steel; perforated memo tabs, record books, spelling blanks, stenographic notebooks, train orders, waybills; blank books and pencils, ordinary and mechanical; papers—bond, cloth finish, duplex, French folio, laid, linen, mimeograph, onionskin, parchment, print, sulphite, telegraph writing, wove writing; papers, ruled—foolscap, journal, ledger, penmanship.

**PILOT COVER**. No. 139,955. J. W. Butler Paper Company, Chicago. For cover paper.

**MARVELLUSTRE**, No. 161,139. The Marvellum Company, Holyoke, Mass. For cover paper.

**PICTURE** of a fancy rectangular frame. No. 158,024. White & Wyckoff Manufacturing Company, Holyoke, Mass. For writing-paper tablets, papeteries, typewriter tablets, writing and printing paper and mailing envelopes.

**IN THE BEST BUSINESS CIRCLES**, and letters B. W., in white on black disc in center. No. 156,558. Byron Weston Company, Dalton, Mass. For writing paper.

### J. & B. Garrett Open Office in Rochester

ROCHESTER, N. Y., June 20, 1922.—The J. & B. Garrett Company paper and printers' warehouse, with headquarters in Syracuse Lane opened an office at 407 Powers Building here under the management of R. A. Nye.

### Issue New Pyrometer Bulletin

The Thwing Instrument Company, 3339 Lancaster avenue, Philadelphia, has recently issued Bulletin No. 11 describing Thwing Radiation Pyrometers. The pamphlet is well illustrated with photographs and diagrams and traces the advantages of the Thwing Pyrometer in the industry, together with the theory of its operation.

Those interested in these electrical instruments for indicating and single or multiple-recording types for measuring all temperatures from the coldest (liquid air) to the hottest (the electric furnace) will be able to obtain copies of this bulletin by communicating with the Thwing Instrument Company.

### H. S. Lewis on Black River Regulating Board

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., June 19, 1922.—Harry S. Lewis, of Beaver Falls, head of the J. P. Lewis Company, was in the city Friday in conference with J. V. Baron and J. N. Carlisle, of the Board of the Black River Valley Regulating District. Mr. Lewis was recently appointed to that board by Governor Miller to succeed the late James A. Outterson. He has not as yet provided his bond and taken the oath of office.

### Continental Bag Mills Strike Called Off

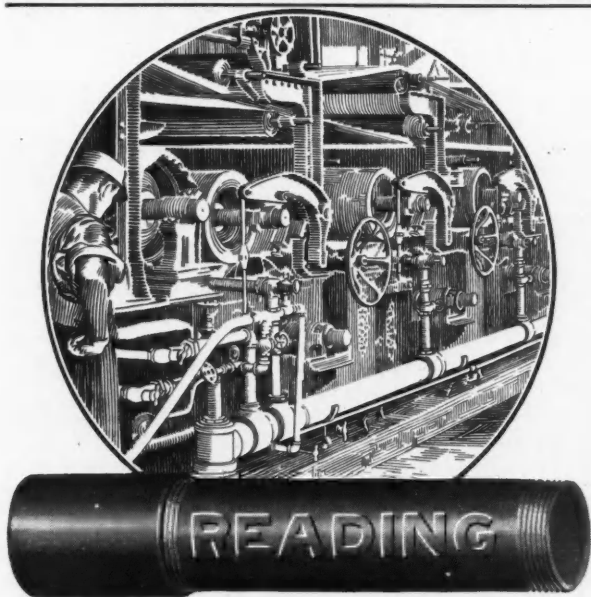
Officials of the Continental Paper and Bag Mills, Rumford, Me., and the committee of former employees of the bag mill, who have been on strike since May 11, 1921, have been notified by the State Board of Arbitration and Reconciliation that the strike at the local mills is called off. The mill has been operating for some time under normal conditions and the State Board's decision came as a result of a request by mill officials and a subsequent investigation by the Board.

### Assure Water for Wisconsin Mills

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 20, 1922.—Paper mill owners of the Wisconsin River Valley said last week that the heavy rains which swept over Wisconsin have filled the big storage reservoirs in the northern part of the state, assuring sufficient water to operate the mills most of the summer. They do not expect a repetition of the condition in 1921, when many of the mills were forced to suspend operations because of the low water.

**EASTERN COMPANY**  
**MANUFACTURING**  
**BLEACHED SULPHITE**



**“How Can I Get My Production Costs Down?”**

“That was the question I asked myself a dozen times a day,” said the paper mill superintendent, “and it wasn’t until I had learned by experience that poor pipe was responsible for keeping my costs up. The pipe I had installed in the mill didn’t last—it rapidly corroded. Costly replacements were made. But that wasn’t all. Production costs went up along with maintenance costs. I began to see light and asked myself, ‘What’s the best pipe to use?’ And I found the answer to this in Reading Genuine Wrought Iron Pipe.”

Reading Genuine Wrought Iron Pipe is solving piping problems in more and more paper mills every day. It is proving that it is the correct pipe by the service it is rendering. For it is giving as much as three times the life of the best steel pipe.

And here’s the why of its long life: Reading Pipe has a silicious slag content which protects each grain of iron against corrosion. This slag is found only in genuine wrought iron pipe.

It is essential that a pipe with such corrosive resisting qualities should be installed in your mill. It gives a service which results in low ultimate pipe cost—low production cost—and low maintenance cost.

Bulletins on pipe installations will be sent to you upon request

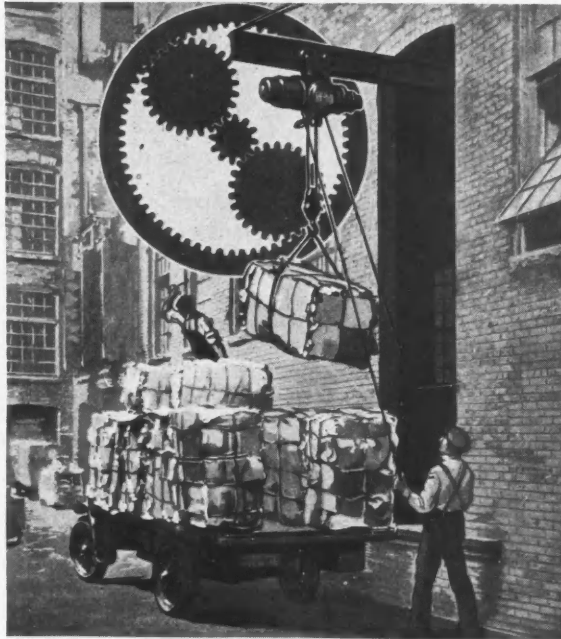
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World’s Largest Makers of Genuine Wrought Iron Pipe

**READING**  
GUARANTEED GENUINE  
**WROUGHT IRON PIPE**

*THE SHEPARD ELECTRIC*  
**LIFTABOUT**



**Quickly pays for itself in labor-saving on any load moving job**

**I**N paper mills, warehouses, and printing plants, much load-moving is done slowly and laboriously by manual labor or other equally wasteful methods. The smaller jobs, even, unnoticed “eat” into profits and prove big items of expense. The Shepard Electric **LiftAbout**, the new and smaller electric hoist turns such loss into profit and gain. With a **LiftAbout**, it is possible to handle all loads much more efficiently in less time. One man, any man, can operate a **LiftAbout**—unassisted, he can handle weighty, cumbersome, or fragile loads.

The **LiftAbout**, due to quantity production, is surprisingly low in price. It is easily and economically installed to operate on overhead track to shipping platform; on the side of a building to serve a stairway or sidewalk hatch; in the yard; or on the ceiling of a warehouse, stockroom, mill. Investigate the **LiftAbout**—learn of its possibilities for the load-moving work in your plant.

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## New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,  
WEDNESDAY, JUNE 21, 1922.

Despite the resistance of buyers to advancing prices in the primary markets, the past week has seen a further strengthening in many lines. In the paper market it appears that due to the slowness with which merchandise may be turned over and the continuance of the policy of hand-to-mouth buying on the part of the consumer, not much profit has accrued to merchants in purchases of paper at comparatively low prices. It is generally believed that until the attitude of buyers is changed, the cost element will not prove a very great factor in stimulating conditions in various branches of the paper industry.

This point, however, is taken as a good sign by many dealers, who reason that because of the immediate consumption of shipments made at present, current demand from the mills is the regulating factor in business. While dealers are not placing orders for future shipment to any great extent, they are buying regularly and more frequently to meet their demands month by month. Hence, the element of speculation is practically removed and buyers are standing pat.

Manufacturers, on the other hand, are piling up a considerable surplus in anticipation of a spurt in demand in the early fall months. Summer inventories, vacations and low water are combining to curtail production in many lines, but this has not affected the trade in the usual manner, probably due to the large reserve supply of materials that is slowly but surely finding its way into consuming channels.

News print is still keeping up the stiff pace it has set since the beginning of the year, and there are no evidences that the demand will weaken during the summer. Publishers are still in the market actively and mills have been kept in the neighborhood of capacity production for some time to fill their orders. Several sizable orders have been booked into the future, but producers are not over anxious to sign long-time contracts in view of the almost certain advance which they believe will reach this market in the near future.

