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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

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With Which Is Combined

Vol. LXXXI, No. 21 [redacted] Thursday, November 19, 1925

The Magazine of the Paper Industry

Belgo Paper and St. Maurice Under One Control

Consolidation Will Facilitate Administrative Cost Reduction and Operating Economies—Transaction Involves Assets of Approximately $43,000,000—Quebec's Proposed New Pulp Mill —Provincial Government Alters Terms of Lease Contracts for Harnessing Water Falls—New Wayagamack News Print Plant Nearly Ready for Operation

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 16, 1925.—The much-talked of merger between the Belgo-Canadian Paper Company and the St. Maurice Paper Company has been virtually completed, according to reliable reports. On the local exchange the stock of St. Maurice moved up 10 points to close at 103, which compares with the low for the year of 80, established on January 7, and Belgo common advanced 2 points to close at 100, while the low for this issue was also 80, established on August 12.

Details of the proposed plan are not yet in final form, but it is accepted that a new corporation will be formed to acquire the entire St. Maurice assets and to control the Belgo common stock ownership. Furthermore, it is entirely likely that any new financing will be done by the new parent company, and not by any of the components, as has been suggested in some quarters. M. B. Wallace, president of Union Bag and Paper, and also head of St. Maurice Paper, was in Montreal last week, while H. Biermans, president of Belgo, was here, during which visits final arrangements, it is understood, were discussed with J. H. Gundy, head of the organization responsible for the amalgamation.

An Enormous Canadian Transaction

The transaction will rank among the largest in Canada's industrial history, involving, as it does, assets in the neighborhood of $43,000,000. The deal brings together two of the large news print manufacturers of this country and, due to the fact that both are located in the St. Maurice Valley, there should be formed a natural consolidation, facilitating the reduction of administrative costs, as well as substantial economies in woods and logging operations. In view of the fact that large scale production has been one of the advantages of Canadian mills over those in the United States, it is felt that the new merger will be a constructive factor in the industry.

Contrary to any recent report, it is now stated definitely that the Port Alfred Corporation will not be taken into the merger. It is interesting to note, however, that the 650 tons produced daily by the Belgo-St. Maurice combination, together with the 200 tons daily to be produced by the Port Alfred corporation upon completion of its plant next year, will give the Holt-Grundy interests control over a group producing approximately 850 tons daily—the second largest output of any group now under single control. No intimation has been given of the probable personnel of the new unit, but it is understood that it will include a number of Montreal's most prominent financial and industrial executives.

Decision Near on $5,000,000 Mill

The question of Quebec's proposed new pulp mill, to be erected near St. Anne's de Beaupre, at an estimated cost of around $5,000,000 will be settled next week. Local agents of the Mead Investment corporation are now in New York in connection with the matter. This new pulp mill was the cause of the celebrated $1,750,000 law suit taken recently by the Leaside Engineering Company, of Toronto, against the Bayless Pulp and Paper Company, of Binghamton, N. Y., in connection with an alleged agreement to turn over the Canadian assets of the Bayless Pulp and Paper Company, which are the St. Anne de Beaupre Pulp nd Paper Company, to the Leaside Engineering Company. The Leaside action was dismissed, and immediately afterwards the Mead Investment Corporation of New York obtained an option or practical agreement giving them up until this week in which to complete the sale, or to let matters drop.

Rapid Progress with Wayagamack Mill

It is understood that the Mayagamack Pulp and Paper Company has had a good year, for since January 1 the plant has been producing at full capacity on 24-hours a day basis.

The market for the company's output of sulphte pulp has considerably improved of late and new uses are more and more being found that kraft paper. These factors should to some extent be reflected in the profits of the fiscal year which ends November 30. Wayagamack has made exceptionally rapid progress with its new news print plant. The machinery was first ordered about January 1, ground was broken for the plant on April 1, and the erection of the machinery began about July 15. By September 28 the plant was finished and power had actually been turned on to the machines. At the present time, the machines are being adjusted, and regular production of news print is assured by December 1.

International Paper Buys St. George Pulp

The International Paper Company is reported to be taking over the St. George Pulp Company's plant and timber holdings in New Brunswick. The deal is said to form part of a scheme in which the International Paper Company plans to take over all the pulp and paper holdings of the *New York World*, which controls several pulp and paper holdings in the United States also. There has been no official confirmation of the deal as yet.

Orders from Australia

A despatch from Vancouver stated that although it was not expected that the Canadian-Australian trade treaty would turn much of the Commonwealth's news print business to British Columbia for a year, orders aggregating 20,000 tons have already been received by the British Columbia mills.

Abitibi Power & Paper Completes New Line

Power from its Island Falls plant was turned on for the first time last week at the Abitibi Power and Paper Company's mill at

(*Continued on page 38*)

Philadelphia Paper Trade Enjoys Fall Activity

Overstocked Market in Several Grades Relieved by Bigger Demands—Publishing Trade Ordering Book Papers on More Extensive Scale—Printers' Papers Holding Up Fairly Well—Coarse Papers Generally Responsive to Advance Holiday Business

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 16, 1925.—Keen competition and hustling after orders for paper is evidenced in the efforts to stimulate demand for numerous lines of the grades that have been slow sellers within recent months. This competition has had beneficial results in reducing large stocks that were encumbering warehousing capacity and the trade is expressing satisfaction that more prosperous conditions have brought about relief of an overstocked market in some of the less popular grades that are essentially seasonal sellers.

While the volume of hangover stocks has been materially reduced, there also has been gratifying reductions of standard grades that are moving along with the more active Fall markets. Many jobbers have been pushing the less active sellers, taking advantage of the growing demand for paper generally to reduce their stocks while the season holds and in some cases there have been attractive offers in price concessions to produce results. Some dealers have been circularizing customers, offering special lots of the lines that they have been particularly anxious to dispose of, and with effectiveness. While all are hopeful of the growth of business in the New Year, there is some doubt of what the future holds for the paper market. Like the manufacturers, the trade is more in a waiting mood toward the new business cycle, and is not allowing present activity to go past without cleaning house in anticipation of what many believe will be lower priced papers that are expected to come with the new year.

Special Grades of Fine Papers More Active

Active demand for some of the grades of book papers came with the week, indicating that the publishing trades are again in the market on a more extensive scale. Printers' papers, while holding fairly well to the broadening of demand that was noted with the fall days, are not up to the normal seasonal markets, although still showing considerable improvement over November of 1924. The needs of advertisers and printers catering to large customers of printed stationery, catalogue houses, manufacturing stationers, corporations and the nationally known engraving firms, greeting card manufacturers, and others now in the market for seasonal specialties of like character have been the main sources for paper distribution within recent days in anticipation of holiday requirements or the new year's needs, of the general industrial world.

Coarse Papers Show Keen Competition

The coarse paper market is beginning to show the keenness of competition that is back of the seasonal activity. Some of the dealers who have been experiencing difficulty in the disposition of their stocks during the dull period of the passing year, now are forcing sales by attractive offerings of stagnant grades, which they believe are due for lower quotations with the advent of 1926. These are such papers as kraft in counter rolls, sulphite manilas, and in the fine papers, super calender books 25-38-50 and 38-50-100 weights and others. Mill shipments are prompt for this season of the year, indicating that orders are on equality with production, and that there apparently is no waiting list, as is customary at this time of year with the manufacturers. Generally, the coarse paper market is responsive to the advance holiday business and seasonal activity, although there is very little indication that the industrial world is preparing for continued activity after the New Year, all purchases being confined to the moment's needs, or to hold over the Christmas period.

Paper Men Hear Report of Typothetae Committee

Suggestions for the stabilization of business between the printing industry and the paper dealers and the question of extension of credits were the subjects that held the attention of both master printers and paper men at the meeting of the Fine Paper Division of the Philadelphia Association last Thursday in the Bourse. In the social atmosphere around the dining table at the luncheon hour, the paper dealers were informed of numerous ways in which they could co-operate with the members of the Typothetae, in eliminating credit evils and promoting healthier trades relations.

Individual members of the Trades Relations Committee of the Typothetae, led by Chairman William S. Sharpless, told of the helpfulness that paper men could extend to their associates in the printing industry in stabilizing business, and by suggestions, gave their allied tradesmen many important pointers to aid in promotion of sounder principles of business between the two industries, with regard to extension of credits and in other trade practices.

Others who spoke on the important questions involved, with particular reference to that of "How Best to Handle the Credit Situation Created by the Doubtful Financial Situation of Some Firms," were President Charles Kinsley, of the Typothetae, William T. Innes, S. Clayton Wickes, E. S. Paret, and Secretary Franklin Heath, of the Typothetæ Committee. In their talks they stressed the importance of stringent credit relations in order to protect both paper men and printers, alleging that when extensive indebtedness to paper dealers was involved in failures by master printers, that it was corrected by passing it along to other concerns associated with the paper trade, thereby wiping out the loss incurred.

To avoid this, they said, it was necessary for the paper men to exercise caution in extension of large credits to those firms of uncertain business standing.

Waste Merchants Urge Strict Rag Packing

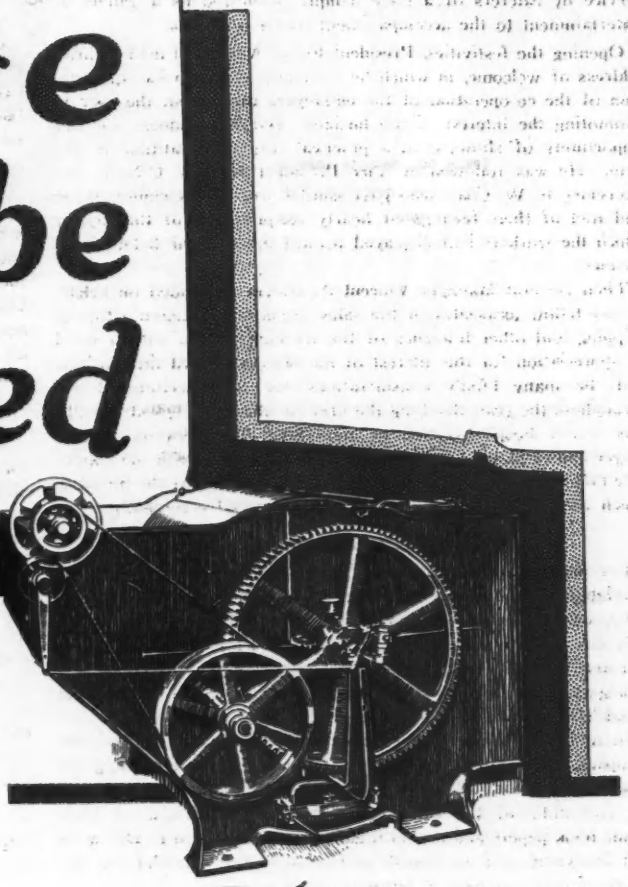
Another combined social occasion and business discussion in the stock dealers division of the trade was held on Wednesday evening when nineteen members of the Philadelphia Wholesale Waste Merchants Association gathered at Webers, Delaware avenue and Chestnut street, and there urged the stringent packing of rags among the dealers in the Rag Division of the Association.

William J. McGarity, Jr., presided, and in his talk particularly outlined the grading and classification of rags, as they are listed in the mill specifications adopted by the paper manufacturers of the nation for the uniform packing of rag stocks. He urged his associates in the Quaker City and Camden trade to follow these most carefully, so that the local wholesale dealers might share more generously in mill patronage, and in order to raise the Philadelphia industry to the standards of other cities where regulations were strictly enforced. The discussion was held while the members assembled at the dining table in an informal session of the quarterly gathering of the Association.

Business Family of Paper Manufacturers Co. Celebrate

Armistice Day was doubly celebrated in amity and comraderie by the business family of the Paper Manufacturers Company, 5th and Willow streets, when ninety associates and members of the firm joined in the 2nd annual get together occasion for the purpose of feasting and merrymaking after a year of good-fellowship and mutual extension of good will for the prosperity of the firm.

Waste must be stopped



There was a time when profits were so ample and demand so far exceeded supply that the paper manufacturer could watch a stream of white water pouring into the sewer with an unmoved conscience.

But today, allowing expensive fibre to pollute water instead of produce paper is out of the question.

Bird Save-Alls, installed wherever white water leaves the mill, return the good fibre in condition for immediate use. They make white water a source of profit instead of a problem.

The BIRD SAVE-ALL

BIRD MACHINE COMPANY

8603

South Walpole BIRD MACHINERY Massachusetts

Decorated in the national colors and emblems the entire first floor was converted into a dining hall and entertainment center for the service by caterers of a tasty banquet, followed by a vaudeville entertainment to the accompaniment of an orchestra.

Opening the festivities, President Frank A. O'Neill made a brief address of welcome, in which he gave expression to his appreciation of the co-operation of the employees throughout the year in promoting the interest of the business, and his gladness for this opportunity of showing in a practical way the gratitude of the firm. He was followed by Vice President John A. O'Neill, and Secretary F. W. Coar, who gave similar words of encouragement and told of their feelings of hearty reciprocation of the loyalty which the workers had displayed toward those at the helm of the business.

Then General Manager Vincent A. Dirvin responded on behalf of his fellow associates in the sales organization, manufacturing, shipping and other branches of the working forces, with a word of appreciation for the interest of the officers toward the workers and the many kindly considerations for their welfare shown throughout the year, thanking the firm for the courtesy extended in this festive hospitality and in the business co-operation of employer and employee. The dinner was interspersed with the vaudeville numbers on the program and later by dancing, as the finishing touch to the evening's entertainment and social comingling.

Jessup and Moore to Add Mechanical Units

For the purpose of extending its mechanical equipment and to develop further its paper mills, the Jessup and Moore Paper Company, with executive offices in the Commercial Trust Building in this city, issued a statement during the week proclaiming the refinancing of the company to the extent of $2,250,000 in first mortgage 6 per cent sinking fund gold bonds, issued through the Land Title and Trust Company, of Philadelphia, trustee.

In a statement issued by President Eugene W. Fry, of the company, it is stated that the new issue will pay off existing indebtedness in mortgages, finance improvements and betterments to the five mills of the company engaged in manufacturing high grade book papers and chemical soda pulp and located in Delaware and Maryland, and to provide additional working capital for the expected large increase in business.

Augustine Mills New Equipment

At headquarters here, it was learned that the Augustine Mills in Wilmington, Del., will be equipped with an additional machine of 166 inch wire for the manufacture of book papers, increasing production to the extent of from 80,000 to 100,000 pounds per day. This new machine will augment the three already in operation, providing the mills with four of these units. A building program calls for an additional structure to house the new machine. Other improvements also are pending for the modernizing and development of the mills.

Scott Paper Co. in New Financing Deal

Another large local paper manufacturing concern that announced its new financing plans during the past week was the Scott Paper Company, of Chester, Pa., with Quaker City offices in the recently constructed Packard Building. The Scott Company financing calls for $500,000 7 per cent cumulative sinking fund preferred stock, par value $100, redeemable as a whole at $110 and accrued dividend on 60 days' notice, the Pennsylvania Company for the Insurance on Lives and Granting Annuities, Philadelphia, as transfer agents. The proceeds of the new financing will be used to reimburse the treasury for capital expenditures during 1925, to provide, along with earnings, the amount required to purchase and erect a new paper making unit, as well as new improved semi-automatic finishing machinery, upon completion of which, production will be increased 30 to 35 per cent and the cost of manufacture materially lessened. The new units are now in process of construction and include the largest toilet paper making machine in the world. The Scott Company manufactures and distributes internationally its own brands of toilet tissues and tissue towels.

Champion Coated Paper Salesmen Meet

Over one hundred paper salesmen, representing the various houses in Philadelphia which are distributors for the Champion Coated Paper Company's products, were the guests of Charles A. Labor, Philadelphia manager, at a dinner given in the Bourse Restaurant on Wednesday evening. The feature of the evening was a talk by E. Kenneth Hunt, advertising manager of the plant at Hamilton, Ohio. Mr. Hunt illustrated his talk with many lantern slides, showing what has been accomplished in the course of the six million dollar improvement program just completed in the company's mills at Hamilton, Ohio, and Canton, N. C. He took the paper salesmen from the wood on the Tennessee border, where Champion controls over one hundred and twenty-five thousand acres, one of the last stands of virgin timber in the East, through all the processes of manufacture, and the completion of the finished paper.

Unique Employment System

A most interesting detail explained was the system by which the vast number of employees of the company are hired and classified for the proper work, then handled by employment experts to prevent their being discouraged with their positions and leaving. Mr. Hunt explained that Champion estimated it cost them $5,000 to train a machine hand for his job. With that cost in mind, they make every effort to prevent labor turnover. As a result, Champion's labor turnover has been reduced from 85 per cent to less than 2 per cent. He further explained how the owners of this mill were actual managers, knowing intimately every detail of the business and how it was thus possible, as he explained in the case of one important machine improvement that came on the market about a year ago, to try it out at Champion and equip the entire fourteen machines, when the device had proved practical, all within one month's time.

Many Improvements Illustrated

There were dozens of very interesting photographs of the huge coated mill at Hamilton and also the finishing room, which Mr. Hunt states is the largest in the United States. The photographs illustrated certain improvements in sorting, counting, and packing, that have been worked out to a degree which Mr. Hunt states is more advanced than in other mills. The meeting lasted over two hours and a half and the interest of all salesmen was evidenced by the close attention with which they followed the pictures and Mr. Hunt's talk.

Jessup & Moore Paper Co. Expands

[FROM OUR REGULAR CORRESPONDENT]

Wilmington, Del., November 16, 1925.—Extensive additions and improvements, involving an outlay of $550,000, will be made to the Augustine Mills of the Jessup & Moore Paper Company, it was learned last week, which will make that plant one of the most modern and up-to-date paper mills in the country. Work on the improvements will be begun at once with a view of having them completed during the summer of next year.

Over $300,000 will be devoted to extension of the plant, while a new mechanical equipment of paper-making machinery will cost $250,000.

The proposed improvements have been under consideration for some time by the company, and, following the decision to inaugurate the remodeling, it is hoped that the work will be complete by September 1 of next year.

The modernization of the Augustine Mills will not only add $300,000 to the building operations going on in and about the city, but will add possibly a quarter of a million dollars to the output of a local industrial plant manufacturing paper-making machinery, and thus will be one of the most important undertakings in construction that will be begun this winter.

TIME OUT *for repairs*

"TIME for repairs" cost the industries of our country about two billion dollars last year. If the government-experts' ascertained average holds good in your plant, (and it does if you are operating with obsolete equipment) then you are paying out 20% of your wages for idle time! The federal "committee of 17" officially reports these figures.

The NEW BELOIT FOURDRINIER with its modern time and labor-saving Removable, Adjustable and Shakeable features, is eliminating this waste in many mills today. It can do the same in your mill, for there's nothing in paper-making history that can compare with the remarkable records of production secured with the "Beloit."