Book has been active throughout the past week, but prices are still comparatively very low. The reopening of a good many of the smaller publishing houses, printing magazines, trade journals, house organs, etc., has stimulated the consumption of book paper, and both dealers and manufacturers are considerably more optimistic.

Fine paper has been improving gradually each week. Business houses, relieved of the stringency of war and post-war conditions, are discarding the half-sheet letterhead in many cases and are consuming more stationery. Increased advertising and the wholesale use of the circular letter has helped swell the demand for ledger and bond paper, and prices in general have an upward trend when any fluctuation is apparent.

Tissue is slowly regaining its foothold, though the textile industry is buying very closely and not much of the large supplies the mills have on hand is going into consumption. Quoted prices are still very low, and producers have, for the most part, either closed down or are curtailing their output during the summer.

Kraft wrapping paper appears to be firming somewhat and this steadiness in price is balanced by a fair demand. Many inquiries are coming in from abroad regarding the field for Scandinavian and German krafts in this country and importers are contracting for large tonnages. This has caused some concern among domestic producers, although it is generally believed that conditions will soon become so greatly alleviated that American manufacturers will be enabled to compete on a profitable basis.

Boxboard is still heading the board market for activity and competition is rampant, but a great measure of confidence has been regained on the part of buyers, with a consequent strengthening effect upon the general tone of the market. Board manufacturers are anxiously watching developments in the coal situation, but feel that the government will step in before conditions have become so

acute as to hamper their production materially. At the present time many board mills are idle and their owners are just awaiting the psychological moment to get under way again. Stocks in some grades are running low, and by fall prices should stiffen appreciably.

### Mechanical Pulp

Low water is tending to curtail the usual amount of ground wood produced, and the demand, during the past week, has strengthened somewhat. With the present drain upon the reserve supplies of grinders and continued slack production for the next sixty days, producers of mechanical pulp should have no difficulty in disposing of their product by the time fall comes around. The consumers who are entering most actively into this market at the present time are news print and board manufacturers, and prices are steady, although a slight shading is frequently obtained on a quantity shipment.

### Chemical Pulp

Prices in this market appear to be hardening as the demand for various grades increases. Larger tonnages are being booked on both bleached and unbleached sulphite, and Mitscherlich is hard to obtain in large quantities, according to some dealers. Scandinavian countries are pouring a steady stream of foreign pulp into this country, and although domestic manufacturers find it difficult to compete on a profitable basis, still the demand continues unabated and gives ground for much optimism regarding the coming months. Dealers and manufacturers alike unanimously anticipate a rise in price within a very short time and are not enthusiastic about booking orders for future shipment of large quantities at present break-even prices.

### Old Rope and Bagging

Old rope continues very firm, while bagging has taken a few strides forward during the past week. Buyers are beginning to take a greater interest in the latter and the fall months are predicted to usher in a new season of prosperity to a market that has been practically inert for many months. Among the old ropes, manila has been holding its own at the head of the list and prices have stiffened approximately half a cent on both foreign and domestic grades.

### Waste Paper

Binderies are not cutting large quantities of waste paper at present, and there is a noticeable shortage of stocks on many grades. That it does not get a chance to accumulate is evidenced by the fact that Jersey mills are sending motor trucks into New York with board and are carrying mixed paper back. This eagerness on the part of the consumer, buying practically from the doorstep of the waste paper merchant, is rather hard to account for when it is considered that the price of soda pulp approximates that of No. 1 soft white shavings, as there is generally a price differential of  $\frac{1}{4}$  to  $\frac{1}{2}$  cent between waste paper and soda pulp. Further evidence that mills were low in stock, due to their hand-to-mouth buying tendency, is shown by the sharp price advances that followed the first resumption of buying. Practically all grades of waste papers have stiffened in the past week.

### Rags

The supply end of the rag market is rapidly dwindling, and the fact that roofing rags have jumped from .65 to 1.10 in a short time should be indicative of the corresponding strides which will be taken by other items. It is generally felt in the rag market that if any buying is done on a large scale, price advances will come in proportion.

### Twine

Activity in many grades of twine continues to pick up, and the general price stiffening which took effect ten days ago has resulted in many inquiries being received by twine merchants. Supplies are running quite low in this market and this factor has probably been the most influential in effecting the price advance.



Market Quotations

Paper Company Securities

New York Exchange closing quotations June 20, 1922:

Table of Paper Company Securities with columns for Company Name, Stock, Bid, and Asked prices.

Paper

Table of Paper products (F. o. b. Mill) including Ledgers, Bonds, Writings, and News.

Table of Paper products (F. o. b. Mill) including Kraft, Manila, and various other grades.

Table of Paper products (F. o. b. Mill) including Kraft, Manila, and various other grades.

Table of Paper products (F. o. b. Mill) including Kraft, Manila, and various other grades.

Table of Paper products (F. o. b. Mill) including Kraft, Manila, and various other grades.

Mechanical Pulp

Table of Mechanical Pulp products including No. 1 Imported and Domestic.

Chemical Pulp

Table of Chemical Pulp products including Sulphite, Bleached, and various grades.

Domestic Rags

Table of Domestic Rags including Shirt Cuttings, Blue Overall, and various other types.

Table of Domestic Rags including White, No. 1, and various other grades.

Table of Domestic Rags including Foreign Rags, New Light Silecias, and various other types.

Table of Domestic Rags including Foreign Rags, New Light Silecias, and various other types.

Bagging

Table of Bagging products including Gunny No. 1, Foreign, and various other types.

Twines

Table of Twines including Cotton, No. 1, and various other grades.

Table of various Paper products including India, Light, Dark, and various other types.

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Table of Paper products (Chicago) including Binders, Straw, Filled Pulp, and various other types.

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Table of Paper products (Philadelphia) including Bonds, Ledgers, Writings, and various other types.

Old Waste Papers

Table of Old Waste Papers including Shavings, Flat Stock, Manila, and various other types.

Table of Old Waste Papers including Shavings, Manila, and various other types.

Table of Old Waste Papers including Shavings, Manila, and various other types.

(Continued on page 66)

# Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

## NEW YORK IMPORTS

WEEK ENDING JUNE 17, 1922

### SUMMARY

Printing paper	99 cs.
Tissue paper	18 cs.
Cigarette paper	249 cs.
Filter paper	6 cs., 78 bls.
Drawing paper	16 cs., 8 bls.
Wrapping paper	45 bls.
Packing paper	1,281 rolls
Wall paper	2 bls.
Hangings	13 bls., 4 cs.
Miscellaneous paper	2,100 bls., 1,363 rolls, 151 cs.

### CIGARETTE PAPER

American Tobacco Company, Editor, Havre, 143 cs.  
 Hard & Ritter, Sinsinawa, Barcelona, 20 cs.  
 Hard & Ritter, Pde Satrustequi, Barcelona, 20 cs.  
 W. R. Grace & Company, by same, 20 cs.  
 Liggett & Myers Tobacco Company, Ontario, Bordeaux, 21 cs.  
 British-American Tobacco Company, Adriatic, Liverpool, 25 cs.

### TISSUE PAPER

E. H. Wyman Company, Adriatic, Liverpool, 6 cs.  
 Meadows, Wye & Co., by same 10 cs.  
 Meadows, Wye & Co., Scythia, Liverpool, 2 cs.

### PRINTING PAPER

B. F. Drakenfeld & Co., Scythia, Liverpool, 13 cs.  
 W. F. Ethrington & Sons, Columbia, Glasgow, 41 cs.  
 Oxford University Press, Adriatic, Liverpool, 5 cs.  
 Tamm & Co., E. Importer, Rotterdam, 16 cs.  
 Sinclair Valentine Company, Mt. Clinton, Hamburg, 24 cs.

### FILTER PAPER

G. Lueders & Co., Ontario, Bordeaux, 10 bls.  
 R. F. Downing & Co., Mesaba, London, 6 bls.  
 H. Keene-Angel & Co., Mesaba, London, 6 cs.

### DRAWING PAPER

H. Reeve-Angel & Co., Mesaba, London, 16 cs.  
 A. Giese & Son, Ontario, Bordeaux, 8 bls.

### WRAPPING PAPER

Wilkinson Bros. & Co., Olen, Rotterdam, 45 bls.

### PACKING PAPER

Republic Bag & Paper Co., E. Importer, Rotterdam, 1281 rolls.