Won't you let us present the facts for your consideration?

The NEW BELOIT FOURDRINIER

Beloit Iron Works **Beloit, Wis., U. S. A.**

Since 1858 Builders of Paper, Board Mill and Container Plant Machinery

Ontario Paper Business Is More Encouraging

Manufacturers of Holiday Specialties Rushed With Orders—Paper Sacks Replacing Cotton and Jute Bags for Shipping Flour—Beaver Wood Fiber Co.'s New News Print Machine Nearly Ready for Operation—Nipigon River Has Excellent Facilities for New Pulp Mills

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ontario, November 16, 1925.—While business in the paper line is not booming, the merchants are in a more cheerful frame of mind than they have been for some time, as trade has been growing more encouraging and collections are improving. Those manufacturing concerns which make specialties for the holiday season, are rushed and this includes fancy paper box manufacturers, envelope producers and tissue paper mills. Orders are quite numerous and November should on the whole prove a very satisfactory month for turnover.

There has been a drop of about five per cent on the prices of manila and kraft paper bags, due to anticipated foreign importations which are on the market and while the competition has not been seriously felt, inroads are not likely to be very heavy. Manufacturers of flour sacks have been very busy owing to a large number of orders received from Ontario and Quebec. The use of paper sacks is growing and gradually replacing cotton and jute bags for shipping flour.

The Provincial Paper Mills say that they have had a record production at the Port Arthur plant during the past month on half tone news and ground wood book papers, and sales have been large. The company have just completed a new machine shop, 60'x150', one story high, at Port Arthur and have put in a new acid tank as well as carrying out other improvements. In all other lines the paper business is moving steadily and the trade is each week growing more confident.

John F. Ellis Celebrates Birthday

John F. Ellis, President of Barber-Ellis, Ltd., manufacturing stationers and wholesale paper dealers, Toronto and Brantford, celebrated his eightieth birthday last week and was the recipient of many congratulations. Mr. Ellis, who is honorary president of the Canadian Paper Trade Association, has been identified with the industry for a longer period than most men in Canada and is enjoying good health. He is at his office every day and keeps closely in touch with all departments of the business. He is a former president of the Canadian Manufacturers' Association, the Toronto Board of Trade, and other influential bodies.

Important Hardwood Center

Desbarats, east of Sault Ste. Marie, Ont., bids fair to become an important hardwood center. A Toronto firm has had an expert in the district making a report on the quantities of wood in the area and the railways have had officials on the ground figuring on the best freight arrangements that can be made. It is expected that the Toronto company will erect a new mill at Desbarats in the spring.

Employe Killed in Pulp Plant

Edward Farnsworth was instantly killed last week in the ground wood pulp plant of the Foley-Rieger mill, at Thorold, Ont. He was starting up the machinery in preparation for the week's work when he was caught in the shafting and whirled around, striking the wall with great force. Farnsworth, who was twenty-six years old, leaves a widow and five children.

New Machine Will Soon Start

The new news print machine, which is being installed by the Beaver Wood Fiber Company, at Thorold, Ont., will be running by the end of the present month, and will turn out about seventy tons daily, according to John Ball, resident manager. The ground wood pulp for the output will all be made by the Beaver Wood Fiber Company's own plant at Thorold. The machine will be steam driven and will possess the most modern equipment. It will have thirty-four dryers, 75-inch suction couch, two Bird screens, Ross ventilating and Trimbley mixing system.

Ample Power for New Pulp Mills

No private power developments along or near the Nipigon River will be necessary to turn pulp and paper mill wheels for the 10,000 square-mile area of timber limits recently sold to Head of the Lakes concerns by the Ontario Government. The Provincial Hydro Commission will be able to look after the maximum estimated requirements, either from the Nipigon River itself, or from another plant strategically situated.

This important declaration on the power situation at the Head of the Lakes, where huge new industrial development is on the eve of commencement, due to big Government timber sales, was made by O. Holden, Assistant Hydraulic Engineer of the Ontario Hydro-Electric Power Commission.

With its high banks and its 248 feet of fall in ten miles to Lake Superior, said Mr. Holden, the Nipigon River offered the Canadian people the most efficient kind of power development. Emphasizing the economical wisdom of utilizing every possible foot of fall in Canadian water power developments—because the time would come when every water power would be developed—Mr. Holden said that, of that 248 feet of fall, only four feet could not be utilized. It was situated in the last stretches of the river, where the flat banks made it economically inadvisable to use it.

The Nipigon River drains into Lake Superior an area of 9,000 square miles, of which 1,500 square miles is composed of Lake Nipigon. This natural collecting basin provides an efficient, even flow of water rarely matched in the water powers of the world. It also provided excellent facility for the storage of surplus waters.

Notes and Jottings of the Industry

W. H. Sheriff, of the Hodge-Sheriff Paper Company, Toronto, has returned from an extended business trip to Winnipeg, Calgary and other points in the western provinces.

Edward McWhirter, superintendent of the Barber Division, at Georgestown, of the Provincial Paper Mills, who recently underwent an operation, is recuperating at North Magnetawan, Ont.

Col. C. H. L. Jones, of Saulte Ste. Marie, Ont., manager of operation for the Spanish River Pulp and Paper Mills, was in Toronto last week on business.

J. A. McArthur, of the Canada Waxed Paper Company, Toronto, has returned from an outing in the Bobcaygeon district.

The Reeves drive on No. 1 machine of the Thorold, Ont., unit of the Provincial Paper Mills, broke last week and resulted in the plant being shut down for a few days. Temporary repairs have been made and the mill is again in operation. Permanent replacement will be made within the next two weeks.

There is a good demand for greaseproof papers and prices are well maintained. The foreign papers in this line are gradually being replaced by those of domestic manufacture, which is encouraging to the producers.

Paper that Grew, Ready to Use

When Marco Polo, prisoner of war at Genoa, dictated the story of his travels to Rusticiano, scribe and fellow prisoner, Europe learned for the first time that Cathay of the Great Khan used paper money.

True enough, it was not our kind of paper. The ingenious Chinese stripped the inner bark of the mulberry tree, stained it black, stamped vermilion characters upon it by means of movable blocks, then beheaded all imitators of this imperial currency.

Polo talked of the population, distance and wealth of Kublai's empire in such large terms that his Venetian neighbors nicknamed him "Marco Millioni." How much less would they have believed the present day immensities of our own United States of America! Here ten million people use paper money they create at the moment of payment—checks, written on paper plentiful enough and economical enough to be used for a single transaction.

Hammermill Paper Company

Erie, Pennsylvania

The Present Status of Trade Associations and Their Problems*

By Dr. Hugh P. Baker, Executive Sec. of the American Paper and Pulp Association.

Trade associations have come to be a permanent and an increasingly important factor in the business life of this country. That this statement may be amplified and emphasized it would be desirable to state the problem—to put before you an accepted definition of a trade association before an attempt is made to discuss the place of the association in our economic life. A workable definition of a trade association should be very helpful also in limiting and focusing the discussion.

The national organization of trade association executives, meeting this week in Chicago, was in existence for several years before any general agreement could be reached even by the trade association executives themselves as to a satisfactory definition of a trade association. Finally, a special committee was appointed to draft a definition and this was officially approved by the organization in 1922. The American Trade Association Executives define a trade association as follows:

> "A trade association is an organization of producers or distributors of a commodity or service upon a mutual basis for the purpose of promoting the business of their branch of industry and improving their service to the public through the compilation and distribution of information, the establishment of trade standards, and the cooperative handling of problems common to the production or distribution of the commodity or service with which they are concerned."

A better definition of the fully functioning trade association of today it would be difficult to develop and we shall therefore make this definition the place of beginning for this discussion. We are only well started on the process of defining and standardizing the work being done by trade associations, and we are very much at the beginning of the development of a profession of trade executives. Such a situation in trade association development should offer the greatest possible opportunity for discussion and formulation of opinion, and the Academy of Political Science of the City of New York is to be commended for the giving of the time at an annual meeting to a discussion which should result helpfully, not only to trade associations themselves, but to the business groups which they are serving.

In the brief and fragmentary comments, of which this paper is formed, no attempt is made to discuss the legal status of trade associations. It may seem somewhat difficult to discuss a trade association today without considering the legal issues involved, and particularly the attitude of the government toward trade associations. Those phases of the subject are of great importance, of course, and it is assumed that they will be discussed elsewhere on the program by men competent to express legal opinions.

Economic Position of the Trade Association

While very much has been written, and much will continue to be written, of the legal status of trade associations, there has been much less discussion of the economic position of the trade association in American business life, and of the part which trade associations must continue to play in helping the business men to meet successfully the increasingly complex economic conditions with which he is surrounded. It should be particularly helpful to have the economic status of the trade association discussed thoroughly, that such status may be well understood and clearly recognized, not only by industry as a whole but by the public as well.

Perhaps trade associations have themselves been at fault in allowing the legal phases of their activities to be discussed so generally and so often to the exclusion of the consideration of the more important question of their economic value. The extent to which the doctor, which in the case of the trade association has been the lawyer, has been called in has unfortunately given the impression that there is sickness generally in the family when the fact may be that one of the restless growing boys has gone too near the fire and been burned more or less severely, while the others have been going along learning their work in an increasingly effective way. Because men are human and because there is selfishness and greed we will probably continue to need the lawyer-doctor, but there will be less and less need as the family of trade associations grows up and takes its place in our increasingly interesting and difficult community life.

Economists have repeatedly traced and described the history of group effort among business men. It has indeed been a slow and often a destructive effort, but the ever increasing complexity of economic life has gradually forced a recognition of the essential need for organized action by business men in the meeting of their common problems. This recognition of the values to be secured from organized effort of the returns which would result from the pooling of information from the individual for the helpful use of the group, gradually caused business men to associate themselves together in trade associations. The trade association is slowly and hesitatingly, but most certainly, satisfying an ever more clearly defined need, and it is making for group strength and harmony of action among business men.

Any effort which would result in the breaking down of distrust and suspicion among business men and which would bring knowledge and understanding of basic economic principles and procedure in place of ignorance and misunderstanding, would beyond a doubt make business men better men and better citizens. Therefore, the public must in time come to appreciate the fact that it too has profited largely by this coming together of business men in associations.

Disturbing factors or quakes have often and regularly in the past affected our business structure, jarring and disrupting and bringing peaks and valleys in business as the earthquake jars and disrupts the earth's surface. Organized effort among business men through trade associations has brought about sounder building in business; has put in new foundation stones to steady and to prevent the jarring and the toppling of business structures. It has taken centuries to bring man's mind to the proper understanding of the phenomena of the physical structure of the earth and to teach him how to combat destructive natural agencies and to build upon the earth in a way that he may live with less danger and in greater peace. It has taken long years of business turmoil and suspicion and unrestrained selfishness and greed to bring the business man to recognize the fundamental necessity of organized effort through association that he may build his business structure on a basis that makes for permanency and harmony and a just return for service rendered, and yet but a good beginning has been made and the fight for sound and honest development of organized effort must go on through the years with the fighting front changing constantly—this year faced inward to meet the attack of those who should be most concerned and who should profit most by organized effort—next year faced outward to meet the effort of those in our

* Delivered at the Annual Meeting of The Academy of Political Science, New York City, October 28, 1925, included in *The Proceedings* of The Academy of Political Science, Keet Hall, Columbia University, New York, Volume XI, No. 4.

EXCEPTIONAL ADVANTAGES

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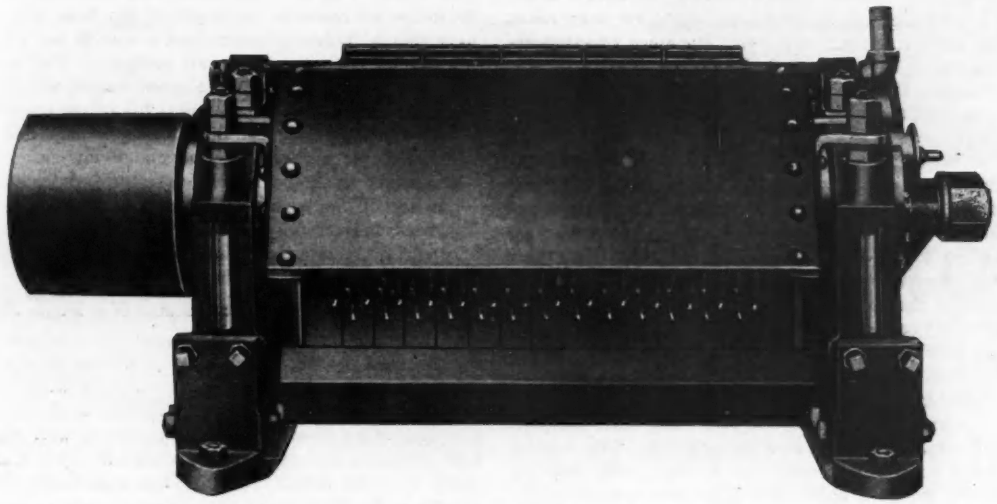
ARPEKO SHREDDER



Delivery End of the Arpeko Shredder

The ARPEKO SHREDDER offers exceptional advantages for shredding pulp laps and sheets. It will shred at least four dry tons of kraft sheets per hour, operated by a 50 H. P. motor.

It will shred at least 400 dry tons of kraft sheets without re-sharpening the blades, and has made frequent runs of 800 tons without changing blades. On semi-dry pulps a full month's run may be expected, and the blades can be removed, sharpened and replaced by one man in three hours.

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government and outside whose distorted vision makes them see every business man as a crook, or those short-sighted ones who fail to see that progress has been made and who would have modern business put back onto the basis of barter.

Effect of the Need for Information Upon Formation of Associations

The increasingly difficult economic conditions of the past decade have made business men turn as never before to the consideration of the economic factors which have been more or less apparent as affecting the trend of business progress. This growing demand for accurate information as to facts and figures which may help in the charting of the course of individual business and business by industries as a whole, has brought into our business life two very interesting individuals—the statistician and the business economist. The business economist, whatever that term may mean, came into his own during the Great War. The allied governments, particularly, found it necessary to deal with organized groups in our industries and, often where industries were not organized, governments were instrumental in forming organizations for better cooperation, not only as among the units making up those organizations but as between the groups and the government. Along with this development came the need of the government for accurate information, for facts as to raw materials and a thousand and one other things. The statistician and the business economist appeared to fill the breach—and furnish the facts—and they were taken on by the newly formed organizations and one may almost conclude that since the war these makers of figures and facts and futures have turned on the government and taken it on and over. But these men have proven their value and are contributing much to trade association work.

While the economic service, so-called, was in existence before the war, the movement has blossomed most fully since the war. Today the blossoms have so crowded themselves upon the rapidly growing stem of American business that in some cases they are showing signs of going to seed. These services, are of course, being supported by business, and that they continue their activities is indicative of the fact that they are giving service to business and industry—that they are filling the same type of need as the trade association. These economic services, while not often directly competing with trade associations, have in numerous ways come to supplement them and there can be little question but what they have been a stimulant to association work.

As business organizes itself more effectively finding that it can voluntarily do for itself through its associations what it has for long felt it must have done for it by the government, or by private statistical or other services organized for profit, the associations controlled by and for the good of an entire group will take the place of federal bureaus and private services, and all for economy and efficiency for those making up the associations.

Meeting the Tendency Toward Government Control of Organized Effort in Business

The cooperation between business and the government which was so necessary in the war period resulted in very helpful developments in organized effort in many of the industries. On the other hand, there have been numerous cases where the government's unrestrained and overly eager desire for intimacy with business has had very harmful results to business organizations.

The necessary war effort almost fixed the bad habit upon certain groups of business men of turning to the government whenever outside help seemed necessary. This attitude on the part of some business men has been taken advantage of by those at Washington who would develop a much stronger centralized control than seems desirable or necessary in such a government as ours. Industry as a whole has been partly at fault in the growing tendency on the part of the government to inject itself in a harmful way into the business of the country. It has helped the public, unknowingly possibly, to the conclusion that Congress may so legislate as to influence or change the working out of fundamental economic laws. Trade associations, fact-finding, stabilizing agencies in business, have already proven their value in meeting and changing this absurd conclusion that the course of economic development may be changed by act of Congress.

On the other hand the thinking trade executive, while seeing clearly the absurdity of attempting to legislate in such a way as to influence or change the working out of economic law, is quick to see that after all business men as a group are as fundamental a part of the government of this country as is agriculture or labor, and that there is great possibility of help to industry through sensible cooperation with governmental departments, particularly where those departments are led by business men of broad vision.

Voluntary Control of Organized Effort by Business the Goal

It would seem as if an outstanding contribution of trade associations to economic development has been and will continue to be sounder industrial control and a sensible and voluntary working out by business of its own problems. The attitude of the present administration at Washington toward the business of the country means much to the business life of the country. However, with a changing administration, business may find itself again faced with the necessity of meeting an avalanche of legislation which would seek to regulate or control the business and the social life of our population by groups or classes. The soundly organized and carefully guided trade association should function very effectively as a balance wheel in these very difficult relations between the business and the government.

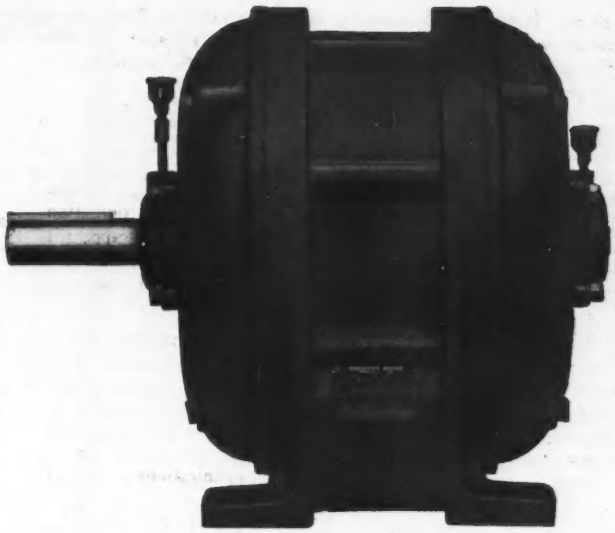
Formation and the present Status of a Single Association

It should be helpful in this discussion of a subject assigned but not bounded by any limitations to discuss briefly the present status of a single trade association. As the writer of this paper is still in the midst of his apprenticeship in trade association work, and very much of an amateur as compared with men who have been managing successful trade associations for a dozen years and more, it would simplify the question materially, for the writer at least, if the trade association discussed could be that with which he is concerned.

The paper industry of this country has been served by trade associations longer than any other industry of equal importance. We claim for one of the groups of the industry, that is the writing paper manufacturers, the oldest trade association in the United States. The Writing Paper Manufacturers Association was formed in 1861. Today it represents approximately 95% of the tonnage of writing paper manufactured in the country and is giving most efficient service, and is in fact living out the definition of a trade association as given in the opening of this paper.