### WALLPAPER

A. Murphy & Co., Mesaba, London, 2 bls.

### PAPERHANGINGS

W. H. S. Lloyd & Co., Mesaba, London, 13 bls.  
 W. H. S. Lloyd & Co., Mesaba, London, 4 cs.

### PAPER

Miller Paper Co., Fred. VIII, Sopenhagen, 20 bls.  
 Irving National Bank, by same, 33 bls.  
 M. O'Meara Company, by same, 212 bls.  
 Chemical National Bank, by same, 218 bls.  
 Chemical National Bank, by same, 1058 rolls.  
 Thos. Nevin, Mesaba, London, 3 cases.  
 Irving National Bank, Yareck, Bremen, 529 bls.  
 The Bain Board Lining Co., by same, 147 bls.  
 E. C. Melby, by same, 211 bls.  
 The L. Schulman Co., by same, 88 bls.  
 Elans Winkrank Co., Inc., by same, 20 bls.  
 H. Reene Angel & Co., by same, 5 bls.  
 Birn & Wachenheim, by same, 101 bls.  
 American Woodpulp Corp., by same, 234 bls.  
 Parsons & Whittemore, by same, 188 bls.  
 Agar Berusson Corp., by same, 305 rolls.  
 Birn & Wachenheim, America, Bremen, 99 bls.  
 Kern Commercial Co., Ryndam, Rotterdam, 87 cases.  
 Japan Paper Company, by same, 60 cases.  
 F. C. Strype Company, Adriatic, Liverpool, 1 case.

### RAGS, BAGGINGS, ETC.

E. J. Keller Co., Inc., E. Importer, Rotterdam, 12 bls. rags.  
 E. J. Keller Co., Inc., E. Dawn, Antwerp, 153 bls. flax waste.  
 E. Butterworth & Co., E. Dawn, Antwerp, 44 bls. bagging.

Castle, Gotthel & Overton, E. Dawn, Antwerp, 44 bls. rags.  
 E. J. Keller Co., Inc., Mt. Clinton, Hamburg, 63 bls. rags.  
 Irving Nat'l Bank, Ontario, Bordeaux, 469 bales rags.

Castle, Gotthel & Overton, by same, 203 bales rags.  
 Irving National Bank, Persier, Antwerp, 36 bls. flax waste.  
 Parsons & Wittemore, W. Inskip, Rotterdam, 301 bls. rags.

American Express Company, Mesaba, London, 343 bls. rags.  
 F. P. Gaskell & Co., Yareck, Bremen, 57 bls. rags.  
 E. Butterworth & Co., Anaconda, Antwerp, 231 bls. bagging.

R. F. Downing & Co., by same, 55 bls. rags.  
 E. J. Keller Co., Inc., Kroonland, Antwerp, 370 bls. flax waste.  
 Katzenstein & Keene, Venusia, London, 322 bls. paper stock.

W. L. Cromie Co., K. Templar, Shanghai, 86 bls. cotton waste.  
 Pearson Brown Co., by same, 32 bls. cotton waste.  
 E. J. Keller Co., Inc., America, Bremen, 116 bls. rags.

Mechanics & Metals National Bank, Columbia, Glasgow, 16 bls. rags.  
 Katzenstein & Keene, Noordam, Rotterdam, 102 bls. rags.  
 Dexcar Trading Company, Wells City, Bristol, 415 bls. rags.

P. Berlowitz, Ryndam, Rotterdam, 338 bls. paper stock.  
 Chemical National Bank, by same, 304 bls. paper stock.  
 E. Butterworth & Co., Adriatic, Liverpool, 136 bls. paper stock.

National City Bank, by same, 52 bls. thread waste.

### OLD ROPE

S. D. Harrison, Eastern Guide, Cork, 197 coils.  
 W. Steck & Co., Ryndam, Rotterdam, 21 pgs.  
 N. E. Berzen, by same, 4 pgs.  
 Brown Bros. & Co., Wells City, Bristol, 162 coils.

Brown Bros. & Co., by same, 31 bls.  
 E. J. Keller Co., Inc., Chicago City, Bristol, 90 coils.  
 E. J. Keller, Kroonland, Antwerp, 117 coils.

Katzenstein & Keene, Mesaba, London, 146 coils.  
 Ellerman Wilson Lines, by same, 88 coils.  
 E. J. Keller Co., Inc., Fred. VIII, Copenhagen, 140 coils.  
 E. J. Keller Co., Inc., by same, 53 bls.

E. J. Keller Co., Inc., Graciana, Leith, 106 coils.  
 R. F. Downing & Co., Olen, Rotterdam, 89 coils.

### WOODPULP

Tidewater Papermills Co., Barneholm, Murray Bay, 1374 tons bulk.  
 Tidewater Papermills Co., G. C. Hogg, Parsboro, N. S., 7521 bls., 752 tons.  
 Castle, Gotthel & Overton, Ryndam, Rotterdam, 381 bls.

Johaneson Wales & Sparre, Inc., Santa Olinia, Gefte, 400 bls., 50 tons.  
 A. J. Pagel & Co., Inc., by same, 2625 bls., 525 tons.  
 A. J. Pagel & Co., Inc., Santa Olinia, Hornefors, 7200 bls., 1200 tons.

A. J. Pagel & Co., Inc., Santa Olinia, Hosium, 3000 bls., 500 tons.  
 A. G. Pagel & Co., Inc., Santa Olinia, Domsjo, 2250 bls., 375 tons.  
 American Woodpulp Corp., W. Inskip, Rotterdam, 920 bls., 187 tons.

R. F. Hammond, Eastern Breeze, Gothenburg, 500 bls., 100 tons.

### CASEINE

Atterbury Bros., Pan American, Buenos Aires, 500 bags.

## PHILADELPHIA IMPORTS

Week Ending June 17, 1922

E. J. Keller Co., Inc., Ontario, Bordeaux, 538 bls. rags.  
 Mechanics & Metals National Bank, by same, 40 bls. rags.  
 Hudson Trading Co., Maryland, Hamburg, 30 rolls news print.

Rohm & Haas, Maryland, Hamburg, 759 bgs. wood flour.  
 Castle, Gotthel & Overton, Hoosac, London, 135 bls. waste paper.  
 Castle, Gotthel & Overton, by same, 124 bls. rags.

E. J. Keller Co., Inc., Ninian, Antwerp, 105 bls. new rags.  
 E. J. Keller Co., Inc., Ninian, Antwerp, 1374 bls. old rags.  
 E. J. Keller Co., Inc., Oregonian, Hamburg, 141 bls. rags.

Katzenstein & Keene, M/C Civilian, Liverpool, 23 bls. new cuttings.  
 Katzenstein & Keene, Mahapac, London, 99 bls. new cuttings.  
 Katzenstein & Keene, Western Scout, Hamburg, 277 bls. rags.

Katzenstein & Keene, Ontario, Havre, 1219 bls. rags.  
 Katzenstein & Keene, Ontario, Bordeaux, 167 bls. rags.

## BOSTON IMPORTS

Week Ending June 17, 1922.

T. M. Duche & Son, Bonheur, Buenos Aires, 834 bgs. casein.  
 A. J. Pagel & Co., Inc., Santa Olinia, Oruskoldsvik, 4350 bls. wood pulp, 725 tons.  
 Equitable Trust Company, by same, 738 bls. wood pulp, 105 tons.

Castle, Gotthel & Overton, Breedyk, Rotterdam, 135 bls. wood pulp.  
 Hudson Trading Co., Callisto, Hamburg, 35 rolls, news print.  
 First National Bank of Boston, Vasconia, London, 138 bls. rags.

American Express Company, by same, 311 bls. waste paper.  
 Katzenstein & Keene, Median, Liverpool, 108 bls. new cuttings.  
 Katzenstein & Keene, Ninian, Antwerp, 174 bls. rags.

## BALTIMORE IMPORTS

Week Ending June 17, 1922.

A. J. Pagel & Co., Inc., Santa Olinia, Cruskoldsvik, 4960 bls. wood pulp, 860 tons.  
 M. Gottesman & Co., Inc., Maryland, Gothenburg, 180 bls. wood pulp.

R. F. Hammond, E. Breeze, Gothenburg, 750 bls. wood pulp, 150 tons.  
 Castle, Gotthel & Overton, Barbadian, London, 63 bls. waste paper.  
 E. J. Keller Co., Inc., Hudson, Havre, 365 bls. rags.

E. J. Keller Co., Inc., by same, 230 bls. bagging.  
 Hudson Loading Co., Chappaqua, Hamburg, 136 rolls news print.

## NORFOLK IMPORTS

Week Ending June 17, 1922

Hudson Trading Co., Chappaqua, Hamburg, 84 rolls news print.

## RICHMOND, VA., IMPORTS

Week Ending June 17, 1922.

Virginia Paper Co., Yareck, Bremen, 234 bls. paper.

## NASHUA, N. H., IMPORTS

Week Ending June 17, 1922

Nashua Gummed & Coated Paper Co., Yareck, Bremen, 106 bls. paper.

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## Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,  
WEDNESDAY, JUNE 21, 1922.

**ALUM.**—Despite the slack demand, alum continues to move regularly, though slowly. It is quoted at 3.90 cents a pound for powdered, 3.65 for ground and 3.50 for lump.

**BLEACHING POWDER.**—Bleach production has slowed down appreciably in the last few weeks and was practically at a standstill during the past week at the quoted price of 1.60 cents a pound.