The American Paper and Pulp Association, the central organization of the paper industry, was organized in Saratoga Springs in 1878, and it will therefore soon celebrate its 50th anniversary. In going through the minutes of the first five Annual Meetings of the Association it is exceedingly interesting to note that the principal subjects discussed from year to year were over-production, the continued building of new machines, and the failure of the manufacturers to live up to the understanding or agreement that production should be cut. In those years, between 1878 and 1885, there was no legal objection to very full discussion of problems of over-production and agreements as to restriction of production.

It is apparent that in the early years of the Association the same general problems confronting paper manufacturers were in existence as are being faced more or less today by the industry. Reading between the lines of the minutes of the first 5 meetings of the Association, it is plain that the main purpose of these first meetings was social rather than of a business character. In other words, the paper manufacturers came together for a good time though with the passing of the years the obvious thing happened, of course. An increasing number of manufacturers attended the Annual Meetings from year to year, and as they became acquainted learned that the other manufacturer, whether in the next county or the next state, was after all a very human and a very likeable



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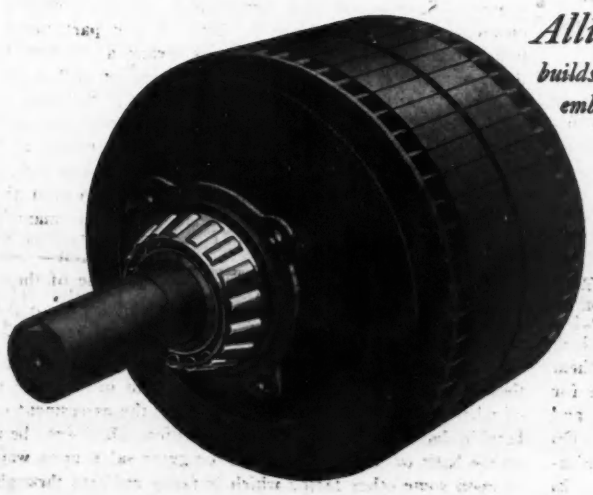

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builds Electric Motors embodying Timken advantages

fellow. Better acquaintanceship brought greater readiness to exchange information, and each year discussion of business problems gradually took the place of social features, and the Association became more truly a trade organization.

Getting Together to Exchange Ideas

It has been suggested that the most wonderful thing in the business life of this country in the last 50 years has been the growing ability of business men to get together for the exchange of ideas. While it is very difficult to measure or evaluate the service of trade associations in bringing about real acquaintanceship among the manufacturers in a given group, yet there can be no question but that this particular service alone has justified much of the effort and the expense of trade associations.

For a number of years the American Paper and Pulp Association was a centralized organization, made up of manufacturers representing all of the diversified groups in the industry. While suspicions were broken down by better acquaintanceship and competitive business was therefore put upon a somewhat higher plane, the real test of the value of the Association was not reached until aggressive efforts were made to get general agreement on the solution of some of the business problems of the industry. As with other groups of manufacturers who were apparently unrestrained in their activities, groups of paper manufacturers allowed themselves to be carried over the line of sound business and ethical procedure and eventually they were called to account by the government. During the latter part of the 90's and on into the nineteen hundreds the Association faced stormy times, and while the organization continued there was eventually a swinging away from a centralized form with resultant formation of new and separate associations in the various groups, other than the writing paper group, where the older association continued to follow quietly and effectively its own course of action.

Some ten years ago the American Paper and Pulp Association became a federated organization through the bringing together of some of the branch associations representing the various groups of the industry, and today the Association is in fact a national federated organization. The height of decentralization in association development in the industry was reached about 1918 and since that time there has been a gradual swinging back to centralized effort on the part of the industry in its association work. Today the larger general problems of the industry are being taken care of for the various groups by American Paper and Pulp, while the more specific problems of the separate groups are handled by the associations serving those groups.

Types of Association Problems

There are two series of problems confronting every national trade association in this country. These are:

First—the interior problems of maintaining a satisfactory and effective association, and second—the exterior problems of service by the Association to its members, relation with the public and the government, and with other national organizations.

There has been much discussion of the exterior problems and these discussions have been crystalized into very helpful reports or text books by such organizations as the National Industrial Conference Board and the United States Department of Commerce, and similar organizations. Of course, the exterior problems of service by an association are fundamental, and, of course, they are of vital interest in the further development of trade association work in this country.

We might compare these two series of problems in trade association work with what are possibly similar problems in college and university work. It is fundamental that we consider in the development of higher education in this country the service which the colleges and universities are giving to those who attend them and the public in the preparation of young men and women for the business of life, and only as these problems are met and solved effectively by a university is that university successful. On the other hand, the university has its problems of interior organization and control—educational leadership, financial support, etc. In a way these two series of problems are so closely interwoven that they must be considered together whether we are discussing colleges or trade associations, and incidentally, it may not be out of place to suggest that from certain angles the trade association is in fact very much of an educational institution.

An Association's Inside Problems

Among the more important of the inside problems of the ordinary trade associations are:

First—The securing of unified support from an industry for the trade association serving it. The definite need for organized and unified effort has brought our trade association into existence and yet an association is confronted always with the necessity for constant effort to make general throughout the industry the recognition of the vital need for organized effort. Fortunately, we have in all organized groups unselfish men of vision who are willing to give of themselves and their means in the furtherance of united action. It is probable that the millenium will be reached before we find organizations of men who are not faced with a perpetual membership campaign. But one can be an optimist, as great progress has been made in trade association work, in establishing the need of organized effort, and each year records further progress.

Illuminating studies are being made of the business cycle, largely looking to the development of conditions under which the cycle may be brought to travel the straight road that will be the shortest distance between two given points. Interesting studies of the effect of the business cycle upon education and upon organized association activity might be made. For instance, in periods of depression it would appear that there is greater attendance of young men in our colleges and universities than in periods of good times. We know that periods of good times mean easier sailing for trade associations. The very fact that periods of depression may mean difficult times for trade associations indicates that they are not yet fully recognized as absolutely fundamental agencies for service in our economic development.

Foreign Business Organizations

It may be that we have something to learn from organized activities of business men in foreign countries. While there may be greater suspicion among business men in the older countries of Europe than in the United States, the very fact that they face more difficult economic conditions than we have yet faced in this country, causes them, in their organized effort, to react to periods of depression differently and more satisfactorily than appears to be the case in this country. During 1922 the writer had the privilege of spending some time in a study of the pulp and paper industry of Northern Europe. This study seemed to show that the Scandinavians particularly react in their organized efforts during periods of depression very differently from the way in which we seem to react in this country. Let a period of depression come in Scandinavia and immediately organized efforts among business men are strengthened. This is seen particularly in the individual mills where poor business means a stronger technical department. Let there be a period of depression such as we passed through recently in this country, and, at least in the paper industry, there comes immediately a scrapping of the technical and woodlands departments on the part of individual concerns and a limiting of support of trade associations that of course reduces their ability to serve. Perhaps a more serious depression than that through which we went recently would cause our manufacturers to take the same attitude toward organized effort as taken by foreign manufacturers.

Second—as with educational institutions it would seem as if every trade association in the country is faced with the constant problems of adequate support. This problem of support is not attributable to the ambitions of the manager of the secretary though that is, of course, an element in all of it. The question of what is the most satisfactory basis for the assessment of membership dues seems to be always a question. Shall dues be assessed on the basis of unit of production or gross sales, upon wages paid, or upon some other factor which is fairly uniform throughout the

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industry. The problem, of course, is not limited to the association itself. Industry is bearing an exceedingly heavy burden in the carrying on of organized effort. Perhaps it is a case of over-organization, a multiplicity of associations. The paper industry is expending nearly a million dollars a year in organized effort, from all of the local organizations in the community where the mill is situated, and on through state and national organizations. Each organization is anxious to demonstrate its services and its needs for support, but, like poverty, this problem of financing our trade associations will be with us always.

A third vital problem ever before the trade association is the securing of the assistance of key men in the work of the association. Everywhere today we hear the call for more effective leadership in politics and religion and in education, and in our associations we are facing the same need. Some of the associations have solved this problem for a time and then come to the period where men who have given long service feel that they should be replaced by younger men, and the younger men hesitate because they are in the midst of developing their particular mills and feel that there must be others who are more interested or more able, at least more ready, to give of time.

There is always some danger that an association will become a one man affair either through the leadership of some executive or the shortsightedness of the manager, who finds it easier to go ahead with his own ideas than to bring the keymen of the industry to the support of his organization. But what organization of men is not facing this problem and how much of tact and effort is needed by the successful trade association executive in meeting this need in such a way that he can remain more or less in the background to carry out the policies developed by the men whom he is serving?

A fourth problem of importance is the vocalizing of the needs of the industry through the association. How difficult it is to develop a united front on the part of a given group, and how constant is the question as to whether the association is representing the industry which it serves in the right way and in the most effective way. The smaller the organization, of course, the easier in a way to make vocal the needs of the group represented. In the larger organization there is always the danger of hasty action which may not represent the majority; or the opposite action, that is, slow and cumbersome methods of determining opinion and attitude. In some cases, in larger organizations, these cumbersome methods have resulted at times in a neutralization of opinion that may greatly lessen the power of the association. On the other hand, hasty action which may come as the result of overly aggressive leadership on the part of one or more of a group would seem to have more elements of danger in it than the slower determination of opinion. The ideal in this matter has not yet been reached and it should be a subject for more careful study by the trade associations of the industry.

A fifth problem which involves the personality of the manager of an association is that of maintaining satisfactory personal contact between the association's staff and its membership. The larger or the more diverse the industry which an association represents the more difficult the maintenance of satisfactory personal contact. There is always the question whether the manager should spend a large proportion of his time in the field in close contact with his group or whether his services will be of greater value in perfecting the work of the association from the central office. You are saying that a happy medium is the thing to be sought, and doubtless the course which is a happy medium would be different in every different industry and every different type of association. With the development of a profession of the trade executives' work this problm will become somewhat simpler as men will be trained carefully for the work in the future, where today trade executives are taken out of the law, engineering or education, and put up against problems of organization work which are often confusing and always difficult. A trade executive must be a versatile man indeed and above all things he must be human.

Outside Problems of an Association

Very brief reference will be made to the outside problems of the ordinary trade association, which might be listed as:

First—Informational, involving the fact-finding and research activities of an association and its contact with the public.

Because of the amount of discussion in the papers as to the attack by the courts upon the few associations which have gone beyond the fact of being fact-finding agencies causes the ordinary man to assume that a large part of association work is made up of statistical activities. If in the collection, compilation and dissemination of statistics the trade Association considers them as facts only, and gives them out as facts only, statistics are real servants to an industry. There is a possibility of wrong use of statistics as there is of the wrong use of many of the most helpful of the animate and inanimate servants of man.

The desire for information, the demand for facts, referred to previously as being factors influencing the development of organized effort, are not at all new factors but as a phase of organized activities that have meant aggressive research in all phases of the industry, from the production of raw material through the finished product, and to the ultimate consumer. It would be easy for the writer to make this paper a discussion of the growth of research and its application to modern industry. We are just at the beginning of organized research but which properly handled must make for greater efficiency and economy to manufacturers and business men and the public alike. The contact of an industry with the public is one of the most interesting phases of our industrial life, and particularly of trade association work.

As the American Paper and Pulp Association has had an information service, and has given much attention to the telling of the real story of the paper industry to the public, this industry is naturally keenly interested, in this particular phase of organized effort. What the paper industry has done, however, is but the beginning, and yet the beginning has convinced us that it is good business for an industry to go to the public with its problems as well as its product.

Second—Directional, which may well be used as a term to cover the service rendered by an association in connection with the problems of production and the problems of more satisfactory business contact. The struggle which the technically trained man has gone through in making a place for himself in industry, and the gradual reconciliation between the technically trained man and the practical man, is one of the most interesting stories from an educational standpoint which industry has to give us today. The contest is not over, particularly in the older and more conservative industries, and yet the contribution which the technical man has made in helping to solve the problems of production in an outstanding accomplishment in many of the industries. Again referring to the paper industry, let me say that we have a particularly well organized and effective technical association, which is contributing much to the paper industry through exchange of information among technical men and through direct study of production problems.

The question of better business contacts is a question always before industry and it is a question which trade associations have been very helpful in meeting and answering in part. Under this heading would come credit service, group insurance, cost activites, service along traffic lines, organized purchasing. Papers have been written upon each of these questions. A beginning in the way of organized effort in the solution of these particular questions has been made almost entirely through the trade association. In fact there are trade associations which are giving their entire effort to some of these single questions, and with great profit to industry. Again referring to the paper industry: Several years ago it established a Cost Association, which has made fine progress in bringing about a better understanding of costs in every branch of the industry.

Third—Distributional problems. While less will be said at this point as to these particular problems, they are probably the most

important confronting industry today. Repeatedly during the past year economists and business men have referred to distribution as the weakest link in the chain of American industry. The efforts of the Chamber of Commerce of the United States and Secretary Hoover of the Department of Commerce in bringing about the formation of a National Distribution Conference is greatly to be commended. Trade associations are already appointing Committees on Distribution to co-operate with the National Conference. Educational work must precede actual accomplishment and because of its very difficulty this problem of distribution will doubtless be able to attract the keenest minds in business.

There is a fourth problem which might possibly have come under some one of the immediately preceding paragraphs and yet it seems to the writer that the problem of outside relationships, particularly with other national organizations and with the federal government, should be considered as separate problems. Anyone who has made a study of the development of trade associations in this country, or even observed these developments, has doubtless seen the need of co-operation between trade associations in meeting common problems and common contacts, and the larger need, possibly, of the development of a unified front in the contact of trade associations with the federal government. It is conceivable that unified action among the trade associations of the country could not only meet effectively the apparent tendency to cause the government to become a directing force in business, but could change this tendency so that the government may become an instrument for helpful development of business. This statement is made without any thought of business having more control in government than the other great factors in society, and without any thought of having business act without the law or in an unethical way, but rather as a unified economic force for the sanest possible upbuilding of business and industry as a whole.

To repeat the opening sentence of this discussion, the trade associations as agencies of service to industry are a permanent part of the business and the economic life of this country. There is very great opportunity before them in creating conditions that will make for higher standards in business, for harmony and peace among business men, for more effective production and distribution, and finally for the carrying on of the business of the entire country in such a way as to give all who are concerned in any way with business or industry a fuller and a more satisfactory life as individual men and women.

Brest-Forster-Dixfield Expansion

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., November 16, 1925.—Another addition to the list of local manufacturing concerns allied directly with the paper industry is the branch factory of the Brest-Forster-Dixfield Company, New York, makers of paper butter dishes and water proof food containers. Unnoticed and unsung this plant, the fourth of a chain of branches, is established in the carton division of the Standard Paper Company, occupying about 15,000 square feet of floor space in the basement and having a capacity of between 600,000 and 700,000 butter dishes per nine hour day.

J. H. Britton is manager of the Kalamazoo unit. He reports that expansion has been rapid to date, the concern growing from 5,000 square feet to three times as large. Eleven automatic machines, product of the Saranac Machine Company, Benton Harbor, and other equipment have been installed at a cost of $100,000. At one operation these machines cut, print, shape and staple butter dishes, also counting them accurately, thus facilitating packing.

"This is aur quiet season," said Mr. Britton, "but we are equipped to turn out a considerable production, easily 1,500,000 daily if we operate on a 24 hour basis. We are now employing twenty hands. So much of our work is automatic that the labor proposition will never be a serious one. Kalamazoo is an ideal location for this industry. It is a fine shipping point and we are also able to secure all our raw stock from the Standard Paper Company. The light grade of paper board used comes to us trimmed to the exact requirements and in huge rolls, thus making it easy to handle."

MONTREAL GLEANINGS

(*Continued from page 23*)

Iroquois Falls, Ont. Abitibi is at present turning out 500 tons of news print a day. This will eventually be increased by 300 tons. While the power has been turned on at the mills from the new power development, it will not be used by the new electric boilers which the company has installed to utilize its surplus power until toward the end of the month.

Duke-Price Power Line

The latest development in the Duke-Price industrial project in the northern part of Quebec is the application made by the Quebec Develoment Company to the Public Service Commission for authorization to construct the most powerful transmission line in the province of Quebec, carrying voltage of 154,000, with temporary length of 17 miles. The power lines will be suspended 58 feet in the air on metal standards set 700 feet apart, and will link up Maligne Isle with St. Leonard, where they will serve the Aluminum Corporation. At a later date, the lines will be extended to Port Alfred to supply industries of that section with power. Meanwhile, at a price not divulged, but said to be slightly over $1,000,000, the Aluminum Company of America is understood to have purchased the Roberval-Saguenay Railway, formerly operated by the Chicoutimi Paper Mills. This railway runs from Ha Ha Junction to Port Alfred, with a branch line to Chicoutimi. The length of the line is 28 miles, with an electrical section of a few miles running to Chicoutimi.

Export of Power to Be Prevented

In view of water power developments expected at points near the Ontario border, the provincial government of Quebec has altered its terms of lease contracts for the harnessing of such water falls, so as to prevent any of the h.p. being exported to the United States. Not satisfied with the clause which, in the case of the Grand Decharge and the Chute a Caron works, prevented the export of power across the border, and not even with the ordinary condition that permits granted could be altered from time to time, an additional clause has been inserted in the lease, by which power, even when taken to another province, cannot be exported from that province to the United States, or the lease may be subject to cancellation. A few recent leases have been subjected to such terms, and in future, until the policy of the prime minister has been altered, a protective clause must be signed by those intending to harness waterfalls in this province. Though not confirmed, it is said that it had been planned by certain interests to take power into another province, and from there to export it for the benefit of certain American interests. However, the recent move made by the Government, associated with the usual protective clauses, is sufficient to meet the requirements. It is understood that, recently, some of the interests planning huge developments along the Gatineau or Ottawa rivers, have consented, with reservations, to cooperate with the Government in that sense.

Buenos Ayres Taking B. C. News Print

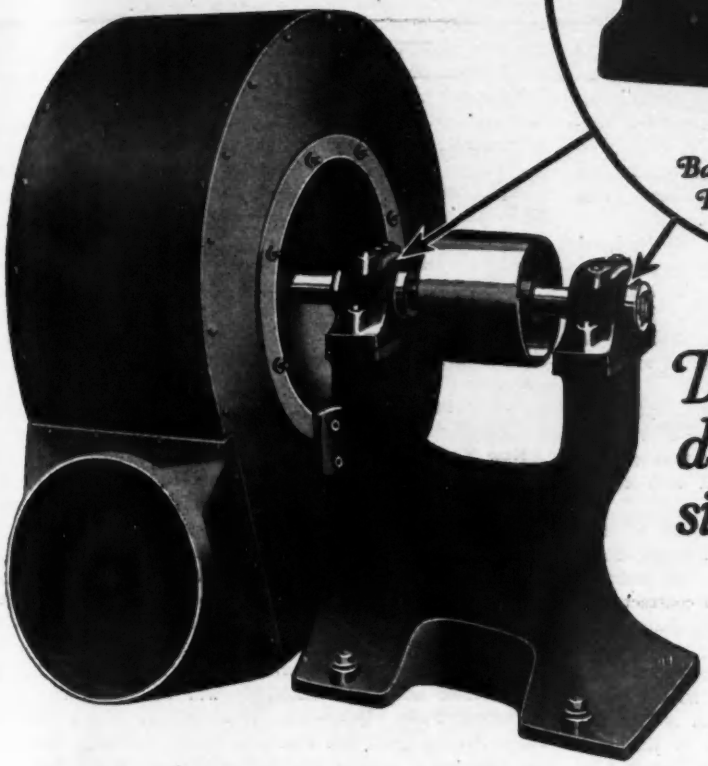
British Columbia paper is now selling on a widening market. It supplies Western Canada and a large part of the Western Pacific Coast States; 1,000 tons monthly go to Buenos Aires; several orders were recently sent to France, which it is expected will become a steady market. A market has now been opened at Antwerp. As a result of the new Canada-Australia trade treaty, paper manufacturers are looking for a big demand from that market, which had hitherto been restricted due to a high import duty demanded.

British Columbia Ties for India

A parcel of 2,500,000 ft. of creosoted Douglas fir ties was recently shipped from Vancouver, B. C., to India. India has become a regular purchaser of this material, for it has been found that British Columbia fir, when so treated, is apparently the only timber that will resist the destruction of wood by the white ant of the tropics, very prevalent in India.

How Buffalo Blowers were equipped with Timken TAPERED ROLLER Bearings at Minimum Expense

The Dodge-Timken Ball and Socket Spherical Roller Bearing Pillow Block



Dodge has solved a difficult and expensive problem for many machinery manufacturers

HERE is a striking, yet typical example of what can be accomplished in duplicate machinery design by the use of Dodge Timken Ball and Socket Pillow Blocks.

In this case it was only necessary to make slight changes to one pattern and the problem of applying Timken Tapered Roller Bearings was effectively and economically solved.

In addition to Dodge-Timken Roller Bearing Pillow Blocks, a complete line of standardized Dodge-Timken unit mountings is available to machinery manufacturers who desire to apply Timken Roller Bearings to their product with minimum expense for re-design, new patterns, etc.

The Dodge-Timken line is characterized by the ruggedness that means continuous power saving, troublefree service.

Dodge-Timken Roller Hanger Bearings and Pillow Blocks are performing successfully in the largest industrial plants in the country—Dodge-Timken unit mountings have been successfully applied to woodworking, paper, dough mixing, ventilating, conveying and other types of machinery.

A Dodge engineer qualified to analyze your requirements and to work with your own engineers is subject to your call. Why not arrange now to have him call and show how you can add important selling features to your product at minimum cost.

DODGE MANUFACTURING CORPORATION
Mishawaka, Indiana

Branches: Boston New York Newark Oneida Philadelphia Pittsburgh Cincinnati
Chicago St. Louis Minneapolis Seattle San Francisco Houston Atlanta

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Chester, Pa.—The Scott Paper Company, manufacturer of tissue papers, is arranging for enlargements in its plant, to include the construction of a new paper-making unit and the installation of additional machinery to increase the present output about one-third. New finishing equipment of semi-automatic type will be installed. The company has disposed of a preferred stock issue of $500,000, a portion of the proceeds to be used for the expansion. A. H. Scott is president.

Milwaukee, Wis.—The Slocum Straw Works, 656 National Avenue, has awarded a general contract to the Quast construction Company, 964 Forty-seventh street, Milwaukee, for the erection of a new two-story and basement plant, 60 x 65 ft., on National Avenue, estimated to cost approximately $42,000, including equipment. Work will be placed under way at an early date.

Philadelphia, Pa.—Eugene Carraine, operating a plant at 1620 Mifflin street, for the manufacture of cardboard products, has plans for the erection of a new mill on N street, near Kensington Avenue, reported to cost close to $40,000, with equipment.

Erie, Pa.—The new mill addition to be erected by the Hammermill Paper Company, East Lake Road, will be one-story, 32 x 37 ft., and will be equipped as a digester unit. The structure will cost about $65,000, with equipment. A general contract was awarded recently to the Henry Shenk Company, Pittsburgh, Pa. E. R. Behrend is president.

Moss Point, Miss.—The Southern Paper Company, Moss Point, has acquired a tract of about 50,000 acres of land in Jackson County, comprising cut-over pine property, and is reported to be planning for the development of a portion of the tract for pulp supply. Equipment for operations will be installed in the near future.

Hartford City, Ind.—The Hartford City Paper Company has completed plans and will soon proceed with the erection of a new one-story unit at its plant, to be 40 x 46 ft., equipped as a turbine building. The Green Engineering Company, General Motors Building, Detroit, Mich., is engineer.

Henniker, N. H.—Officials of the Monadnock Paper Mills, Inc., Bennington, N. H., have acquired the mill and business of the Contoocook Valley Paper Company, Henniker, and will take immediate possession. The new owners have formed a company of the last noted name to take over and consolidate both organizations. Plans are said to be under consideration for extensions and improvements in the Henniker property. Arthur J. Pierce, Bennington, heads the new organization.

Evansville, Ind.—The Tri-State Paper Company is said to be arranging for the early rebuilding of the portion of its local plant recently destroyed by fire with loss of about $12,000.

Big Falls, Minn.—Work is being started on foundations for a new local paper mill and it is proposed to proceed with superstructure at an early date. The plant is reported to cost in excess of $250,000, including equipment, and is to be ready for service during the summer of next year. The project is being carried out by E. W. Backus and associates. It is understood that the Backus-Brooks Company, Minneapolis, Minn., is interested in the project.

Valdosta, Ga.—A new company is being organized by W. J. Lawrence, Kalamazoo, Mich., and C. H. Knight, Easton, Pa., to construct and operate a pulp and paper mill in this section. A tract of about 200,000 acres of land in Clinch and Echols Counties, has been taken over, it is stated, for a consideration of $2,000,000. Work on the initial unit of the proposed plant will be started at an early date. It is reported to cost in excess of $300,000, with equipment.

Chillicothe, Ohio—The Mead Pulp and Paper Company, Dayton, Ohio, is arranging for the installation of additional equipment at its mill, in connection with general plant expansion, to develop an increase of about 40 tons per day in present output. Considerable auxiliary machinery will also be installed. The company is disposing of a note issue of $1,250,000, a portion of the fund to be used for the extension program.

New York, N. Y.—Fire, November 5, damaged a portion of the equipment and stock at the plant of the Spaulding Fibre Company, 484-90 Broome Street, manufacturer of fibre specialties. An official estimate of loss has not been announced. It is planned to replace the damage at once.

Wilmington, Del.—The Jessup and Moore Paper Company, Commercial Trust Building, Philadelphia, Pa., has arranged a new bond issue of $2,250,000, a portion of the fund to be used for proposed extensions and improvements in its Augustine mills, near Wilmington, Del., for which plans are now being arranged. Considerable additional machinery will be installed.

Chelsea Falls, Que.—The International Paper Company, Three Rivers, Que., and Pershing Square Building, New York, has awarded a general contract to Fraser, Brace, Ltd., Montreal, Que., for the erection of its proposed news-print mill in the vicinity of Chelsea Falls, consisting of a number of units, estimated to cost close to $10,000,000, with machinery. The same contractor has also secured an award for a hydroelectric power development in this same district, for service at the mill, to cost in excess of $3,500,000, with equipment. The company has arranged for a capital increase from 500,000 to 750,000 shares of stock, no par value, and will develop additional working capital of $10,000,000, for general expansion.

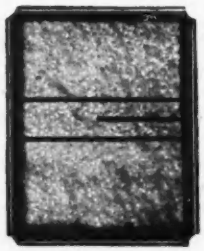
Powell River, B. C.—The Powell River Company, Ltd., has awarded a general contract to the Armstrong-Morrison Company, Ltd., Bower Building, Vancouver, B. C., for the construction of a new two-story and basement unit at its local mill, to be reinforced concrete and steel, 150 x 455 ft., estimated to cost close to $300,000. Work will soon be placed in progress.

Liverpool, N. S.—The MacLeod Pulp and Paper Company, Liverpool, has tentative plans under consideration for the construction of a new pulp and paper mill unit for considerable advance in output. It is expected to cost close to $500,000 with equipment.

Montreal, Que.—The Belgo-Canadian Paper Company is

(*Continued on page 70*)

A 155x152" finished cylinder wet felt on the scale.



You will recognize Hamilton felts by two blue lines running the full width of the felt with one shorter blue line between them.

There Is a Rapidly Growing Demand for No. 4 Top Felt

THERE has been a noticeable and steady increase in the orders received by the Miami Woolen Mills for the Hamilton No. 4 Top Cylinder Wet Felt. This felt meets exceptionally well the conditions that are present in modern high speed Container Board and Chip Board mills.

The feature of this felt that is especially appreciated by mill men is the fact that it will run until it is worn out with less trouble from "picking" on the machine than they have ever experienced with any similar kind of felt.

The good work of No. 4 Cylinder wet is a matter of comment among paper men. They have been telling each other about it. And our order books have shown a steady gain on that item. Once they try it they come back regularly for more.

Hamilton Felt service men have studied felt troubles in hundreds of mills. Whether you are using Hamilton felts or not, call on them for help, when you need it.

SHULER & BENNINGHOFEN **Hamilton, Ohio**

THE MIAMI WOOLEN MILLS **FOUNDED 1858**

Hamilton Felts

Wisconsin Paper Mills Extensive Improvements

Flambeau Paper Co. Erecting Important Additions to Park Falls Plant—Modern Machinery Equipment Being Installed—John Strong Appointed Receiver for Island Paper Co., of Menasha, Wis.—Fourdrinier Wire Makers Handicapped by Foreign Competition

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 12, 1925.—While the Flambeau Paper Company has sold its Ashland paper mill, and while that plant has since been dismantled, the company has concentrated upon its Park Falls mill and is making very extensive improvements there.

The company is erecting a new machine shop, carpenter shop, storeroom and locomotive shed which is to be of brick, steel and concrete and is being located a short distance north of the present sulphite mill. The brick architecture conforms with the general style of the rest of the plant.

At the same time, the Flambeau company is building a new beater room, 60 by 88 feet in size. It is being constructed of steel and concrete and the walls of brick, also conforming with the general style of architecture.

In this beater room there will be installed six new 100 "Jones Beaters" of the fast circulating type. The concern is also rebuilding two of its present Horne beaters, which will be used as stroke beaters. These beaters will all be driven in pairs by Allis-Chalmers motors, and the texrope drive will be used. This drive is being manufactured and installed by the Allis-Chalmers Company, and it is understood that this installation will be the first beater drive of its kind in the country.

The Appleton Machine Company, of Appleton, Wis., is building for the Flambeau Paper Company, one of their No. 2 Ball Bearing Jordons to be driven by a 150-horsepower Allis-Chalmers Synchronous motor. This concern will also rebuild one of the Flambeau's Jones Imperial Jordons which will be motorized. All of the Jordons and beaters will be driven by Allis-Chalmers motors. In addition, the Park Falls mill is installing alum and sizing systems, so that the alum will be put in beaters in a solution and the size will be emulsified before being put into the beaters.

Last month, the Flambeau Company installed a Voith high pressure stock inlet on its No. 1 Beloit paper machine, and within the next thirty days it expects to complete a Johns-Manville Transite Hood equipped with two new Bailey exhaust fans over the No. 2 paper machine.

Besides these changes, the company is also installing a Pax automatic telephone exchange of 100 phone capacity. At present there are about 35 telephones throughout the plant.

Island Paper Co. Goes Into Receivership

The Island Paper Company, of Menasha, Wis., went into receivership Wednesday, November 11, following the company's inability to meet all the demands of its creditors.

Hugh Strange, secretary and treasurer of the John Strange Paper Company, Menasha, was appointed receiver for the company in circuit court at Oshkosh, Wednesday noon. Mr. Strange qualified for the office by filing a bond for $50,000 and immediately took possession.

The company's liabilities were listed at $225,000, while the assets consist of the paper mill, machinery, manufactured stock and accounts receivable. The current assets were estimated at approximately $50,000. There is no bonded indebtedness on the mill.

It has not as yet been determined whether the mill will again be put into operation, or whether it will be placed on the market for sale. A meeting of creditors will be held in the near future to decide on the course of procedure.

The turn of events was not altogether unexpected here, as there have been many rumors that the company was rapidly approaching a crisis. A number of stockholders' meetings were held within the last few weeks in an effort to stave off a crash.

The Island Paper Company is one of the oldest paper mills in Menasha. The closing of the mill early this week threw a large number of men and women employes out of work. The mill employed an average of 125 to 150 workers and had a monthly payroll of about $14,000.

Officers of the company were: D. T. H. Mackinnon, president; William Strange, vice president; A. N. Strange, secretary, treasurer and manager; August Krull, superintendent. The company operated a paper mill and a sulphite mill, the former using ten 500-pound beaters, two 68-inch and one 82-inch fourdrinier machines, making wrapping paper and having a capacity of 70,000 pounds of paper every 24 hours, and the latter mill using three digesters and two wet machines, with a daily capacity of 60,000 pounds.

Bouck, Hilton, Kluwin and Dempsey, of Oshkosh, and Frank, Wheeler and Pellkey, of Appleton, are the attorneys for the receiver and most of the creditors, while Bullard and Spencer, of Menasha, are the attorneys for the company.

Higher Tariff Needed for Woven Wire

Practically all factories in the United States engaged in the manufacture of fourdrinier wire have been operating at only two-thirds of their capacity during the last three years, according to John D. Watson, secretary and manager of the Wisconsin Wire Works, Appleton. No immediate relief is in sight either, in the opinion of those connected with the industry.

The depression is due entirely to competition from Germany, it is declared, and will not be remedied until a higher tariff is placed upon woven wire imported from that country.

"Germany can manufacture woven wire, pay the tariff, which now is 35 per cent of the German value, take a fair profit, and still place the product on American markets at a price lower than American firms can manufacture it," Mr. Watson said. "This condition has existed for the last three years."

During the war, woven wire factories enjoyed more business than they could possibly handle, he declared. Foreign countries not participating in the war offered higher prices than were being paid in this country, but their offers were turned down.

Rather than sell at a better price to foreign countries, domestic manufacturers preferred to supply the demand of domestic customers. Now that the war is over and a foreign country is supplying the same product at a lower price, domestic buyers are turning their attention to the foreign product, Mr. Watson said.

"Some factory heads have suggested that if home firms could cut down on their operating expenses, they might be able to meet the foreign competition," he continued. "Nothing is farther from the truth. If we could get our workmen for nothing, Germany could still sell the product at a profit, in addition to paying the tariff at a lower price than we can produce the wire for."

The only solution to the difficulty is the enactment of a higher tariff on the product by Congress, Mr. Watson says. Because of cheap labor and generally cheap prices in Germany, American manufacturers cannot possibly hope to compete with Germany and will suffer until a protection through higher tariff is given them, he said.

The Fox River Valley is something of a center of the woven wire industry. There are three wire factories in Appleton and one in Menasha.

Conditions in Chicago Paper Market Unchanged

Later Shipments Than Usual Pointed Out as Hopeful Sign—Coarse Paper Merchants Reported To Be Doing Well—Book Papers Continue in Excellent Demand—Fall Business in Fine Papers Not as Good as Anticipated.—Bright Future for Paper Industry Predicted

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., November 14, 1925.—With various companies handling the same lines of paper reporting differently, the Chicago paper market is still apparently as good as it has been for the past month. One fine paper company reports itself three weeks behind in orders, so rushed that it cannot handle any more business for a time; another reports that business this month is poor, and that for that particular company this year is not as good as last year. But there is one point on which all the paper companies agree—there has been noticed a distinct showing upon shipments from the mills.

This is a general condition, affecting all parts of the fine and coarse paper divisions. And, generally, it is taken to mean that there is an increase in business. Because there are so many shipments coming later than usual, is the best sign that can be pointed to this week as really hopeful. But again, there is the accompanying fact that there is nothing at all on the market which can be said truthfully to be discouraging.

Thus Chicago's optimism is being upheld, by the same principle which all the old German pessimists used. As there is nothing bad, it must be good. Business in Chicago is not rushing, but neither is it stopping. And this is a firm base of optimism.

Fine Papers Have Fair Market

In the fine paper division, there are many companies doing excellent business. One of the largest reports an overwhelming business for their company. The majority of fine paper houses, nevertheless, stick to the statements made previously that the Fall business which has been expected as a regularity has not come. The months of March, October and November are usually the peak business months for all businesses. Chicago paper has not had its proper share this fall, as far as the fine paper men are concerned.

Generally speaking, a fine paper merchant put the increase in business for the entire paper trade at 4 per cent over last year. The speaker was a prominent paper merchant, and an official in one of Chicago's largest companies. Bookpapers, who had an excellent market in Chicago last week, are still continuing this week with a fine demand.

Coarse Paper Market Still the Best

Coarse paper merchants are still making more money than the other paper men, due to the coming of their fall business. In this case the ship didn't get lost. Many of the wrapping paper companies have withdrawn prices, showing large increases in business, and a coming shortage in ground wood is rumored. The coarse paper men have been expecting an increase in their prices for some weeks, and, although they haven't come yet, it is a dogmatic statement from the merchants which says increases in prices are bound to come.

Business has increased this week in coarse papers, until it comes near being the peak of the year. It is better now than it has been in two weeks, although the past two weeks have also been fine in business, and it is better now than at any time last year. The paper bag market is said to lead in kraft papers.

Paper Prices Remain Unchanged

Prices in general have shown no changes this week. The expected increases in coarse papers is the only known expected change. The stability of Chicago prices has been one of the best points about the market here for the past month, and with a market which could be depened upon the merchants have been able to gauge business well.

Especially good markets this week have been the book papers, news print, and print papers of all kinds. Kraft papers are especially good, but have been so for some time.

Paper Stock Market Slightly Better

The market for paper stock, which has been so poor in Chicago for some time, shows slight increases in individual companies this week. It is a hopeful sign, and is putting more life into the market and the men themselves. Kraft paper and hard white shavings are the salient and saving items which account for the increases. Soft white shavings have a fairly good market.

Paper Merchants Optimistic

The general trade in paper in Chicago this week is honestly active, and there are few merchants who are not willing to predict good things to come. There are no new changes to relate, because there are none which warrant the relation. All the paper men are satisfied except a few of the less optimistic ones, which is more of a matter of their nature than their businesses, and some of the paper stock men.