**BLANC FIXE.**—The ample supplies of this commodity on hand, coupled with the light demand with the coming of summer, has brought about a slight price recession, quotations now ranging from \$37.50 to \$45 a ton on the pulp and 3.50 to 3.75 cents a pound on the dry blanc fixe.

**CASEIN.**—Dealers report that it is practically impossible to secure a sizable quantity of Argentine casein at the present time, and due to the fact that all the available casein on the domestic market went into consuming channels simultaneously with the announcement of the Senate's ratification of the proposed tariff on the commodity, there is not sufficient casein being turned over to demonstrate a market price. Quoted prices range from 10 to 14 cents a pound and may be viewed as nominal.

**CAUSTIC SODA.**—At the slightly stiffer price of 3.40 to 3.50 cents a pound, probably occasioned by the diminishing of stocks on hand coincident with the summer curtailment of production, caustic soda is fairly active.

**CHINA CLAY.**—Not a great deal of movement is noticeable in the china clay market, the following quotations holding firm: English clay, \$13 to \$18 per ton; washed domestic, \$8 to \$10; unwashed, \$6 to \$8.

**LIQUID CHLORINE.**—An irregular demand has brought about considerable competition in the chlorine market and the quotations of producers range from as high as 7 cents a pound, in cylinders of 100 pounds, to 4.50 cents for tank car shipments.

**ROSIN.**—Grades E, F, and G of rosin are still quoted at the unchanged price of \$5.20 for barrels of 280 pounds, and both foreign and domestic consumers are participating actively.

**SALTCAKE.**—Supplies of saltcake are running very low, and in view of the regular demand for this product the price is expected to stiffen still further. Quotations now range from \$20 to \$22 per ton for acid cake, while chrome cake is quoted at \$18.

**SATIN WHITE.**—At the quoted price of 1.50 to 2.00 cents a pound, satin white is in fair demand and stocks of the commodity are being depleted.

**SODA ASH.**—Due to the heavy export demand, the soda ash market has remained fairly firm despite local coal difficulties. At the quoted price of 1.50 cents a pound, works, a regular activity is in evidence.

**SULPHUR.**—Brimstone has not varied in the past week, the New York price still holding at \$18 to \$20 a ton.

**STARCH.**—Starch has been in good demand at the quoted figure of 2.47 cents a pound for bag quantities of the paper maker's grade and 2.75 for barrel lots. Pearl starch is listed at 2.37 and 2.65 for these respective amounts.

**SULPHATE OF ALUMINA.**—Western competition and slack demand have held the prices on this commodity in the neighborhood of 1.40 to 1.50 cents a pound, works. Iron-free sulphate ranges from 2.15 to 2.35 cents, and some shading has been in evidence.

**TALC.**—Europe has been consuming considerable quantities of talc of late, and this may account, to a certain degree, for the firming of the domestic market. The product is still quoted at \$15 to \$17 a ton and the progress of the market is similar to that of China clay.

## Market Quotations

(Continued from page 63)

Solid Ledger Stock.	2.25	@	2.50
Writing Paper.....	1.80	@	2.00
No. 1 Books, heavy.	1.60	@	1.75
No. 2 Books, light.	1.40	@	1.50
No. 1 New Manila.	2.75	@	3.00
No. 1 Old Manila..	1.50	@	1.75
Container Manila..	1.00	@	1.10
Old Kraft.....	2.00	@	2.25
Overissue News...	.75	@	.80
Old Newspaper....	.50	@	.60
No. 1 Mixed Paper.	.45	@	.50
Common Paper....	.40	@	.50
Straw Board, Chip.	.40	@	.45
Binders' Bd. Chip.	.40	@	.45
Domestic Rags—New.			
Price to Mill, f. o. b. Phila.			
Shirt Cuttings—			
New White, No. 1	.09 1/4	@	.09 3/4
New White, No. 2	.05	@	.06
Silecias, No. 1...	.04 1/2	@	.05
New Unbleached.	.08 1/2	@	.08 3/4
Washables.....	.03	@	.03 1/2
Fancy.....	.04 1/2	@	.05
Cottons—according to grades—			
Blue Overall....	.04	@	.04 1/2
New Blue.....	.02	@	.02 1/2

New Black Soft.	.03	@	.03 1/4
New Light Sec-			
onds.....	.02	@	.02 1/4
Khaki Cuttings...	.02 1/4	@	.03 1/4
Corduroy.....	.02	@	.02 1/4
New Canvas.....	.07	@	.07 1/2
New Black Mixed	2.75	@	3.00
Old			
White, No. 1—			
Repacked.....	.06	@	.06 1/4
Miscellaneous...	.04 1/2	@	.04 3/4
White, No. 2—			
Repacked.....	.03	@	.03 1/4
Miscellaneous...	.02 1/4	@	.02 3/4
Thirds and Blues—			
Repacked.....	1.65	@	1.80
Miscellaneous...	1.40	@	1.55
Black Stockings...	1.75	@	2.25
Roofing Stock—			
No. 1.....	.90	@	1.00
No. 2.....	.80	@	.90
No. 3.....	.70	@	.80
No. 4.....	.70	@	.80
No. 5A.....			nominal
B.....			nominal
C.....			nominal

### BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper			
Bonds.....	.06 1/4	@	.31
Ledgers.....	.07 1/2	@	.22 1/2
Writings.....	.07 1/2	@	.22 1/2
Superfine.....	.15	@	.22 1/2
Fine.....	.15	@	.18
Books, S. & S. C.	.07	@	.10
Books, M. F.	.06 1/2	@	.07 1/2
Books, coated.	.08	@	.10
Label.....	.08 1/2	@	.09 1/2
News sheets.....	3.75	@	—
News, rolls.....	3.50	@	—
Manila—			
No. 1 Manila...	\$6.75	@	—
No. 1 Fibre.....	.07 1/2	@	—
No. 1 Jute.....	8.50	@	8.75
Kraft Wrapping...	.06 1/4	@	.07
Common Bogus...	3.00	@	—

### Boards

(Per Ton Destination)			
Chip.....	\$35.00	@	\$37.50
News, Vat Lined...	36.50	@	38.50

Wood, Vat Lined..	47.25	@	—
Filled News Board..	37.50	@	—
Solid News Board..	42.00	@	45.00
S. Manila Chip.....	52.50	@	—
Pat. Coated.....	70.00	@	75.00

### Old Papers

Shavings—			
No. 1 Hard White	3.70	@	3.90
No. 1 Soft White	3.30	@	3.45
No. 1 Mixed.....	1.50	@	1.75
Ledgers & Writings	.03 1/4	@	—
Solid Books.....	1.85	@	2.10
Blanks No. 1.....	1.30	@	1.45
No. 2 Books Light.	.60	@	.70
Folded News, over-			
issues.....	\$11.25	@	\$12.50
Mixed paper.....	47.50	@	50.00
Gunny Bagging....	.70	@	.75
Manila Rope.....	4.25	@	4.50
Common Paper....	.35	@	.40
Old News.....	.80	@	.80
Old Kraft.....	1.75	@	1.80

### TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper			
(Mill Prices to Jobbers f. o. b. Mill)			
Bond—			
Sulphite.....	.11	@	.12 1/4
Light tinted....	.12	@	.13 1/4
Dark tinted....	.13 1/4	@	.15
Ledgers (sulphite).	—	@	.13
Writing.....	.10 1/4	@	.13 1/4
News, f. o. b. Mills—			
Rolls (carloads).	3.50	@	—
Sheets (carloads).	—	@	4.25
Sheets (2 tons or over)	—	@	4.50
Book—			
No. 1 M. F. (car-	9.50	@	—
loads).....			
No. 2 M. F. (car-	8.50	@	—
loads).....			
No. 3 M. F. (car-	8.00	@	—
loads).....			
No. 1 S. C. (car-	10.00	@	—
loads).....			
No. 2 S. C. (car-	9.00	@	—
loads).....			
No. 1 Coated and	14.00	@	—
litho.....			
No. 2 Coated and	13.00	@	—
litho.....			
No. 3 Coated and	12.25	@	—
litho.....			
Coated and litho,	14.25	@	—
colored.....			
Wrapping—			
Grey.....	4.50	@	—
White Wrap....	5.00	@	—
"B" Manila.....	5.50	@	—
No. 1 Manila...	6.75	@	—
Fibre.....	6.75	@	—
Kraft, M. F.....	8.00	@	—
M. G.....	8.15	@	—

### Pulp

(F. o. b. Mill)			
Ground wood....	\$27.50	@	\$35.00
Sulphite easy bleach-	—	@	65.00
ing.....	60.00	@	60.00
Sulphite news grade.	50.00	@	60.00