Miscellaneous Trade Notes

The James White Paper Company has sent out football schedules for the season, and the schedules for the remainder of the season were sent out to the trade and their many customers during the week. At the bottom of the schedule are given the particulars about the paper it is printed on, for the information of possible buyers: "This stock is 20 x 26 80, 23 x 33 117, buff White Buckeye."

The Miami Paper Company, of West Carrolltown, Ohio, is sending to the trade samples of its Triton Bond, the "direct by mail bond paper." The circulars are white and decorated in blue. Triton Bond is handled in Chicago by the Chicago Paper Company.

The J. W. Butler Paper Company is sending out the admirably printed books which advertise the "Buckeye Text" paper of the Beckett Paper Company, of Hamilton, Ohio. The book contains forty pages, only twenty of which are printed upon, and is illustrated with many different kinds of pictures, woodcut, line drawing, etching, etc. The Butler company is also sending out its samples of Brother Jonathan Bond, with its usual high sense of advertising.

Other samples noted this week are a large envelope full of joint products of the S. D. Warren Company and the National Envelope Company. The samples are of Warren's standard booklet envelopes, as follows: No. 1 India, 2 white, 3 Sepia, 4 India, 5 white, 6 Sepia, 7 India, 8 white, 9 Sepia and 10 India. The rear of the swatch contains a price list. Distributors in Chicago are the Paper Mills Company and the Chicago Paper Company. The letter accompanying the samples is headed with the name of the United States Envelope Company, of Springfield, Mass.

Noble Gillett, of the Chicago Paper Company, has returned from his trip to Boston, where he attended the Direct-By-Mail Convention. His report is full of interesting details. The convention was conducive to the further development of that form of advertising, in conjunction with other types, principally newspaper and magazine. Direct-By-Mail does not hamper other forms of advertising, but rather helps them. One kind calls for another. Advertising in the newspapers can be better complimented by direct-by-mail, and vice versa.

E. V. Fox, of the Tomahawk Kraft Paper Company, and the Ontonagon Fibre Company, will leave Monday on a trip East with semi-bleached kraft and other specialties.

It is reported that the Library Bureau has been purchased outright by the Rand-Kardex company.

Chester N. Stevens, President of the Stevens Paper Mills, of Windsor, is in Chicago for a few days.

New York Trade Jottings

Emanual Salomon is now associated with Stone Brothers Company., of 155 Spring Street, being connected with the cotton rag division of the company.

* * *

M. R. Wilson, vice-president and general manager of the Abitibi Paper Company, of Montreal, and Mrs. Wilson, arrived in New York for a visit last week.

* * *

B. S. Proper, sales manager for the Eaton Dikeman Company, manufacturers of filter paper for funnel, filter press or filtering machine, spoke on "Filter Paper and it's use" before the class in Laboratory Management, Department of Chemistry, Columbia University, on Saturday, November 14.

* * *

In its issue of November 12 the PAPER TRADE JOURNAL stated that Hans Weinberger, of 456 Fourth Avenue, New York, would visit Brazil shortly for the purpose of establishing a paper mill there. This is incorrect, Mr. Weinberger is already connected with a paper firm in Brazil. He plans no enterprise of his own as far as it is known.

* * *

An accounting filed last week in the Surrogate's Court in the estate of Brian G. Hughes, paper box manufacturer and humorist, who died in December, 1924, leaving an estate of more than $400,000, of which $102,000 was in securities and the balance in real estate and factory interests, showed that from December 5, 1924, to November 5, 1925, nearly a year, the income was $82,835. The three children—Brian G. Hughes, Jr., and Bell and Clara Hughes, all of 1984 Madison avenue, get the residuary estate and interest from some small trust funds.

Glen Falls Reforestation Plans

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., November 14, 1925.—The city of Glens Falls, one of the largest pulp and paper manufacturing centers of Northern New York, has placed an order with the Conservation Commission for 1,000,000 two year old white pine seedlings to be delivered next spring for planting in its municipal forest, according to announcement by the State Conservation Commission. This is one of the largest single orders for spring planting. Northern New York pulp and paper manufacturers have also placed good sized orders for young trees to be planted in the spring.

Glens Falls' city forest was started in 1910 with a plantation on the city's watershed. It now covers about 1500 acres and is the largest municipal forest in the State, containing some of the finest plantations of white pine to be found in New York State.

For the first time since the reforestation movement began the distribution of young trees from the Conservation Commission's nurseries this year passed the 10,000,000 mark. At the close of fall planting season there had been sent out from the nurseries 10,410,570 trees. Of this number pulp and paper firms took approximately 2,000,000. A number of the larger pulp and paper concerns in Northern New York follow a regular policy of reforestation and make large plantings each year.

Harding Paper Mills To Be Sold

HAMILTON, Ohio, November 14, 1925.—In the foreclosure suit of the Old Colony Trust Company, New York, vs. the American Writing Paper Company, United States District Judge Smith Hickenlooper, at Cincinnati, last week, enered an order directing sale of the Franklin and Excello Mills of the defendant company, located in this judicial district and known as the "Harding properties," in pursuant to the decree of foreclosure entered by United States District Court for the District of Massachusetts. Sidney L. Willson, as receiver, is ordered to sell, in connection with the properties covered by the Old Colony mortgage, the stock of the Franklin Hydraulic Company, belonging to the American Writing Paper Company, for a price which shall bear the same ratio to the price to be paid for the mortgaged property as $15,500 bears to $214,500.

Big Paper Carrier Makes Record Passage

The *Humber Arm*, the 9,000 ton ship owned by the Newfoundland Power and Paper Company at Corner Brook, Newfoundland, docked last Thursday at the Army Basin, Brooklyn, New York, after making a record trip from its base.

The vessel, which is a giant ice breaker of the most modern type, carried 4,800 tons of news print on decks arranged especially for this purpose. The entire passage, including a stop at Boston to land cargo, consumed only four days, a shorter length of time, it is said, than it would take by way of rail through Canada.

Aboard the vessel, which is the most modern "paper" ship of its kind, measuring 440 feet from bow to stern, were John Stadler, managing director of the Newfoundland Power and Paper Company, G. Meerbergen, managing director of the Newfoundland Export and Shipping Company, and S. F. McHenry, paper mill superintendent.

About 2,900 rolls of newsprint, or almost one third of the cargo, was landed in New York, it was said. Prominent persons in the local paper trade, including members of the firm of the Bowater Paper Company, selling agents for the Newfoundland concern, and R. S. Kellogg, secretary of the New Print Bureau, were guests aboard the vessel at an inspection. The *Humber Arm* journeyed from New York to Philadelphia, where the rest of her cargo was unloaded.

This is the second trip the ship has made since she was built. She can carry 5,000 tons of paper. Her steel reenforced prow can push through the most stubborn ice fields captains encounter in the Newfoundland waters. The Newfoundland paper mill is located near the mouth of the Humber River.

The *Humber Arm's* sister ship, the *Corner Brook*, recently built in England, is resting in dry dock, it was announced, and will be ready to make her maiden voyage with a cargo of paper next April. Both boats are specially designed for carrying paper. The *Corner Brook* is also an ice breaker.

Rental Charges for New York Water Power

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., November 14, 1925.—The fixing of rental charges for the use of surplus canal waters in New York State has been started by the New York State Waterpower Commission. Many pulp and paper mills in Northern and Western New York are using water power derived from State waterways and the subject, therefore, is of considerable interest to the pulp and paper industry. Mills and factories along the canalized Mohawk River have been using waterpower from this source for years without any charge. The State Waterpower Commission, however, following a survey made by State engineers, has ruled that all corporations and others using the State waterways for power or other purposes shall pay for the privilege according to the amount of water consumed.

The Waterpower Commission this week fixed the rental charge for surplus canal waters at Medina at $10,000 annually. A joint application for the use of this power was made by S. A. Cock & Co., Inc., and the Western New York Utilities Company. The rental charges for the use of surplus waters at Rochester harbor by the Rochester Gas and Electric Corporation has been fixed at $50,000 a year. Hearings on these rates will be given on Dec. 10.

A preliminary permit, covering the use of waterpower in the Niagara Gorge, was granted to the Lower Niagara River Power and Water Supply Company by the Commission, conditioned upon the acceptance by the company within thirty days. This company is said to supply power to a number of paper mills in the Niagara Falls section.

PAPER TRADE JOURNAL
ESTABLISHED 1872

With Which Is Combined

PAPER

The Magazine of the Paper Industry

HENRY J. BERGER, Editor

Member A. B. C. Audit Bureau of Circulations

Vol. LXXXI New York, November 19, 1925 No. 20

LOCKWOOD'S DIRECTORY OUT

Lockwood's Directory of the Paper and Allied Trades is off the press and is now being delivered to subscribers. This issue of the Directory is a record breaker in every respect. Not only are there more text pages, but the book also has been more generously patronized by representative advertisers than ever before in its history.

This is the fifty-first annual edition of this standard work of reference on the pulp and paper industry of the North American continent. Although the number of new mills that has been entered in this edition of the Directory is comparatively small, changes in the existing mills have been very numerous, showing that the most representative concerns in the industry continue alive to the need of constantly keeping their equipment thoroughly up-to-date. Because of the unsettled conditions in the industry, a greater number of mills than usual has been obliged to suspend operations or go out of business altogether. All these changes have been carefully noted in the Mill Section of the Directory. All the other sections of the Directory also have been corrected in a very painstaking manner and the information presented in the various sections may be depended upon as being as reliable as it is possible to print in a work of this kind.

In preparing the data for this edition of the Directory, the publishers, as in past years, have again found considerable misunderstanding existing regarding the purpose of a number of sections of the Directory. To make plain the purpose of these sections, it is again mentioned here that the Mill Section is designed only for the listing of manufacturers of pulp and paper; the classified list is designed to summarize or recapitulate the products given in the reports of the pulp and paper mills; the specialty section is designed to contain only the names of converters of paper goods from raw paper, and the watermarks and brands section is designed only for actual owners of watermarked and branded papers and not for the distributors of such papers. In maintaining strictly the rules of eligibility for the various sections, the publishers have been influenced solely by the thought of making the Directory most valuable to the greatest number of subscribers.

Subscribers are urged to read carefully the information printed at the beginning of each section, as only in this way is it possible to use the Directory to best advantage.

Owing perhaps to the unsettled conditions through which the industry has been passing the advanced sales of the Directory have been unusually large. This and other indications point to the fact that this edition will be early exhausted and for this reason it will be advisable for prospective subscribers to get in their orders early. Obsolete editions of the Directory are worse than useless. This statement is especially true just now because the changes in the industry this year have been so numerous.

The price of the Directory is $7.50 per volume, post paid. Orders should be sent to the Lockwood Trade Journal Company, Inc., 10 East 39th Street, New York.

RESEARCH WORK PAYS

American industry is saved annually approximately a half billion dollars through the conduct of laboratory research work, as shown in a bulletin on cooperative industrial research just issued by the Department of Manufacture of the Chamber of Commerce of the United States. The bulletin summarizes the research efforts of some eighty national trade associations, and estimates that American manufacturers expend about thirty-five million dollars annually in carrying them on.

"This sum," the bulletin specifies, " is not meant to imply that research is an inordinately expensive effort, but merely to indicate its importance as a trade association activity. Expenditures of individual trade organizations for research activities range from only a few hundred dollars to several hundred thousand dollars a year The National Canners Association, for example, spends well over one hundred and twenty thousand dollars a year for research. The National Lime Association appropriates one hundred thousand dollars, the Portland Cement Association one hundred thousand dollars, the National Wood Chemical Association fifty thousand dollars, and so on down the line."

The department in its survey of research work found that the majority of trade associations spent more than twenty thousand dollars each annually in carrying on this work.

In referring to the advantage gained from laboratory research, the department points out that "research or systematic investigation has so abolished rule o'thumb and guesswork from industry and business that definite specifications are now the rule.

"Heavy expense for laboratories and equipment limiting their availability to a few," the department explains, "has been overcome largely by the cooperative movement in many lines of industry through their trade associations. These joint efforts are of an unselfish character involving as they do the common interests of all and are made primarily for the advancement of industry."

EMPLOYMENT IN THE PAPER INDUSTRY

September employment figures in the paper, pulp, and paper box industry have just been made public by the Bureau of Labor Statistics, Department of Labor, showing that replies were received by the Bureau from 204 paper and pulp mills which reported their em-

ployment in August at 53,628, decreasing in September to 53,126, a decrease of 0.9 per cent. The payrolls in these plants also decreased from $1,386,562 in August to $1,327,037 in September, a decrease of 4.3 per cent.

One hundred and fifty-two paper box plants reported their employment in August at 16,118, increasing in September to 16,957, an increase of 5.2 per cent. The payrolls in these plants also increased from 353,099 in August to 355,278 in September, an increase of 0.6 per cent.

The Bureau also received replies from 176 paper and pulp plants which reported their employment in September of last year at 49,356 increasing in the same month of this year to 50,250, an increase of 1.8 per cent. The payrolls in these plants, on the other hand, decreased from $1,269,325 in September of last year, to $1,266, 880 in the same month of this year, a decrease of 0.2 per cent.

One hundred and thirty-nine paper box plants reported their employment in September of last year at 15,748 increasing in the same month of this year to 15,884, an increase of 0.9 per cent. The payrolls in these plants, on the other hand, decreased from $336,818 in September of last year to $332,537 in the same month of this year, a decrease of 1.3 per cent.

Paper Jobbers Discuss Locarno Conference

Last Thursday night, at the Hotel St. George, the Metropolitan Bag and Paper Jobbers' Association held their regular monthly meeting and dinner.

J. S. Barshay, 38 Park Row, New York City, counsel for the Association, in discussing the Locarno Conference, stated that the reconciliation of Germany with the Allied Powers removed one of the powder kegs that might have inflamed the continent. The instability of European Republics, the social and economic situation in England and the smouldering of revolution in Italy, however, still remain to plague the peace of Europe.

The greatest problem of Europe today is not the payment of war debts, but the replacement of human character and intelligence lost in the war. Men make values and souls make men and it takes twenty years to replace a generation. Europe will come back as the South came back after the Civil War, but the time is not yet near, and in the interim American industry must be on the lookout.

Mr. Barshay predicted an improvement of general business conditions between now and the beginning of the new year, basing his prediction on statistics. In discussing the present instability of the paper bag market, he pointed out that it is caused more by the facts peculiar to it alone, such as the latent capacity to overproduce rather than a general industrial condition.

Philip Karlsruher, President of the Association, presided and appointed the following standing committees for the coming year:

Bags and Sacks: J. M. Berger, chairman, M. Boxerman, L. H. Heberlein, B. Silfen and C. Stein.

Wrapping Paper: A. E. MacAdam, chairman, H. Fishman, Hyman Schrier, Harry Tuttle and G. W. Batz.

Butter Dishes and Pulp Plates: Charles Safier, F. W. Hinrichs and Benjamin Marsh.

Egg Boxes, Folding Boxes and Ice Cream Boxes: Alfred Jonas, chairman, J. Moller and E. C. Droge.

Woodenware: L. H. Heberlein, chairman, H. Fishman, L. Lauricelli and Cordano Brothers.

Arbitration: A. E. MacAdam, Sr., L. H. Heberlein, J. M. Berger, Alfred Jonas and Hyman Schrier.

Entertainment: George W. Batz, A. E. MacAdam, Jr., Clarence Stein, Nelson Berger, Charles Wollny and H. L. Tuttle.

Membership: J. M. Berger, Samuel Fishman, M. Boxerman, Samuel Kronberg, Clarence Stein, H. Fishman and George W. Batz.

The Association, after due deliberation, passed a resolution condemning the practice on the part of manufacturers in selling direct to the consumer in competition with jobbers. The paper jobber is an important and essential factor in the industry and should meet with the assistance and co-operation of the manufacturer, rather than with his competition.

Bids for Government Paper

WASHINGTON, D. C., November 11, 1925.—The Government Printing Office has received the following bids for 36,500 pounds Binders' Board in various sizes: R. P. Andrews Paper Company, 6.6 cents per pound; Mathers-Lamm Paper Company, 5.1 cents; Whitaker Paper Company, 5.9 cents; Dobler & Mudge, 6.5 cents; Lindemeyr & Harker, 3.85 cents; Kerr Paper Mills Company, 3.75 cents; C. B. Hewitt & Bros., 6.5 cents; The Devey Company, 6.5 cents; and Barton, Duer & Koch Paper Company, 5.65 cents.

The printing office has also received bids for 40,000 pounds Plain Chi, Straw or News Board, 25 x 40", No. 120, as follows: Virginia Paper Company, chip board, $50.00 per tone, and newsboard $52.50 per ton; T. A. Cantwell & Company, chip board, $49.70 and news board, $52.25; Philip Rudolph & Son, Inc., chip board, $50.00; United Paperboard Company, chip board, $47.50; R. P. Andrews Paper Company, $47.25 chip board, $47.25 and news board, $49.75; Mathers-Lamm Paper Company, chip board, $44.10; Whitaker Paper Company, $49.97 for chip board, and $52.47 for news board; Maurice O'Meara Company, chip board, $47.00; Dobler & Mudge, chip board, $45.00, less 2 percent; Reese & Reese, chip board, $46.49; Lindemeyr & Harker, chip board, $47.50; and news board, $50.00; The LaBoiteaux Company, chip board, $44.95, Barton, Duer & Koch Paper Company, chip board, $48.50; and Republic Paperboard Company, chip board $49.80.

Carter, Rice & Company have been awarded the contract for furnishing the Government Printing Office with 1160 pounds (2,000 sheets) of 24 x 32", red pressboard, at 14.76 cents per pound, bids for which were received on October 26.

The R. P. Andrews Paper Company will furnish 3,043 pounds of various sizes first class chart paper at 29.5 cents per pound. The same firm will also furnish 21,750 pounds (1500 reams) of 21 x 32½", 14½ lbs., manifold onionskin paper at 22.67 cents per pound. The Aetna Paper Company will furnish 9,450 pounds (300 reams) of 24 x 38½", 31½ lbs., white bond paper at 18.16 cents per pound. Bids for all of these items were received on October 30.

The Carew Manufacturing Company will furnish 1,810 pounds of 22½ x 28½", 181 lbs., salmon index bristol board at 30 cents per pound and the Bryant Paper Company will furnish 26,000 pounds (500 reams) of 29 x 4½", 50 lbs., fifty per cent white M. F. book paper at 10.18 cents per pound. Bids for these items were received on October 2.

The Government Printing Office will receive bids on November 20 for 3,500 pounds of various sizes back lining paper.

Cuban Paper Imports From Various Sources

WASHINGTON, D. C., November 18, 1925.—A very large portion of the news print and wrapping paper coming into Cuba is being supplied by the Scandinavian countries, according to a report from Assistant Trade Commissioner, O. R. Strackbein, Havana. The quality and finish of these papers is said to be good, while the prices are lower than those quoted by American mills. Some wrapping and news print is also coming from Germany, but competition from this source is more severe in the field of cheap sulphite bonds and M. F. book papers, the prices quoted on these being from 10 to 15 per cent under those quoted on American papers. The United States continues to be the leading source of supply for the better grades of writing papers and for paper boards.

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

Some Properties of Paper*

By P. M. Hoffman Jacobsen

Definitions—Tensile Strength

(1). *Breaking Length,* denoted by the symbol *r,* is the breaking length as generally understood from the Schopper tensile test determined on a strip 15 mm. wide, with the jaws 180 mm. apart

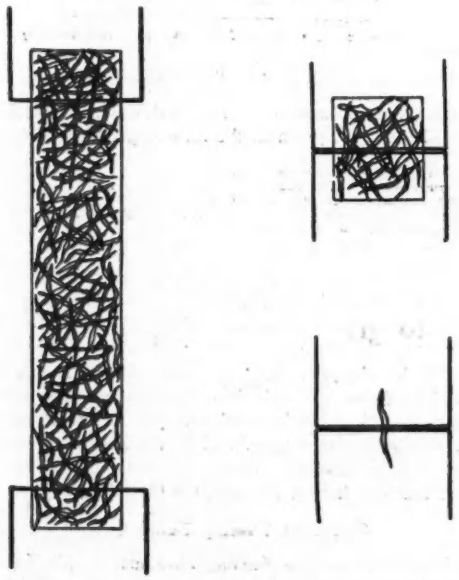


FIG. 1

(Fig. 1). It represents the average breaking lengths of strips cut in the machine direction and across the machine direction.

(2). *"Zero-Breaking-Length,"* denoted by the symbol *R,* is the breaking length obtained with a Schopper tensile tester using strips 8 mm. long by 5 mm. wide and with the jaws of the instrument brought right up together (Fig. 1). It represents the average of tests in both directions.

(3). *Fiber Breaking Length,* denoted by the symbol *F,* is the breaking length of an isolated fiber, in the longitudinal direction only, the jaws of the Schopper tester being close up together. (Fig. 1).

The breaking lengths are expressed in meters and represent, as usual, the minimum length of a strip of the material which, when suspended from one end, will break under its own weight.

Adhesion

Adhesion, denoted by the symbol *a,* is the ratio between the ordinary breaking length and the zero-breaking-length, and is expressed as a percentage.

$$\frac{\text{Ordinary breaking length}}{\text{Zero-breaking-length}} \times 100 = a = \frac{r}{R} \times 100$$

Ratios

The properties of paper vary according as they refer to the machine or cross direction, or to the mean of the two. The direction of the test is indicated by the following symbols:

Machine direction L
Cross direction .....T
Mean of the two directions .....M

The ratio of the value of a given property in cross direction to that in the machine direction is expressed as follows:

$\left|\frac{T}{L}\right| r$, $\left|\frac{T}{L}\right| R$, $\left|\frac{T}{L}\right| a$, $\left|\frac{T}{L}\right|$ elongation, $\left|\frac{T}{L}\right|$ folding, etc.

For example:

Breaking length, r
Machine direction ..... 5,000 meters
Cross direction ..... 4,000 meters } $\left|\frac{T}{L}\right|_r = 0.80$

Elongation
Machine direction 2.0%
Cross direction ..... 3.0% } $\left|\frac{T}{L}\right|$ elongation $= 1.50$

Folding Resistance
Machine direction 4C
Cross direction ..... 3C } $\left|\frac{T}{L}\right|$ folding $= 0.75$

Breaking Load and Breaking Length

The latter is calculated from the former in the usual way: the breaking load is determined with a Schopper tensile tester, and the breaking length is calculated from it by means of the weight of the paper per square meter and the width of the test strip. For instance:

Breaking load, P ..... 6 kilos
Weight of the paper .....80 g. per sq. m.
Width of the test strip .....15 mm.
Breaking length ..... r

Then $r \times 0.015 \times \frac{80}{1000} = 6$,
Whence $r = 5{,}000$ meters.

* Translated from *Le Papier* xxviii, 895-900, August 1925, by A. Papineau-Couture.

Tearing Resistance

Naturally, a distinction should be made between the breaking (or tensile) strength and the tearing resistance of paper. The latter can be determined with a Schopper tester by placing the test strip in the jaws in the manner indicated in figure 2. The counter-weight of the instrument is removed, so that after adjustment the scale divisions are equivalent to 0.100 instead of 1 kilo.

It should also be noted that the tearing resistance of paper is direction *tears* along the *machine direction*, while in the tensile test it *breaks* in the *cross direction*. Consequently, $\left|\frac{T}{L}\right|$ tearing resistance is greater than unity, while $\left|\frac{T}{L}\right|$ breaking load is less than unity.

It should also be noticed that the tearing resistance of paper is proportional to its weight; for instance, other conditions being equal, it requires twice as great an effort to tear paper weighing 200 g. per sq. m. as it does to tear paper weighing only 100 g. per sq. m. In order to facilitate comparisons, it is advisable to calculate the tearing resistance to a basis weight of 100 g. per sq. m. For example:

Weight of paper	89 g. per sq. m.
Tearing resistance (found)	L=40 g.
Tearing resistance (found)	T=65 g.
Tearing resistance (calculated to 100 g. per sq. m.)	L=45 g.
Tearing resistance (calculated to 100 g. per sq. m.)	T=73 g.
	M=59 g.

Influence of Beating

The following table shows the variation in tearing resistance according to the degree of beating:

	Time of Beating Hours	Weight in g. per sq. m.	Tearing Resistance in g.		Tearing Resistance calcd. to 100 g. per sq. m.		
			L	T	L	T	M
Standard Paper I	4	71	25	45	35	63	49
	5	94	40	50	43	53	48
	7	74	30	35	40	47	44
	7	71	20	25	28	35	32
	7	63	20	25	32	39	36
Standard Paper II	5	84	35	45	42	54	48
	6	53	20	25	38	47	43

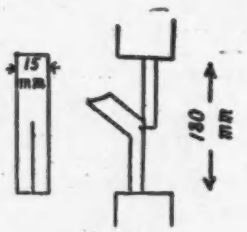


FIG. 2

These so-called standard papers were prepared from a 100 per cent bleached chemical pulp furnish, without fillers. Two series of tests had been carried out, the first set having been beaten much harder than the second one.

Examination of the above table brings out the facts that:

(a) The tearing resistance decreases with increase in beating, in spite of the fact that the tensile strength increases.

(b) The tearing strength is greater in the cross section than in the machine direction.

Mean Folding Resistance

It is a well known fact that the results obtained on the Schopper folding tester with a given sample of paper vary with the tension under which the sample is tested. The author has made a few tests which bring out the magnitude of the effect of this tension, and the results are expressed graphically in Figure 3. The widths of the test strips are used as abscissas, while the ordinates are the logarithms of the number of folds. The lower scale gives the tension in kilos calculated for a strip 15 m. wide.

It will be seen for instance, that if the imitation manila board is tested under a tension of 1 kilo with a strip 15 mm. wide, it will stand (in the machine direction) approximately 5,000 folds. If the test is repeated with a 4 mm. strip without changing the tension of the springs, so that the tension is equivalent to 3.75 kilos for a 15 mm. strip, the strip will stand only 20 folds instead of 5,000.

Here are some more experiments which confirmed the great importance of tension in carrying out this test. One or more superposed strips (either 15 mm. or 7.5 mm. wide) were tested out, and the results obtained are given in the following table.

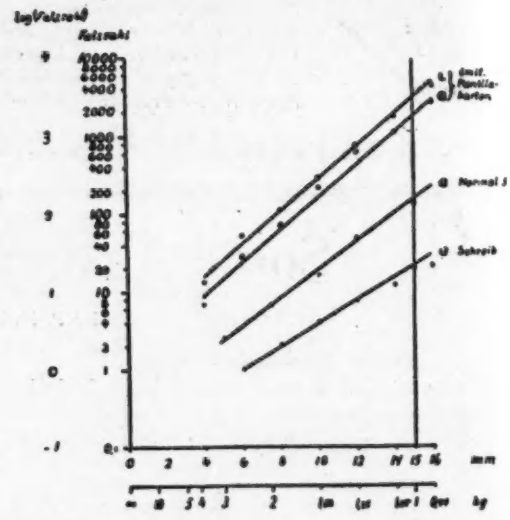


FIG. 3

Number of superposed 15 mm. strips		1	2	3
Tension in kilos per 15 mm. width		1.0	0.5	0.333
Mean folding resistance per mm. of width for a tension of 1 kilo		100	2,030	7,948
Mean folding resistance per mm. width for a tension of 1 kilo		6.7	135	530
Number of superposed 7.5 mm. strips	1	2	4	6
Tension in kilos per 15 mm. width	2.0	1.0	0.5	0.333
Mean folding resistance per 7.5 mm. width for a tension of 1 kilo	4.5	50	810	3,187
Mean folding resistance per mm. of width for a tension of 1 kilo	0.6	6.7	108	425

But it will be observed that the mean folding resistance per mm. of width of the test strip is reasonably constant when the tension per mm. of width is itself constant. For instance, if a 5 mm. strip tested under a tension of half a kilo has a resistance of 10 folds, a 10 mm. strip of the same paper tested under a tension of one kilo will have a resistance of 20 folds.

Optimum Testing Tension

The author determined the folding resistance of glassine paper in both directions, under different tensions, and also the zero-breaking-length in both directions, and obtained the following results:

	Tension for 1 strip	L	T	$\left\|\frac{T}{L}\right\|$
Folding resistance, 1 strip	1 kilo	2.135	265	0.12
Folding resistance, 2 strips	0.5 kilo	8,850	3,680	0.41
Zero-breaking length, kg. per 15 mm.		6.0	2.4	0.50

The ratio $\left|\frac{T}{L}\right|$ R gives an indication of the distribution of the fibers in the sheet. For instance, the value found in the present case, 0.40, means that for each group of four fibers in the cross direction, there are ten fibers in the machine direction.

But the ratio $\left|\frac{T}{L}\right|$ folding should have the same significance, and would therefore have the same value, namely, 0.40. The

above results show that the ratio is only 0.12 when the test strip is subjected to a tension of 1 kilo, whereas the ratio is 0.41 when the tension is decreased to 0.5 kilo. Consequently, in order to obtain correct results, the folding test should be carried out with the strips under a tension of 0.5 kilo instead of 1 kilo, per 15 mm. in width.

Bulk

Somewhat different methods of expressing this property of paper are used in different countries.

In Germany it is measured by the density (Raumgewitch) of the paper. If the paper weighs, say 90 g. per sq. m. and is 0.12 mm. thick, the density, which is the ratio of weight to volume, is calculated as follows:

Volume of 1 sq. m.=100x100x0.012=120 cm.³

Weight of 1 sq. m.=90 g.

Density (Raumgewitch)=$\frac{90}{120}$=0.75

The bulk is also sometimes expressed by the weight of a stere of paper (Raummetergewitch).

In France bulk is designated as "bouffant" and in Holland as "opdikking". In both countries it is designated as the thickness in millimetres which the paper would have if it weighed 100 g. per sq. m. In the rase already considered above the "bouffant" or "opdikking" would be

$$\frac{100 \times 0.12}{90} = 0.134 \text{ mm.}$$

It can also be measured by the volume of air contained in the paper, expressed as a percentage of the total volume of the paper. As the density of cellulose is 1.5, a pure cellulose paper, containing no air would weigh 150 g. per sq. m. for a thickness of 0.10 mm., and it would have a "bouffant" of

$$\frac{100 \times 0.10}{150} = 0.067 \text{ mm.}$$

The total volume of air included in the paper (expressed as a percentage of the total volume of the paper) is given by the expression:

$$\left(1 - \frac{(1-0.067) \times 100.}{\text{bouffant.}}\right) \times 100$$

In the case of a pure cellulose paper with a "bouffant" of 0.067 mm., this volume is evidently $O-(1-0.067/0.067) \times 100 = 0\%$. while if the density of the paper is 0.75 the "bouffant" is 0.134 and the volume of air is:

$$\left(1 - \frac{(1-0.067) \times 100}{0.134}\right) \times 100 = 50\%$$

In England "bulk" is measured by the ratio of the total volume of the paper to the volume of the fibers. It is evident that with a paper having a density of 0.75 this ratio is 2, while it is unity when the paper does not contain any air spaces (theoretical case only.)

The following table gives a comparison of these various methods of expressing this property of paper.

Air Volume %	"Opdikking" or "Bouffant" in per sq. m.	"Bulk"	Density "Raumgewitch"	"Raummetergewitch" kilos per cubic
0	0.067	1	1.50	1,500
50	0.134	2	0.75	750
75	0.268	4	0.375	374

Special Inquiry No. 34

WASTE IN SODA PULP MILLS

A member writes:

1. In the recovery of soda from black ash of the soda process,
   (a) How much black ash waste is produced per ton of pulp?
   (b) Of this waste, as discharged to the sewer, what per cent is sodium carbonate and what per cent is carbon?
   (c) Would be interested to learn what different mills are doing and what is considered a satisfactory figure for waste at this point.

We believe there will be, in many cases, quite a wide difference between these two figures. If the methods and equipment employed in the recovery could be mentioned it would help in our problem.

2. The second problem relates to the waste of sodium carbonate in the lime mud from the causticizing operation.
   (a) How is this mud best handled?
   (b) What is the actual loss of soda, expressed as the per cent of sodium carbonate, on the dry lime sludge?

Information from the various members will be much appreciated.

This inquiry will be handled under the Service to Members plan. A transcript of replies, in blank, will be sent to all who contribute to the discussion.

W. G. MACNAUGHTON, *Secretary.*

Technical Control at Bogalusa

The technical staff of Bogalusa Paper Company is headed by R. H. Stevens who was for several years with Joseph H. Wallace Company, and with eight assistants has a very complete technical

TECHNICAL STAFF AT BOGALUSA

Left to Right, Front—Dr. A. J. Abrams; R. H. Stevens; W. R. Richardson; S. O. Sheridan. Rear—W. F. Gillespie; J. C. Slade; A. F. Dolan; N. L. Stewart; J. E. Pate.

control in the pulp and paper mills, and is also working on the recovery of the by-products.

This mill is one of very few in America which utilizes the wood waste from the saw mills. Saw mill refuse is used for pulp, the sawdust and bark are burned for the production of steam, waste paper is used for paper board manufacture, while a number of by-products which are ordinarily wasted, are recovered.

Recently the technical staff had added to it A. J. Abrams who has lately received his doctor's degree in chemistry from Massachusetts Institute of Technology. W. F. Gillespie has returned to Queens University, Kingston, Ont., to continue his studies.

Japanese Paper Mills Consumption

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 18, 1925.—Mills of Japanese Paper Association reported a consumption during August of 2,945,257 cubic feet of wood, 2,750,150 pounds of rags, 494,747 pounds of straw, and 2,177,444 pounds of waste paper, in addition to 18,556 tons of chemical pulp and 19,520 tons of mechanical pulp, according to reports received by the Department of Commerce from the Commercial Attaché at Tokyo. The same report states that 13,562 tons of the chemical pulp and 18,520 tons of the mechanical pulp were manufactured in the mills of the association.

Electricity In the Manufacture of Paper *

By C. W. Fick, General Electric Co., Portland, Ore.

In considering the developments in the manufacture of paper in this country, two pictures present themselves. The first, a small room in which several men are dipping flat screens by hand into tubs of water and pulp, squeezing from the small sheets formed as much water as possible by hand presses and hanging these sheets on strings to dry. A few hundred square feet of paper per day is the production of this mill. The other picture is a room with two gigantic machines from which a continuous sheet of paper, 20 feet wide, is rolling out at a speed of 1,000 feet per minute. The story of the interval between these two pictures is the history of paper making in America. In both pictures the process is one of separating the fibers of wood or other source of pulp and

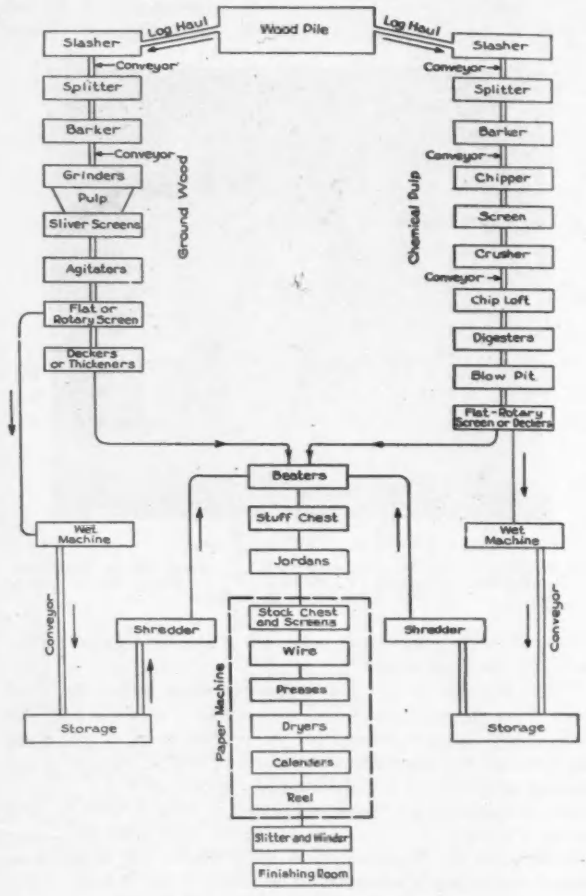


FIG. 1

Flow sheet for paper manufacture

reassembling them in sheet form, so it is primarily in the machines for doing this work that the industry has progressed. It is the purpose of this article to discuss briefly the part electric power is playing in this second picture.

Magnitude and Location of the Industry

If there is a doubt in the mind of anyone regarding the importance of the pulp and paper industry in point of power used or value of the product, the following figures should dispel it.

The paper industry ranks fourth in primary installed horse power: the figures given by the 1919 government census report being as follows:

TABLE 1

Iron and steel	5,402,000 hp.
Lumber and timber products	2,359,000 hp.
Cotton and wool textile	2,330,000 hp.
Paper and woodpulp	1,851,000
Total for all industries	29,507,000

Of this 1,851,000 installed horse power, 583,586 horse power, or 31½ per cent of the total, was electric.

But of these four industries only the iron and steel and the paper operate 24 hours per day, so that in power consumption the paper industry ranks second.

The tonnage of paper produced in 1919 was 6,098,000, with a value of $788,059,377. Estimates for this year are 7,000,000 tons, with a value of one billion dollars.