Sulphite, bleached.	90.00	@	95.00
Sulphate.....	70.00	@	—

### Old Waste Papers

(In carload lots, f. o. b. Toronto)			
Shavings—			
White Env. Cut..	3.75	@	—
Soft White Book	—	@	—
Shavings.....	3.40	@	—
White Bl'k News	1.70	@	—
Book and Ledger—			
Flat Magazine and	—	@	—
Book Stock (old)	1.70	@	—
Light and Crum-	—	@	—
pled Book Stock	1.55	@	—
Ledgers and Writ-	—	@	—
ings.....	1.95	@	—
Solid Ledgers....	1.95	@	—
Manilas—			
New Manila Cut.	1.70	@	—
Printed Manilas.	.90	@	—
Kraft.....	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News....	.80	@	—
No. 1 Mixed Pa-	—	@	—
pers.....	.60	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto.			
Per lb.			
No. 1 White shirt	—	@	.10
cuttings.....	.09 1/4	@	
No. 2 White shirt	—	@	.05 1/4
cuttings.....	.05 1/4	@	
Fancy shirt cut-	—	@	.04 1/4
tings.....	.04 1/4	@	
No. 1 Old whites	—	@	.04
Thirds and blues	.02	@	.02 1/4
Per cwt.			
Black stockings..	2.00	@	2.25
Roofing stock:			
No. 1.....	1.35	@	—
No. 2.....	1.20	@	—
Roofing stock:			
Manila rope.....	.05	@	.05 1/4
No. 2.....	.01 1/4	@	—
Gunny bagging....	1.00	@	1.25



*The Home of Quality*



FACTORY  
132<sup>ND</sup> TO 133<sup>RD</sup> ST & BROOK AVE

# PAPER BAGS

Sacks and Specialties

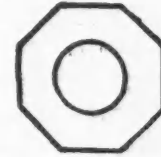
ESTABLISHED 1901

## SCHORSCH & CO.

Manufacturers

500 East 133d Street : New York

This Registered Trade  
Mark Octagon



on a Paper  
Bag Vouches for  
Its Good Quality

# Buchanan & Bolt Wire Company

ESTABLISHED 1878 AT HOLYOKE, MASS.

Makers of Highest Grade Fourdrinier Wires, Dandy Rolls, Cylinder Covers, Brass Wire Cloth  
of all Meshes for Paper, Pulp and Coating Mills—Quality Guaranteed

We make a specialty of Fine Wires for Magazine and Book Papers

## Felt Test—Lowest Cost per Ton

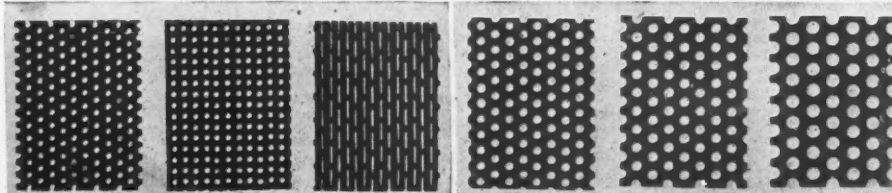
If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They “stand up” under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

**THE ORR FELT & BLANKET COMPANY, Piqua, Ohio**

## PERFORATED METALS

All sizes  
and  
shapes  
of Holes



All kinds  
and  
thicknesses  
of Metal

For Centrifugal and Rotary Screens, Drainer Bottoms, Filter Plates, Pulp Washers, etc.

### The Harrington & King Perforating Company

618 No. Union Ave., Chicago, Ill., U. S. A.

New York Office, 114 Liberty St.

# WANT AND FOR SALE ADVERTISEMENTS

## CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, \$1.00.

**SITUATION WANTED**, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

**HELP AND MISCELLANEOUS WANTS**, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

## HELP WANTED

**WANTED**—One Beater Man and one Machine Tender in New York State Mill, making writing paper and colors. Good position for right party. No labor troubles. Address, Box 5189, care Paper Trade Journal. Je-22

**WANTED**—Two first class Beater Men for Box Board Mill. Give age, references, experience and where last employed. Address, Box 5190, care Paper Trade Journal. Je-22

**WANTED**—Young man to act as Business Manager for Toilet and Tissue Mill. Send copies of references and state experience, especially if have had sales experience. Address, Box 5191, care Paper Trade Journal. Jy-13

**SUPERINTENDENT WANTED** by modern progressive mill located in Middle West. Must be fully up to date on cylinder tissue, have some knowledge of converting, be good at handling help. Man not over 35 years old preferred. Applicant must state age, past and present connections, salary now receiving if employed and other information considered of interest to a prospective employer. Address, Box 5192, care Paper Trade Journal. tf

**WANTED**—Machine Adjuster and Tender. Man experienced on Potdevin Automatic Bag Machine. Apply stating experience to Box 5193, care Paper Trade Journal. Je-29

**WANTED**—Felt Mill Superintendent for California. Thoroughly experienced man on machine making Roofing Felt and Sheathing Paper. Capable of assisting in purchase and erection of new Mill and with ability to economically operate and secure maximum production after erection. Must be successful manager. Give complete experience in first letter. Address, Box 5194, care Paper Trade Journal. Jy-13

**SALESMAN WANTED** with established trade on printing papers, to invest from \$1,000 to \$3,000 with services, with newly organized jobbing house. Have good connections on M. F. Supers, Coated, Bonds, etc. Address, Box 5204, care Paper Trade Journal. Je-22

**WANTED**—Super Calendar Men and Back Tenders on fast running book machine. Good wages. Address, Box 5205, care Paper Trade Journal. Je-29

**SALESMAN** to represent large reputable New York coarse paper jobber, any part of Eastern States. Good opportunity for party with established trade. Address, Box 5206, care Paper Trade Journal. Je-22

**SALESMAN** wanted by New York Paper Jobbing House, must have established trade. Good opportunity for right man. Drawing account on commission basis. Address, Box 5207, care Paper Trade Journal. Je-22

## HELP WANTED

**WANTED**—One first class four Cylinder Machine Tender. Experienced with various weights and thicknesses. Must also understand Harper Machine. Steady work. Eight hour tours. Good pay. Address, Box 5208, care Paper Trade Journal. Jy-6

**BOOK PAPER MILLS** in the vicinity of Philadelphia is in the market for sales-manager, familiar with the Book Trade. Applicants, address, Box 5210, care Paper Trade Journal, giving age, experience, and previous connections. Je-29

**WANTED**: Outside Paper Salesman, prefer one familiar with fine papers. State experience, where, when and with whom employed. Address, C. F. Earl, care M. J. Earl, Reading, Pa. Je-22

**NIGHT SUPERINTENDENT** wanted for one machine board mill manufacturing .009 straw and straw board and chip board for set-up box work. Middle aged married man preferred. State salary and also references in your first letter. Mill located in the South. Address, Box 5138, care Paper Trade Journal. Je-22

**WANTED**: First class machine tender and back-tender, experienced on felt and asbestos papers. Sober, industrious men. References, age, married or single in first letter. Address, Box 5169, care Paper Trade Journal. Jy-13

**TWO BACKTENDERS** wanted for Pacific Coast Mill. Excellent opportunity for advancement. Three tours. Good wages. Address, Box 5170, care Paper Trade Journal. Jy-6

**WANTED**: A good machine tender with experience on cylinder machines making old rope paper. Steady work for the right man. Address, Box 5171, care Paper Trade Journal. tf

**WANTED**: Immediately two experienced sulphite cooks. Give details of experience and references. Address, Box 5174, care Paper Trade Journal. Je-22

**WANTED**: Beaterman, middle age man preferred. One used to beating 1" aft and Bond Paper. One Sheet Man, one Kidder Pressman, one Back-Tender. State experience and wages expected. Address, Box 5175, care Paper Trade Journal. Je-29

## SITUATIONS WANTED

**WANTED**—Position as Assistant Superintendent. Twenty years' experience on Fourdrinier machines making rag and sulphite papers. Married and industrious. Good references. Address, Box 5196, care Paper Trade Journal. Jy-6

**A MAN** thoroughly competent to run Calendar and Press Roll Grinding Machine and able to determine Crowns desired. Wishes permanent or temporary work. Address, Box 5197, care Paper Trade Journal.