Seven million cords of wood are used annually for making this paper, and this is a point of special interest to the Northwest. Just as the lumber industry has moved from the East to the Central and finally to the Northwest states, so can we expect the rapid disappearance of pulpwood supplies in those sections to cause a similar movement of the paper industry. That this movement has only started is evidenced by the following table of pulpwood consumption by states for 1920, as given by the United States Department of Agriculture:

TABLE 2

1920 PULP WOOD CONSUMPTION AND COST

State	Quantity Cords	Average Cost Per Cord f.o.b. Mill	Total Cost
Maine	1,389,495	$21.08	$29,297,353
New York	1,130,505	25.01	28,272,896
Wisconsin	964,781	14.61	14,092,346
Pennsylvania	490,784	19.60	9,617,896
New Hampshire	403,530	22.18	8,952,197
Minnesota	254,193	14.57	3,703,024
Michigan	243,632	16.62	4,047,994
Oregon & California	190,399	14.04	2,672,402
North Carolina	166,582	15.26	2,542,403
Virginia	166,547	17.45	2,905,706
Washington	143,794	10.90	1,567,748
All other states	569,831	15.50	8,823,755
United States	6,114,072	$19.05	$116,495,720

Since 90 per cent of our paper is made from woodpulp it is natural that our flow sheet (Fig. 1) should begin with the wood pile (Fig. 2). It will be noted that there are two parallel paths from the wood pile to the beaters, these two paths representing two essentially different methods of separating the fibers. The first method is a mechanical one in which the logs are ground up, giving a comparatively short fibered pulp called ground wood, which forms perhaps 80 per cent of the stock in the ordinary news sheet. In the second method the lignin, or binding material holding the fibers together, is dissolved chemically, giving a strong, long fibered pulp constituting the remaining 20 per cent of the news stock.

In both paths the logs are carried on conveyors from the wood pile to the slasher, where they are cut to the desired length, then split to a size convenient for handling and then the bark is removed.

The next steps in the groundwood process are grinding up the logs, screening the slivers and splinters from the pulp, mixing in the agitators, and removing some of the water in the deckers.

Here the groundwood meets the chemical or sulphite pulp, which since leaving the barker has gone through a chipper where the log was cut up into chips perhaps an inch square and ⅛ inch thick, over a screen segregating the chips according to size (the larger ones going through a crusher), and then to the chip loft. From there they are dumped into the digesters, large stationary vertical riveted or welded tanks, where they are subjected to the action of steam and acid (the latter usually a mixture of magnesium and calcium bisulphites, and sulphurous acid). The resulting pulp is forced by the pressure into the blow pit, then over flat or rotary

* Presented before the Portland, Ore., Section, A. I. E. E., Oct. 14, and the Seattle, Wash., Section, A. I. E. E., Oct. 21.

screens and then pumped to the beaters, where it is mixed with the groundwood pulp.

If either kind of pulp is to be stored for a time either to be used later at the mill where made, or shipped to another mill, it is made into "lap" (thick sheets from which most of the water is removed) on wet machines.

The beaters mix and hydrate the stock, after which it is pumped to the stuff chest and into the jordans, where it is further refined and made ready for the paper machine.

As the stock goes onto the paper machine it is approximately 99½ per cent water and ½ per cent pulp, and the function of the paper machine is to form this pulp into a sheet, remove the water by suction, by pressing, and by drying, to iron out the paper and finally to wind it up into rolls.

This brief resume of the process is given to enable those not familiar with the industry to obtain an idea of the part played by the machines.

In some mills this procedure may be deviated from to some extent, or some steps in the process may be omitted, depending on the kind of stock available and the kind of paper made, but in general the process is as described.

Preparatory Machines

Having obtained a bird's eye view of the industry and process, the next step is to look more closely at the individual machines, particularly with regard to their power requirements and methods of drive.

Slashers

The slasher consists of several circular saws spaced to cut the logs to the desired length (usually 2 or 4 feet). Frequently the conveyor bringing the log from the wood pile, the log haul which carries the logs up and through the slasher, and the slasher, are driven in a group. The starting torque is light and squirrel cage motors are used, 15 to 20 hp. being usually ample for the group.

Splitters

These machines are usually vertical shafts with knife edges on the lower end and may be steam operated. They are found more

Fig. 2

Wood pile of a large paper mill showing stacker and portable conveyor.

frequently in the Northwest, where the logs are larger than in the East and Middle West.

Barkers

There are two types of barkers in general use: the earlier type being a revolving disk having knife edges against which the logs are held and revolved, either by hand or by an automatic attachment. Four to 5-foot diameter barkers are the most common; the 4-foot barker requiring 8 to 10 hp. and the 5-foot 10 to 15 hp. While the starting torque is fairly high, due to the inertia of the disk, squirrel cage motors have been found satisfactory, and the belted arrangement is used,

The other type is known as the drum or tumbler type, and consists of a drum perhaps 10 feet in diameter by 30 feet long, open at both ends and ribbed inside with steel flanges. The drum is driven through a gear around the circumference meshing with a pinion on a jack shaft, which in turn is motor driven through a belt. The high starting torque requires a wound rotor induction motor, 100 hp. being ample for the size mentioned above. This barker has a capacity of 12 to 15 cords per hour.

Grinders

Again in the grinders we find two types: the pocket and the magazine types. In both cases the logs are forced against a revolving grindstone, the difference lying in the method of feeding. In the first type 2-foot logs are placed by hand in each of the 3

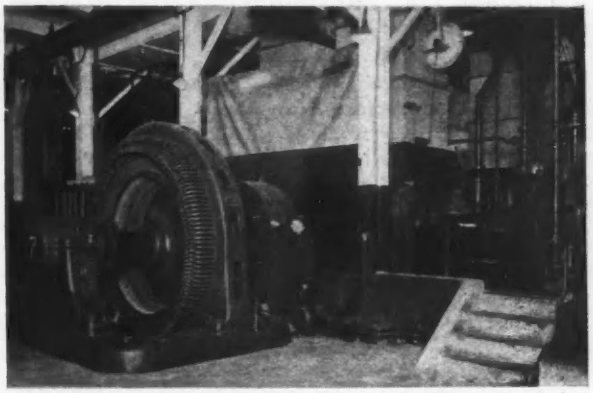


Fig. 3

One of seven 2400-horsepower synchronous motors each driving two wood grinders of the magazine type. At the right are hydraulic rams which force the logs against the grinding stones. The toothed wheels in the upper part of the magazines register the cords of wood ground.

or 4 pockets and forced by hydraulic pressure against the revolving stone. In the second type the logs are fed into a large hopper or magazine, and forced either by chain feed or hydraulic ram against the stone.

Synchronous motors are proving to be the favorite for driving the grinders since in a groundwood mill they form the greatest part of the load, and so give a very high mill power factor. Slip ring induction motors have been applied and in some of the older mills located on water power waterwheels are used.

Stones of 54 inches diameter are usually found and are operated at speeds from 225 to 257 r.p.m. In practically every case the motors are direct coupled to the stones.

The power taken varies with the pressure used and the speed. A three pocket grinder 54 inches in diameter and 27-inch face requiring approximately 500 h.p. at 240 r.p.m., and with 60 lb. per square inch cylinder water pressure. Such a grinder will produce 7 to 8 tons of air dry pulp in 24 hours.

Pocket grinders are usually driven in groups of two, the motor being mounted between them.

Magazine grinders are operated at the same speeds, but the stones are larger: thus in one mill will be found seven 2,400 hp. motors driving 14 grinders (Fig. 3 and Fig. 4).

Load regulators for both of these types of grinders have been developed and are in successful operation. It is the function of these regulators to hold constant current or constant power input to the motors, or in some cases where the grinder forms a large portion of the mill load, to hold the mill demand constant by varying the grinder load. Where power is purchased on a maximum demand basis the advantages of such load regulation are obvious.

Beaters

These machines are large tubs or vats in one side of which is a driven roll having blades parallel to its axis. The pulp passes under this roll, between the blades and a metal bed plate in the

bottom of the vat, the fibers being thoroughly separated and partially hydrated. The power requirements are dependent on the size and speed of roll and the stock being prepared. The following table will give an idea of these requirements:

TABLE 3

Size Roll		Peripheral Speed	Horse Power	
Diam. in.	Face in.	f.p.m.	Light Stock	Rag or Rope
36	24	1800	30	40
44	44	1800	35	50
65	52	1800	40	60
72	66	1800	55	75

The starting torque when the beater is full of stock, or after it has been shut down for some time, is quite high so that wound rotor induction motors are usually recommended. Synchronous motors with Lenix drive have been used where power factor was of prime importance. On new installations it is frequently found convenient to drive the beaters in pairs, either belt or chain drive being used. (See Fig. 5.)

JORDANS

For refining the stock just before it goes on to the paper machine, the jordan engine, a cone shaped casting into which fits a similarly shaped plug, is used. Both the shell and the plug are arranged with knife blades: the former on its internal side and the latter on its surface. The plug is driven and its knives passing close so those of the shell do the refining and cut up any oversized particles which may have come through the beaters. The power depends on the size of the jordan and how closely the shell and plug knives come together.

The setting of the plug is adjustable and so some arrangement must be provided whereby it can be moved axially while being driven. This movement is taken care of either by a telescopic coupling affording 6 to 10 inches axial movement, or by mounting the motor on special feet so that it can slide along the base when the plug is adjusted.

Low starting torque makes applicable either the synchronous or the squirrel cage induction type motor. 350 to 450 r.p.m. is the usual speed of the direct connected motor and the power required by the average sizes is 50 to 150 hp. A jordan having a plug 12 inches by 25 inches by 49 inches will require 75 hp. as an average.

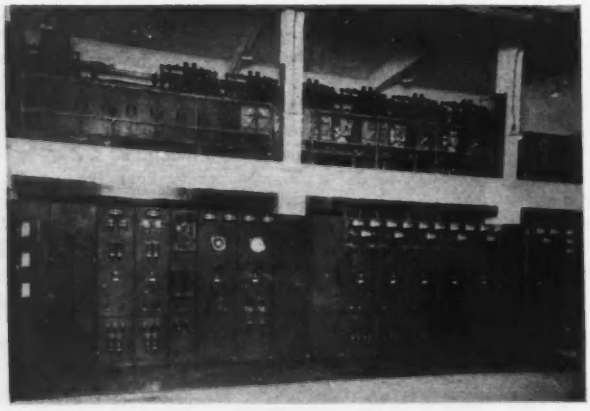


FIG. 4

Switchboard for controlling seven 2400-horsepower synchronous motors driving pulp grinders and then exciters.

These power values will vary considerably, depending on the work to be done by the machine. (Fig. 6.)

Papermachine

Space prevents describing the papermachine in any more detail than to say that it is made up of several sections, the wire or cylinders, the presses, driers, calenders and reel. The sheet is formed on the first mentioned section and passes in a continuous web through the others with gradually decreasing water content.

The pumps, agitators, screens, etc., through which the stock passes in going from the jordans to the paper machine, although they do not form part of the machine proper, are frequently referred to as the constant speed end, for in earlier installations they were driven from the same engine as the variable speed and described above. In general they are driven in a group by a constant speed motor of the wound rotor induction type and for rough calculation the power is taken as one-half that of the variable speed end at its top speed.

FIG. 5

One hundred horsepower slip ring induction motor driving two beaters.

The power required by the papermachine is dependent primarily on its width, speed and number of sections, and secondarily on the kind of paper to be made and the individual characteristics of the sections. It has been convenient for purposes of calculation and comparison to use a figure of horsepower per unit width per unit speed and numerous tests show this value to be usually within the limits 0.002 and 0.0035 horsepower per inch width per foot per minute paper speed, depending on the factors mentioned above. Knowing the details of the machine this power can be determined very accurately.

Where one motor is used the back line shaft or parallel rope system extends the whole length of the machine, and the drive to each section is made through cone pulleys and clutches, since the speed of each section must be capable of a small adjustment relative to the other sections.

A paper machine requires an adjustable speed drive having a speed range of usually 2 or 3 to 1 and occasionally as high as 7 or 8 to 1. The torque requirement over this speed range is practically constant, increasing somewhat at very low shaft speeds however, due to increased bearing friction in the dryers and heavier load in the calenders on account of heavier paper. In other words, the power required varies closely as the speed for a given machine.

The series characteristic of the wound rotor induction motor when operating on resistance at reduced speed prevents its use for this application as very close speed regulation is required.

The drive that finds most general favor is the shunt wound direct current motor with motor generator set, obtaining the speed range by voltage control of the generator, or if very wide speed range is necessary, using a combination of generator voltage and motor field control. This provides a very simple and flexible system, permitting extremely low speeds for washing felts or threading on drier jackets, and is practically independent of the ordinary voltage regulation occuring on mill circuits. Frequently the generator is driven by an engine, the exhaust steam being used in the driers of the papermachine. Regulators for either speed or voltage control have been designed for application where variations in engine speed or mill circuit voltage are abnormal.

Numerous methods of arranging the motor drive are in use, including belt, rope, chain, gear, and direct coupling to the end or in the middle of the line shaft.

Sectional Drive

During the past five years such advances in the size and speeds of papermachines have been made that in some cases it has proven economically advantageous to drive each of the sections by individual motors, using some control system, for holding the speeds of those sections at the required value.

The control systems for accomplishing these results may be divided into two groups:

1st—One in which synchronous machines are mechanically connected to the main driving motors, thus holding those motors in step. The speed of any main driving motor is adjustable relative to its synchronous machine by means of cone pulleys or by rotating the frame of the synchronous machine to give any required shaft speed and at the same time stay in step with the synchronous machines of the other sections. (Fig. 7)

2nd—In the other general control system the fields are automatically varied to hold their speeds constant as load changes occur.

In both of these systems, the main driving motors are of the direct current type, obtaining their power from a motor or turbine driven generator set. Speed control of the whole machine as a unit is obtained in nearly every case by generator voltage control.

There are approximately 70 such drives in operation or on order in the United States and Canada, and their success and advantages have caused the sectional drive to be applied to not only the large high speed machines, but to the smaller machines as well. Machines making news, book, kraft, bond, tissue, glassine and crepe have been equipped with such drives. Nearly every arrangement of motor with respect to driven rolls can be found including direct-coupled, chain, worm-gear and spur-gear driven. (Fig. 8, Fig. 9).

Test data from the installed machines make it possible to predetermine very closely just what the power and "draw", or stretch, conditions will be on any type of machine. For instance, on a kraft machine considerable tension is used on the paper between the driers and calender, necessitating more power for driving the calender section than on a machine making news. The power for the whole machine is found to be somewhat less than the figures given above for the single motor drive in that the losses of the backline shaft (ordinarily figured at 12 to 20 percent of the total power) are not included.

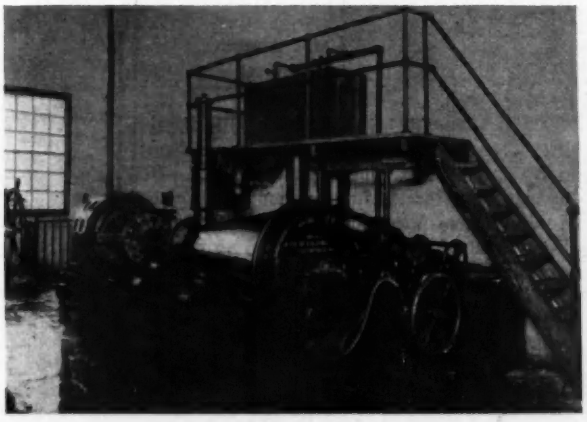


Fig. 6

Jordan driven by squirrel cage induction motor. Note specially machined feet of motor to permit sliding base as jordan plug is adjusted.

The sectional drive will not prove economically advantageous for every paper machine, and each case should be studied on its own merits.

Where maintenance and lubrication of the backline shaft is an important item of expense (and these factors run to a surprisingly large figure), or where floor space is limited and needed for other than belts, pulleys, bearings, hangers and line shafts, the sectional drive certainly should be given serious consideration.

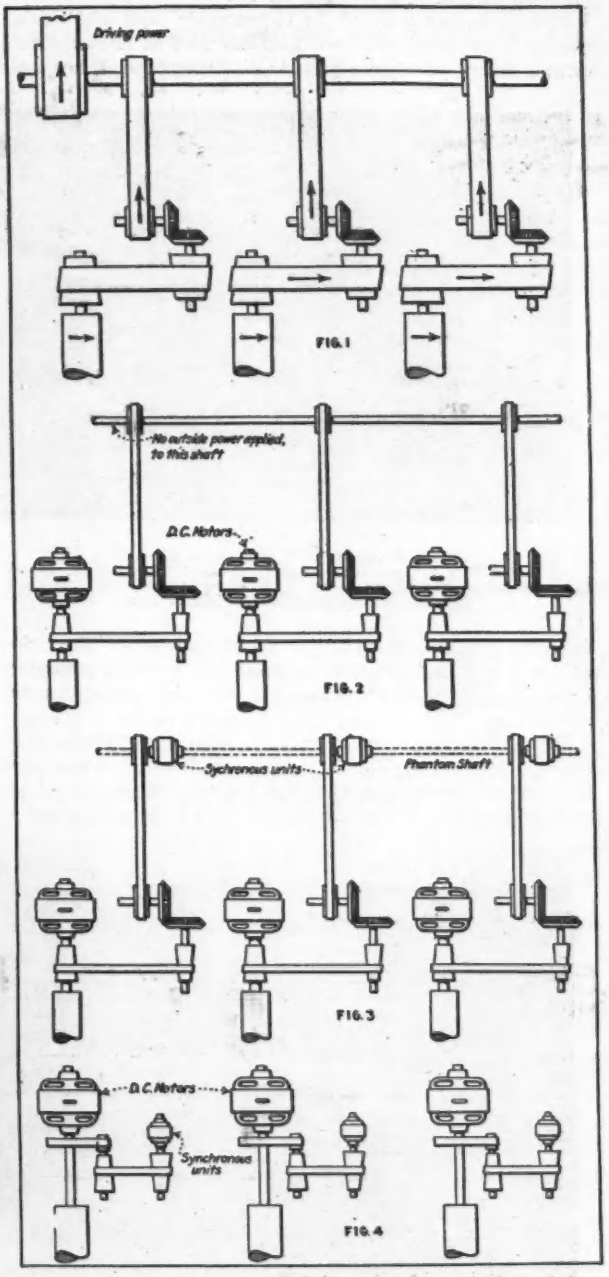


Fig. 7

The evolution of paper machine drive from all-mechanical to sectionalized electrical. (Courtesy Electrical World.)

In a typical mill producing 100 tons of newsprint per day the power requirements are about as follows:

TABLE 4

Department	Horsepower
Groundwood	
Wood room	111.
Grinder room	7016.
Sulphite	
Wood room	125.
Screens, pumps, etc.	171.
Machine room	1844.
Machine shop	40.
Total	9307.

Operating 24 hours a day, the daily power consumption of such a plant is 9307 x 24 = 223368 horsepower-hours.