**BOSS FINISHER** desires to make a change. Twelve years of Finishing Department experience on Cutters, Trimmers, Kidder Press Rewinder all styles of finishing domestic and export on Wrappings, Tissue and Glassine. Capable of taking full charge of finishing and shipping department, also inventory. Can furnish good references as to ability, character and personality. Address, Box 5198, care Paper Trade Journal. Jy-13

**SITUATION WANTED** by first class Cylinder Machine Tender. Married, steady and reliable. Can furnish references. Address, Box 5199, care Paper Trade Journal. Je-22

**SUPERINTENDENT** desires position as Corrugated and Fibre Superintendent. Nine years' experience, thoroughly familiar with all makes, Comblers and swift Combination Machines. Address, Box 5200, care Paper Trade Journal. Jy-13

## SITUATIONS WANTED

**MASTER MECHANIC** with 27 years' Pulp and Paper Mill experience is open for engagement, familiar with Boilers, Engines, Electrical and General Maintenance. First class references. Address, Box 5201, care Paper Trade Journal. Jy-20

**MAN** with ten years' practical experience in sulphate pulp manufacture is open for position as Superintendent or Assistant. Can obtain highest results. Best of references. Address, Box 5202, care Paper Trade Journal. Jy-13

**I HAVE FOLLOWING** among important paper buyers in Cuba, Mexico and South America and wish to conduct export department with mill or large jobber. Will also consider domestic selling proposition with responsible mill. Have acquaintance among New York buyers. Address, Box 5211, care Paper Trade Journal. Je-22

**PAPER SALESMAN** in New York City who can produce a large volume of business with adequate co-operation, desires connection. Drawing account on Commission basis. Correspondence invited. Address, Box 4655, care Paper Trade Journal. tf

**WANTED POSITION**—As superintendent, Twenty-one years' experience; used to Specialties, Colors and Wrapping, all grades of Boards and Fibres. Knows how to handle help. Can keep up repairs. Used to Fourdrinier and Cylinder Machines. Address, Box 4786, care Paper Trade Journal. tf

**WANTED**: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. Je-22

**SUPERINTENDENT** of many years' experience in producing Box Boards is seeking a connection where quantity and quality production at a minimum cost will be recognized. Have best of references, for efficiency and maintaining harmony among employees. Address, Box 5117, care Paper Trade Journal. Jy-13

**SUPERINTENDENT** now employed as such work who had practical experience on Cylinder, Harper, Fourdrinier and Combination machines, well posted on nearly all grades of paper, also practical experience on ground wood and sulphite, also mill construction and upkeep of same. Past records show good results. Would prefer commission proposition, also invest capital with reputable company. Address, Box 5132, care Paper Trade Journal. Jy-6

**WANTED**—Position as Superintendent or Assistant Superintendent. Fifteen years' experience, used to box board, container board, color and straw. Knows how to handle help and keep up repairs. Good references. Address, Box 5167, care Paper Trade Journal. Je-22

## General Superintendent OR Manager

now employed will be open for position after July 15th. Experience covering a variety of products, including High Grade Book, Envelope, Bonds, Ledger, Writings, and Specialties. Would like to communicate with concern planning such a change in their organization. Address, Box 5195, care Paper Trade Journal. Jy-13.

## SITUATIONS WANTED

**YOUNG MAN**, 25, married, wishes to connect with Paper Mill. Has had experience in Paper Mill cost accounting, payrolls and mill systems; also selling experience. At present calling on printers and publishers. Feels qualified to fill almost any inside position or be useful in Sales Department. Address, Box 5145, care Paper Trade Journal. Jy-13

**SULPHATE AND SODA PULP** and Paper Maker, open for new connections, as Manager or General Superintendent. Fully experienced in details of construction, chemical control, and mechanical equipment. Successful in handling labor problems. Address, Box 5158, care Paper Trade Journal. Je-22

**GRADUATE MECHANICAL ENGINEER**, aged 36, desires position as Plant Engineer or Assistant Superintendent, where maintenance and improvements, relating to plant as well as production, would be chief duties. Thoroughly familiar with paper working and printing machinery. Address, Box 5159, care Paper Trade Journal. Je-22

**MILL MANAGER** of several years' experience, will be open for position on August 1, with concern that can offer good future to ambitious and capable man. Wide experience on cylinder and fourdrinier machines making rope, jute, and wood specialties. References sent on request. Address, Box 5163, care Paper Trade Journal. Je-22

**WE INVITE** able, practical, paper mill men who have funds to invest in a mill property, and who wish to be in active management, to correspond with us. We have two good sized mills for sale whose chief owners are aging, and who are willing to sell their properties outright, or a controlling interest only, to capable men of high standing who know the business thoroughly. We are handling this business confidentially for the owners and will do likewise for prospective buyers. Gibbs Brewer Co., 261 Broadway, New York. 166 W. Jackson St., Chicago, Ill. Je-29

**SUPERINTENDENT** of ability open for position with good company. Eighteen years practical experience making tissues, all grades, waxing tissues, white and colored, semi crepe, plain and colored crepe papers, all grades twine and carpet fibres, test papers. A No. 1 on colors. I am rated as a high grade man on kraft and kraft specialties. Fourdrinier and Cylinder Machines. First class references. Address, Box 5166, care Paper Trade Journal. Je-22

**BEATER ENGINEER** wishes to make a change from his present position. Experienced on high grade Box Boards, Tests, etc. Also fine papers. Married, sober. Good references. Address, Box 5167, care Paper Trade Journal. Jy-6

**SUPERINTENDENT - MANAGER** Wants position. Twenty years' experience on all grades paper. Expert on colors. Fourdrinier and cylinder machines. Best references. Address, Box 4988, care Paper Trade Journal. Je-22

**POSITION WANTED** by Beaterman, one who is experienced in the making of all grades of paper. Address, Box 5176, care Paper Trade Journal. Je-22

**OPEN: SUPERINTENDENT** of ability, all grades box, container, wall, bristol boards, covers, middles, index and cylinder papers. Expert on de-inking, upkeep and results. Will go any place. Address, Box 5177, care Paper Trade Journal. Jy-6

**PRACTICAL PAPER MAKER** desires connection with Board or Specialty Mill. Experience in all departments, Manufacturing, Power Plant, Maintenance and Repair, Shipping and Receiving. Familiar with routine of large office. Address, Box 5178, care Paper Trade Journal. Je-29

**EXECUTIVE ABILITY.** Eighteen years experience in Asphalt Roofing Business, desires position as manager or superintendent. Can furnish excellent references. Would consider opening in other lines. Not afraid of work. Address, Box 5179, care Paper Trade Journal. Je-29

## SITUATIONS WANTED

**ACCOUNTANT:** Systems installed for 2,500 accounts, \$300,000 sales; jobber in city of 85,000; seven years. Can handle double this volume of accounts with accuracy. Efficient supervision of expenses, sales and credits. Expert buyer paper products, twine, stationery, toys, general merchandise and store fixtures. Address, Box 5180, care Paper Trade Journal. Je-29

**A PAPERMAKER** of ability knows paper from A to Z, number of years jobbing experience, as Manager and Buyer, Paper, Twine and Cordage, desires to connect with a reliable House in a similar capacity, high grade references. Address, Box 5185, care Paper Trade Journal. Je-29

**WANTED:** Position as Mill or Box Plant Manager by Competent Executive. Experienced in manufacture of Box Boards, Folding Cartons and Solid Fibre Cases. Address, Box 5113, care Paper Trade Journal. Je-29

## FOR SALE

## FOR SALE

- 2—Chilled Calender Rolls 12" diameter, 88" face.
  - 1—3-drum Downingtown Reel.
  - 2—Wilbraham-Green Vacuum Pumps.
  - 1—36" Diameter, 92" Face Cylinder Mold.
  - 1—Clafin Engine, with new filling.
  - 1—200 H.P. General Electric Motor. (Used two months.)
  - 1—14x36 Cooper-Corlies Engine.
  - 1—15½x27 Buckeye Engine.
- In order to move, will quote very attractive price. Address, Box 177, Coshocton, Ohio.

## MISCELLANEOUS

## To Manufacturers

What have you to offer?

We have a large sales force and must keep busy.

We can dispose of your products. We require immediately various grades.

Straight transactions, no commissions. Address Box 5188, care Paper Trade Journal. Je-22

## MISCELLANEOUS

## UNIVERSITY OF MAINE

Pulp and Paper Summer School  
June 26 to Aug. 5, inclusive

Lectures on raw materials, modern pulp and paper making, costs, use of libraries, etc. Mill visits. Laboratory work in pulp making, pulp bleaching, paper testing and analysis, advanced studies of sulfite process, etc. Calculations; preparation of soda and sulfite solutions, cooking in soda and sulfite digesters, determination of yields and efficiency, testing of pulps and papers, physical, microscopical and chemical methods of paper testing, etc. Other chemical subjects as usual. Five days' work weekly. Recreation: tennis, fishing, motor-ing, swimming, canoeing, etc. Combine education with a vacation in Maine. Expenses: Tuition, \$20 or \$25; board and room, \$9 per week. Laboratory fees, \$16.

For further information, pamphlet, etc., address Chemistry Department, University of Maine, Orono, Me.

J-22

## Rebuilt Paper Mill Machinery

## IN STOCK AND GUARANTEED

Not Where Is and As Is

- FOURDRINIER TISSUE MACHINE—One 96", one 68".
- FOURDRINIER PARTS—Pusey & Jones 118", 100", Kutter Trowbridge 96".
- PRESS PARTS FOR PAPER MACHINES—Pusey & Jones bell crank housings with rolls 18"x117", Black & Clawson swing arm housings with rolls.
- DRYERS—Four 48"x111", thirteen 36"x95", four 48"x68", one 84"x67", eleven 42"x66".
- CHILLED CALENDERS—One 72" five roll; one 66" five roll; one 54" five roll; two 58" six roll.
- DILLON DOCTORS—For Machine Calenders 60" to 120" face.
- SLITTERS AND WINDERS—One 120" Warren, one 108", 36" Kidders.
- REELS—Pusey & Jones two drum upright 48" to 114".
- BEATERS—Five 72"x42" Noble & Wood; one Dilts 62"x50" iron tub; one Jones 62"x52"; seven Horne 36"x36"; three Downingtown iron tub 54"x42"; one Dillon 60"x48" wood tub; one Dilts 50"x42" wood tub; one Emerson 53"x52" wood tub. Two No. 2 Clafins, two No. 1 Clafins. Two Emerson 54"x60" wood tub.
- JORDANS—One Wagg Majestic, two No. 2 Dillon Improved, one Large Horne, three Monarch, one Jones Standard, two Pope Brushing Engines.
- SCREENS—One 12 plate, six 10 plate open side Packer, two 6 plate, one Moore & White auxiliary.
- STUFF PUMPS—Deane triplex 9"x8", Gould triplex 8"x10", Sandusky triplex 4"x6", 2-6" post.
- REVOLVING SHEET CUTTERS—Five 61" Hamblet, four 61" Finlay, one 50" Hamblet diagonal, one 42" Finlay.
- REAM CUTTER—One 48" Acme.
- SUPER CALENDERS—One 45", one 42", one 36" Holvake.
- WET MACHINES—Four 72" Bagley & Sewall Hydraulic. 1-52".
- ROTARY BOILERS—Two 8"x20".
- One Manistee Hog Chipper.

We have a large number of pumps and over five hundred calender, press and couch rolls in stock.  
**FRANK H. DAVIS COMPANY**  
175 Richdale Ave., Cambridge 40, Mass.



## FOR SALE

## FOR SALE

A partially dismantled paper mill. Good location. 400 H.P. Water Power. Permanent flow of pure Spring Water. Price extremely low. Unusual opportunity. Address, P. O. Box 366, Holyoke, Mass. Je-29

FOR SALE—2 No. 1 Clafin Engines. Complete triple-deck frames for 44 dryers. 6 Farnum Drives. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

FOR SALE: One Dietz Toilet Machine, will handle 76" Jumbo Rolls, cut sheets 4½ x 5. Machine has no slitter bars, but have slitters. Address, Box 5135, care Paper Trade Journal. Je-22

## FOR SALE

## PAPER MILL MACHINERY FOR SALE:

1—Morris Pump No. 4, Single Horizontal, Centrifugal Pump, 5" suction, 4" discharge. 1—Ball Engine 12" x 15", horizontal 36" x 12". 1—Ingersoll-Rand Compressor 10" x 10". 1—Stilwell-Pierce-Smith Compressor 10" x 10". 1—Beggs Engine 11" x 15" horizontal. 3—Morton Poole iron tub Beaters, 1,000 lb. Umphertons 64" x 16". 2—Rice, Burton & Falls, wood tub Beaters, 511 lb. 1—Mills Beater, wood tub, 1,600 lb. Universal with 2 70 x 14" pulleys, direct power. 1—Clark rewriter, 44". 1—Waldron ribbing machine, 36". 1—Steel Tank 48" diameter. 1—Mixer 54" x 48" with agitator. 1—Century Motor, 5 HP, Single Phase, 60 Cycle. 1—Erie City Engine 18" x 22". Apply to French Process Cigarette Paper Mills, 170 Cornellison Avenue, Jersey City, New Jersey. Je-29

FOR SALE: 86" Fourdrinier Tissue Paper machine consisting of Packer Screen Fourdrinier, two Presses, twelve dryers, stack of calendars, reel and rewriter. This machine now running, but delivery could be made early in July. Address, Box 5181, care Paper Trade Journal. Je-29

## MISCELLANEOUS

MILL AGENT with New York Office handling Cartons and Paraffined Products in Greater New York and vicinity, is equipped to act as exclusive New York representative of mill manufacturing allied line or new Paper or Board Specialty. Address, Box 5203, care Paper Trade Journal. Je-23

MANUFACTURER of a novel paper specialty suitable for shopping bags and kindred lines, for shipping tags, for files and book covers, etc., desires to correspond with able distributors. Address, Box 5160, care Paper Trade Journal. Je-6

SWIFT, GEORGE W., JR., Designer and Manufacturer of Special Machinery for Manufacturing and Printing Paper Goods. Bordentown, N. J. 8-24-23

WANTED: Paper sheeter, Hamblet preferred, about 64" wide with roll stands and layboy; new or second-hand provided up to date and operation guaranteed. Advise full details and price. Address, Box 5183, care Paper Trade Journal. Je-22

AN EXCELLENT OPPORTUNITY is offered for some one to acquire an active as well as financial interest in important Paper Stock Company on the Pacific Coast, headquarters San Francisco, five branches. Principal requirements unimpeachable character and business experience. State amount available for investment. Address, Box 5183, care Paper Trade Journal. Je-15

## SHERMAN PAPER COMPANY

Manufacturers of Roll Newsprint

ENTIRE PRODUCT FOR 1922 CONTRACTED

Mills at  
Felts Mills, Great Bend and Lefebvre, N. Y.  
Main Office  
Trust Co. Building, Watertown, N. Y.

## FRANKLIN PAPER CO. HOLYOKE, MASS.

MANUFACTURERS OF

Index Bristols, White Bristol Blanks, Etc.

## The Pulp and Paper Trading Co.

21 East 40th Street New York City

DEALERS IN DOMESTIC CHEMICAL AND MECHANICAL PULPS AND PAPER

AGENTS FOR

J. &amp; J. Rogers Company, Ausable Forks, N. Y.

Ware Coated Paper Company, Ware, Mass.

Procter &amp; Gamble Distributing Co.

Mills at Augusta, Georgia, and Memphis, Tenn.

Canadian Kraft Limited, Three Rivers, Canada

Dealers in Wayagamack Kraft Pulp

EASTERN AGENTS of Sulphite Pulp. Made by Port Huron Sulphite &amp; Paper Co., Port Huron, Mich.

WE BUILD

## Head Gates and Gate Hoists

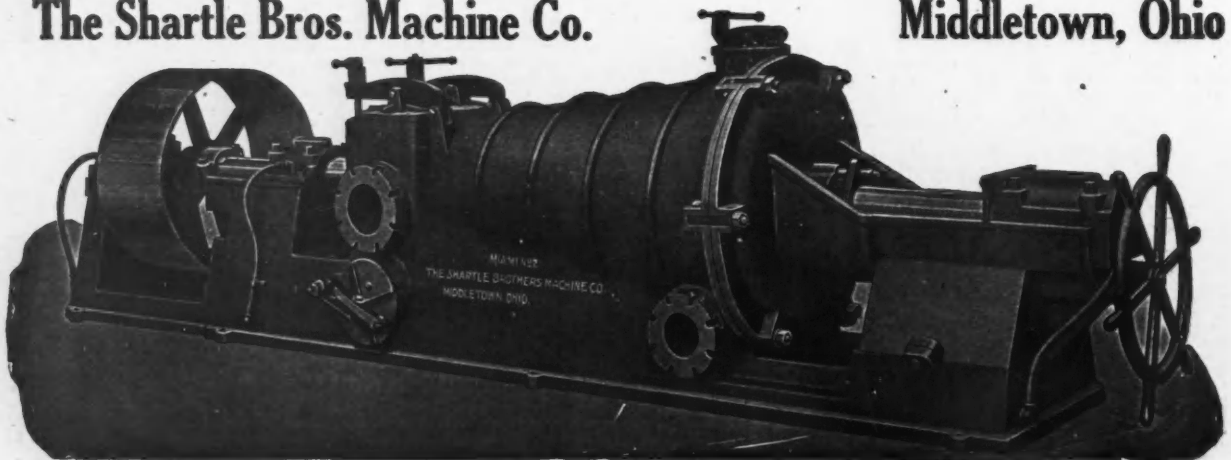
FOR ALL PURPOSES

Our Illustrated Catalogue Mailed Upon Request

DAYTON BEATER & HOIST CO.  
Dayton, Ohio

The Shartle Bros. Machine Co.

Middletown, Ohio





**EMERSON MANUFACTURING CO. LAWRENCE MASS.**



See the Second-Hand Machinery ads and note the ABSENCE of

**EMERSON BEATING ENGINES**

They seldom wear out and are never thrown out. PERFECT CIRCULATION. NO "PADDLING."

**The "EMERSON" JORDAN**

does its work with half the power required by others of no greater capacity.

WRITE FOR DETAILS

**WE** specialize in durable Fourdrinier Wires and Cylinder Wires in any metal desired up to and including 120 mesh in plain woven, double warp, triple chain, and twisted weaves.

Save two-thirds the cost and three-quarters of the expense of putting on brass and bronze wires by using our nickel alloy wires.

**Joseph O'Neill Wire Works**

Port Chester, N. Y.

Established 1906

**F. L. Smithe Machine Co. Inc.**

MANUFACTURERS OF

**ENVELOPE MACHINERY**

for making any style envelope, regular or special. Printed, stamp embossed and tissue lined envelopes.

Also die presses, tension machines, and metal clasp machines, and all other machinery used in manufacturing envelopes.

Designing, pattern making and machine work.

150 Eleventh Avenue, New York City, New York, U. S. A.

For reliable running and average long life

**Lindsay Fourdrinier Wires**

ARE UNSURPASSED

We make them for the largest and fastest machines. Cylinder Wires all sizes.

**The Lindsay Wire Weaving Co.**

COLLINWOOD STA.

CLEVELAND, OHIO

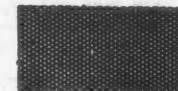
**Perforated Metal Screens**

For Pulp and Paper Mills

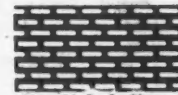
STEEL, COPPER, BRASS, BRONZE and other Alloys

punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

53-65 FAIRMONT AVE.



.065 Inch Round



1/4 x 1/4 Inch Slots

**CHARLES MUNDT & SONS**

JERSEY CITY, N. J.

**WILLIAM A. HARDY & SONS COMPANY, Fitchburg, Mass., U.S.A.**



**FREDERICK L. SMITH**  
21 EAST 40TH STREET, NEW YORK  
**PULP AND PAPER MILL  
ENGINEER**

**GEORGE F. DREW**

*MILL ARCHITECT AND ENGINEER*  
Consulting and Operating  
BRUNSWICK, MAINE  
**SPECIALTY: Pulp, Paper and Saw Mills**  
Cotton, woolen, worsted, cordage, silk mills, and their equipment.  
Appraisals, adjustments.

**E. BUTTERWORTH & CO., Inc.**

CHARLES H. WOOD, Pres. LEWIS JENNINGS, Treas.  
Boston Office, 136 Federal St. New York Office, 1123 Broadway  
**PAPER MAKERS' SUPPLIES**  
Agents for "S" Brand and Snow Brand Bleached Sulphite Pulp

**THOMAS L. TOMLINES & SON**  
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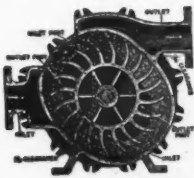
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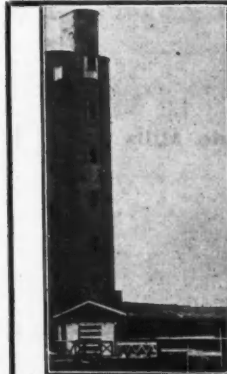
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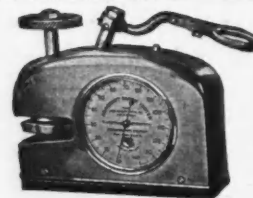
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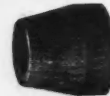
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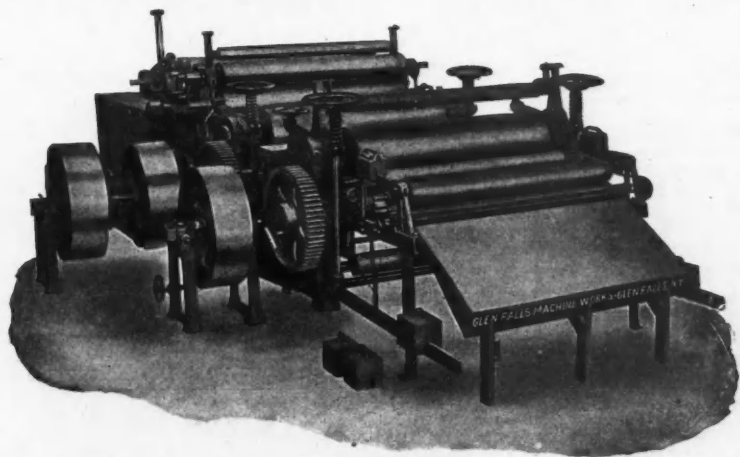


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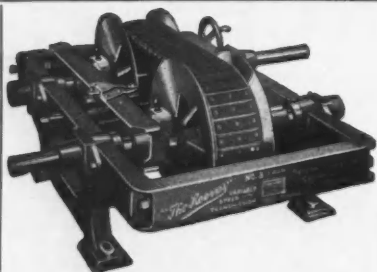
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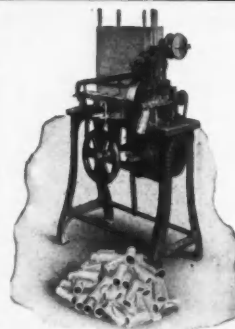
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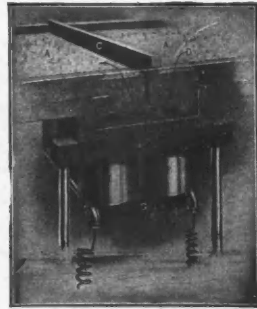
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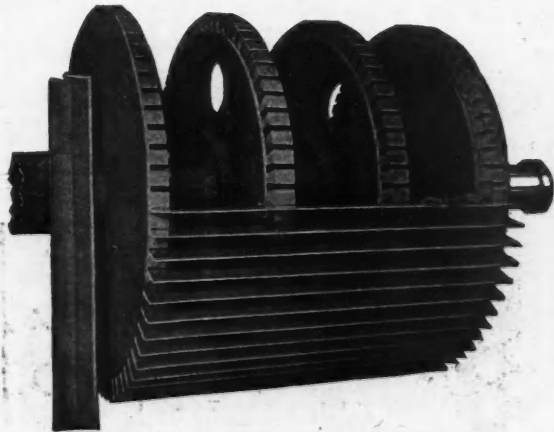


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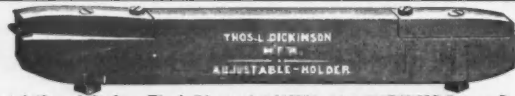
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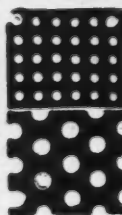
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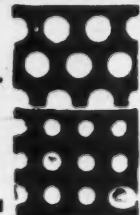
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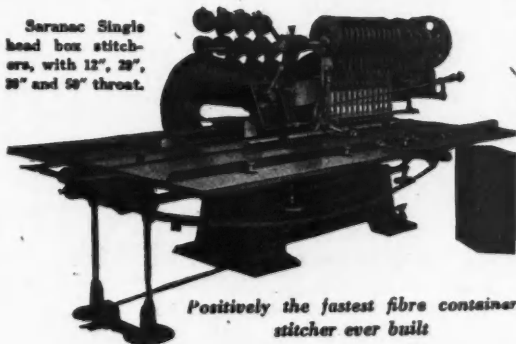
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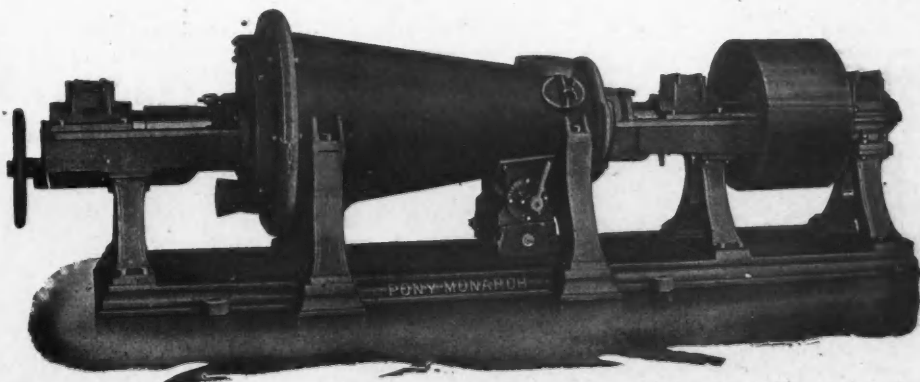
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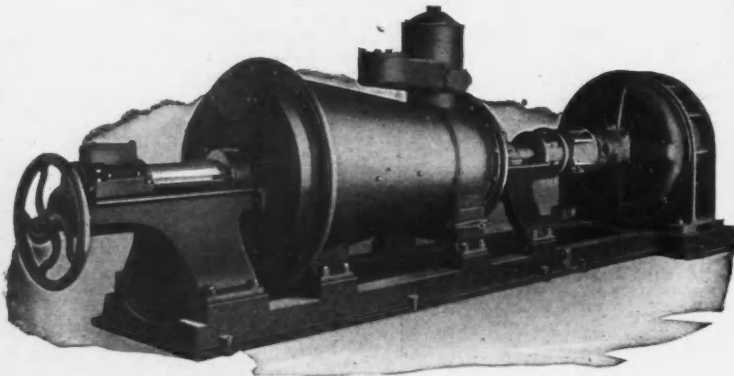
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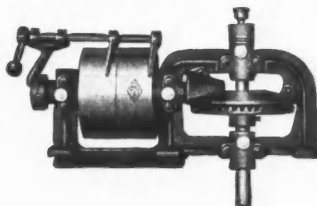
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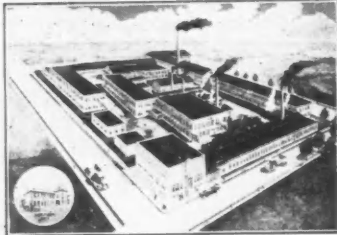
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