Direct current is required only for the papermachine, all of the other load being alternating current.

In mills making some of the higher grade paper and specialties there are found additional machines such as supercalenders, cutters, platers, etc. Space prevents discussing these in any more

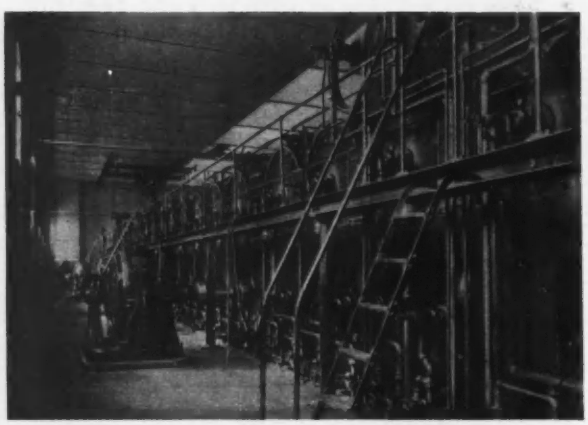


FIG. 8

Dryer section of a 164-inch paper machine equipped with sectional electric drive showing its two driving motors each rated 100-horsepower, 150 r.p.m. This section consists of 50 7000-pound rolls.

detail than to say that they are all applications for alternating current motors, and that with the exception of the supercalenders (which require 50 to 100 horsepower each) the power required is small.

The problem very often arises as to whether power should be purchased or generated at the mill, and in considering this question it should be borne in mind that a certain amount of process steam is required. If chemical pulp is made at the mill, steam at

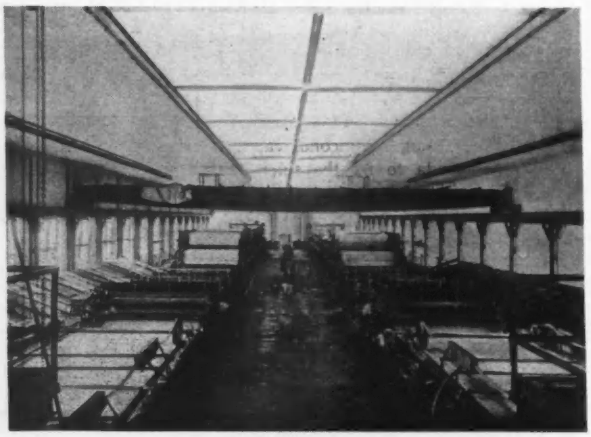


FIG. 9

Machine room of a large Canadian paper mill. These machines are equipped with sectional electric drive, control panels for which are shown in center.

80 to 90 lbs. gage pressure is required for the digesters. The quantity for this cooking process is approximately 4½ lb. of steam per ton of air dry pulp. As the chemical pulp forms about 20 per cent of the finished sheet, approximately 1 lb. of steam per lb. of finished paper is required in the digesting process.

One of the important sections of the papermachine is the driers, which are heated by steam and which reduce the water content of the sheet from 65 per cent to about 10 per cent. In other words from every pound of paper made these driers must evaporate nearly 2 lb. of water and the drying conditions are such that 3 to 4½ pounds of steam are required for each pound of paper. This is low pressure steam usually 3 to 10 lb. per sq. inch on the lighter weight papers, but sometimes as high as 30 lbs. per sq. inch pressure on the boards.

Other miscellaneous requirements such as heating of buildings, etc. bring the process steam required for the hypothetical 100 ton mill to 1350 boiler horsepower or approximately 6 lbs. of steam per pound of paper.

Now it requires but very little more coal to generate this steam at 150 lb. pressure than at 50 or 100 lb. so that in general it proves advantageous to generate as much power at the mill as can be taken from this process steam and then let local conditions determine where the rest of the power will be obtained.

New Members of T.A.P.P.I.

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C. M. Thorsen, G. D. Jenssen Company, New York, N. Y.

J. W. Zanders, J. W. Zanders Paper Mills, Bergisch-Gladbach, Germany.

REINSTATEMENT

A. F. Klein, Hammermill Paper Company, Erie, Pa.

Belgian Paper Mills Active

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 18, 1925.—Belgian mills worked at maximum throughout the month of September, according to a report from Vice Consul J. F. Harrington, Antwerp, to the Department of Commerce. Contrary to expectations, the advance of 10 to 15 per cent in paper prices announced by the mills did not affect the volume of sales, and large contracts for all classes of paper were placed during the course of the month. Comparatively small stocks were available for export after the orders for domestic consumption had been filled. Newsprint and wrapping paper continued to arrive from the Scandinavian countries and Finland in large volume, but importations from Germany were reported negligible. The demand for wood pulp was strong and arrivals regular, despite the increased prices. As it is generally admitted that the advance in paper prices is not sufficient to cover the advance in raw materials further increases are anticipated.

F. A. Franklin on Exposition Committee

Denver, Col., November 16, 1925.—F. A. Franklin of the Butler Paper Company, Denver, Colorado, has been named a member of the Denver Chamber of Commerce committee to make arrangements for the state's Semi-Centennial Exposition, in 1926. It will mark Colorado's fiftieth birthday as a member of these glorious United States.

Waste Liquor and Gases of the Paper Industry

Survey of the Recent Domestic and Foreign Patent Literature on the Utilization of Waste Liquors and Waste Gases of the Pulp Industry, 1912-1924

By A. SCHROHE[1]

TRANSLATED, WITH ADDITIONS, BY CLARENCE J. WEST, CHAIRMAN, COMMITTEE ON ABSTRACTS AND BIBLIOGRAPHY, T. A. P. P. I.
(CONTRIBUTION NO. 48 OF THE COMMITTEE)

(Continued from last week)

246. 1913. French 466,196. L. Meunier. Use of sulphite cellulose extracts for varnish.

A varnish giving rapidly drying, uniform coatings is prepared by mixing commercial concentrated sulphite cellulose extract with a substance, especially a solution of a terpene in a sulphoricinate, which diminishes the surface tension of the product. For example, 4 liters (0.88 gallon) of oil of turpentine are added gradually, with constant agitation, to 25 kg. (55 lb.) of neutral sodium sulphoricinate heated to 60° C., and the resulting thick liquid is incorporated with 25 times its weight of sulphite cellulose extract of 30° Bé (specific gravity, 1.263).

247. 1913. D. R. P. 266,401. E. Pollacsek. Process for manufacturing a weather resistant coal fuel, simultaneously rendering the sulphur present in the coal harmless.

The coal is mixed with a mixture consisting of a little more lime than necessary to bind the sulphur and of a binding material (starch, glue, sulphite waste liquor, etc.). The mass is mixed with the hot impregnating liquid, whereby a plastic mass is obtained which after drying is waterproof throughout. (Addition to D. R. P. 264,783).

248. 1913. D. R. P. 269,994. E. L. Rinman. Apparatus for destructive distillation of sulphite lyes.

Distillation is effected in an annular furnace in which an annular hearth is mounted. The material is distributed over the hearth and heating gases are passed through an annular space below the hearth, the latter being rotated in the opposite direction to the flow of the heating gases. The heating chamber is closed against the space above the hearth by liquid or sand seal and the conduit through which the distillation residue is discharged is connected, with a vertical pipe of such height that the column of residue therein is sufficient to provide a gas tight seal.

249. 1913. D. R. P. 274,084. U. S. 1,133,499 (1915). French 462,429 (1913). Norwegian 24,349 (1914). E. Pollacsek. Binding and impregnating material.

In the manufacture of a binding and impregnating material, insoluble in water, by evaporating sulphite lye (with added lime), with the addition of mineral oil, a heavy petroleum distillate is added, drop by drop, to the sulphite lye, after the addition of a small excess of lime, and evaporated to foaming, the oil covering the separating calcium compounds. The mixture of oil and calcium salts can be removed from the surface of the liquid and the oil recovered. The liquid is evaporated until a test will flow from a rod without solidifying. About five per cent of heavy oil is now added to the hot viscous lye and mixed thoroughly therewith, the product not losing its binding power thereby. In order to render the mass insoluble in water, heavy oil is mixed in such amount that to four parts of the mass there are five parts of oil, whereupon the mass is mixed with one and a half parts of lime slurry and the whole brought to a boil. The final product serves as a binding agent for pulverulent and fine granular material insoluble in water and as an impregnating agent for wood, hemp, rope and the like.

250. 1913. D. R. P. 280,454. Diamont-Brikettwerke. Briquetting fine coal.

Fine coal is briquetted with a water soluble binder, such as sulphite liquor or the like. The compressed briquettes are heated to a temperature sufficiently high to drive out most of the water but not until an impermeable film is formed upon the surface. The temperature is maintained at 190-200°. If crystal or combined water, present in inorganic compounds, is present in the briquettes, this water is volatized in part.

251. 1913. D. R. P. 287,016. G. Wihtol. Rendering pea briquettes permanent.

The admixture of so-called peat-turf, in comminuted form, with the more or less rich peat of older formation, suitable for briquetting, with the addition of a water soluble binder, such as sulphite cellulose thick liquor, imparts to the dry briquette not only permanency in moist air, but also such a degree of compactness and firmness in the fire that the most complete combustion and evolution of heat possible is ensued.

252. 1913. Swiss 63,309. Chemische Industrie and Handelsgesellschaft m. b. H. Manufacture of briquettes.

In the manufacture of briquettes, the material, mixed with sulphite waste liquor as binder, and agents which effect the coagulation of the organic matter contained in the sulphite liquor, is heated to 100-102° C., for the purpose of securing a thorough desiccation and complete coagulation. A good coagulation is secured with hydrochloric acid, sulphuric acid, chromic acid, prenold, also acid salts, such as bisulphate, alums, dichramates, etc.

253. 1914. U. S. 1,087,356. P. G. Ekström. Separating organic material from waste sulphite liquor.

In separating organic materials from waste sulphite liquor, alcohol is first produced from the liquor in the usual manner and lime then added to remaining solution to precipitate the organic matter in the form of humus-like calcium compounds.

254. 1914. U. S. 1,095,830 Canadian 142,290. G. Ekström. Purifying alcohol from waste sulphite liquor.

The alcohol is freed from sulphur dioxide and aldehyde compounds by treating the alcohol capor (during distillation) with a solution of soda to fix the sulphur diovide and decompose the aldehye compounds.

255. 1914. U. S. 1,098,561-2. Canadian 142,285-6. G. Ekström. Purification of alcohol from sulphite lyes.

Sulphite lyes and other liquids obtained by boiling cellulose materials with acid liquids are neutralized with a heavy, solid neutralizing agent preparatory to further treatment for the production of alcohol. The solid neutralizing agent is added to the liquor in a vessel provided with a conical bottom, at the apex of which is a nozzle having helical passages. Air under pressure is supplied to the nozzle, whereby a spiral jet of air, entraining the solid reagent, is forced upward through the liquor. The neutralized liquor is drawn off near the surface through a siphon pipe supported by a float. Water under pressure may be forced through the nozzle, when desired to flush the bottom of the vessel, the flush water being drawn off through a pipe in axial alignment with the nozzle.

256. 1914. U.S.1,103,266. M. F. Coughlin. Varnish.

A varnish is made by dissolving kino resin in alcohol of about 70 per cent or greater strength and dissolving sulphite pitch in alcohol of about 70 per cent or less strength and mixing the two solutions.

257. 1914. U. S. 1,103,267. M. F. Coughlin. Varnish or sizing.

A varnish or sizing is prepared which contains shellac and the

[1] Papierfabricant 23, 30-33, 63-65, 89-92, 158-161, 251-253, 284-287, 293-296, 306-307. (1925.)

solid constituents of waste sulphite liquor dissolved in ammonium hydroxide.

258. 1914. U. S. 1,107,020. L. Berend. Emulsifying pitch, etc., for use in paints, etc.

Asphalt, pitch, oils, or resins are emulsified and prepared for use in paints, etc., by using 5 10-1 per cent of concentrated waste sulphite liquor with or without 25 per cent of a 30° Bé Solution of magnesimu chloride and, after emulsification, adding magnesia, sawdust, or other fillers, if desired.

259. 1914. U. S. 1,108,189. T. Knösel. Fertilizer.

A fertilizer is made of neutralized waste sulphite liquor and calcium cyanamide.

260. 1914. U. S. 1,110,454. H. K. Moore and R. B. Wolf. Recovery of sulphur dioxide.

Sulphur dioxide is recovered from sulphite pulp liquor by discharging the material from the digester into a blow-pit after filling the pit with steam to remove the air from it, then drawing off the vapor and gas from the pipe and condensing the vapor and collecting the uncondensed sulphur dioxide.

261. 1914. U. S. 1,113,681. F. H. Patch. Adhesive.

An adhesive for use as a binder with sand molds, briquettes of ore, coal, etc., is formed by mixing waste sulphite liquor with flour or clay, evaporating until it is thick enough to hold soap in suspension, and then adding soap or alkali and fats or oil to the mixture and evaporing to dryness if desired.

262. 1914. U. S. 1,114,119. M. F. Coughlin and C. E. Swett. Composition for dressing leather.

A composition for dressing leather, etc., is formed of concentrated waste sulphite liquors, 3; sodium carbonate, 0.5; montan wax, 4, and stearic acid, 1 part.

263. 1914. U. S. 1,114,120. M. F. Coughlin and C. E. Swett. Process of bleaching sulphite liquors.

Waste sulphite liquor is bleached by treating it successively with 0.1 per cent potassium permanganate (or a manganate, dichromate or chromic acid) and 0.2 per cent of hydrosulphite of zinc, sodium or other metal.

264. 1914. U. S. 1,119,500. C. Ellis. Liquid for laying road dust.

A liquid for laying road dust is formed of waste sulphite liquor of 30° Bé, emulsified with petroleum oil and a solution of calcium chloride in water. The ratio is 100:25:15.

265. 1914. British 1,45 (Jan. 5). Canadian 154,165. French 467,466. E. Oman. Waste sulphite liquor for digestion of wood.

Sulphite waste liquor is utilized for the digestion of three or four charges of wood, especially for the production of half-cellulose, by treating it after each digestion with lime, magnesia or alkali and sulphur dioxide. Part of the waste liquor is used for the recovery of organic and inorganic substances, either by fermenting and distilling off the alcohol and then concentrating, or by removing a part of the whole of the non-fermentable substances and then fermenting and distilling. For digestion, a suitable quantity of washing water, with or without other pure water, may be added.

266. 1914. British 18,332 (Aug. 7). French 479,426 (1915). W. E. Horrocks and J. K. Tullis. Tanning extract.

A tanning extract is produced by treating wood pulp extracts obtained as a waste or by-product in the manufacture of paper pulp and other cellulose material, in a heated condition with one or more neutral salts. The extract thus obtained, which is practically soluble, may be used as a liquid, paste or powder.

267. 1914. Canadian 153,361. R. W. Strehlenert. Separating inorganic and organic components of sulphite liquors.

A process of separating the organic and inorganic matters of waste sulphite liquors consists in heating said liquor under pressure in the presence of an oxidizing agent.

268. 1914. French 474,819. Megelin, A. Akt. Gee. f. Russfabrikation. Explosive for liquid air and carbon from waste sulphite cellulose lye.

Coke prepared from the carbonization of waste sulphite liquor is impregnated with liquid air.

269. 1914. D. R. P. 284,715. J. Konig. Fodder and cellulose from wood.

The wood is subjected to a pre-treatment with dilute mineral acids and dilute alkalies, or with one of these solutions alone under varying pressures. The materials are then treated further according to the usual sulphite process. The liquors are, after complete neutralization, evaporated alone or together and worked up for fodder. The first liquor, rich in sugar, may be treated separately for alcohol or other products and the residual liquor treated with the sulphite liquor for fodder.

270. 1914. D. R. P. 287,730. Aktieselskabet Cellulosepatenter. Removing incrustations from heating surfaces from wood pulp boiling lyes.

The heating surfaces, *i. e.*, the interior of the boilers and the heating tubes, are provided, before admitting the boiling liquors which produce the insoluble deposit (*e. g.*, calcium sulphite) with a soluble coating or one which gradually carbonizes upon heating, with the aid of a liquid forming such a coating. The insoluble deposit then forms on this easily removed coating during the boiling process. A carbonized coating can be made with the aid of a boiling lye which has been used once and which contains dissolved wood. The deposit separating from this consists chiefly of lime compounds or substances resembling lignin and resin or pitch.

271. 1914. D. R. P. 290,680. Norwegian 27,849. H. O. V. Bergstrom. Utilizing waste gases of sulphite cellulose manufacture for the production of digester acid.

A suitable apparatus is specified.

272. 1914. D. R. P. 293,394. E. Murbe. Evaporations of waste liquors, especially sulphite and sulphate liquors.

The liquor is sprayed under pressure into a chamber in which it comes in direct contact with the hot waste gases from the boiler furnace. Further concentration is effected in the usual way in separate evaporating chambers.

273. 1914. Norwegian 24,526. H. B. Landmark. Process of manufacturing alcohol from waste sulphite lyes. (Addition to 23,673, No. 224.)

Previous to the neutralization and the fermentation about one-sixth of the volume of the liquor is evaporated preferably *in vacuo*.

274. 1915. U. S. 1,128,154. French 469,768 (1914). Norwegian 26,029. J. Konig. Manufacture of fodder from waste sulphite lyes.

Waste sulphite lye is mixed with the residual liquid obtained in the treatment of wood with dilute alkalis and acids with the aid of heat and pressure (*See* No. 269) and the mixture is evaporated, neutralized and freed from sulphurous acid. The product can be used as a cattle food. The sulphite lyes may be submitted to a preliminary treatment with acid or alkali, which enables them, after neutralization and separation of sulphurous acid, to be evaporated separately; this product also can be used as a food by itself. The residual liquor obtained from the acid and alkali treatment of cellulose may be treated for the extraction of resins, tannins, sugars, etc., before being mixed with the sulphite liquor.

275. 1915. U. S. 1,130,192. British 1145 (1914). French 467,466 (1914). Canadian 154,165 (1914). E. Oman. Process for manufacturing sulphite pulp.

Waste liquor is used instead of water for the preparation of cooking liquor by dissolving lime and sulphurous acid. When the liquor after several cooks has reached a certain concentration of organic matters it is worked up for by-products.

276. 1915. U. S. 1,130,317. H. K. Moore. Process of making sodium sulphide.

The lignin liquors resulting from the manufacture of sulphate pulp are sprayed into a smelting chamber, which transforms the inorganic content into sodium carbonate; the melted carbonate, to which is continuously added sodium sulphate, is mixed with a reducing agent, sufficient heat being supplied for the reduction and the melting of the sodium sulphide The sulphide is withdrawn in a molten condition, the sublimation products being reclaimed by passing them through the spray of lignin liquor.

(*To be continued*)

Section of the

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Conducted by THOS. J. BURKE, C.A., Sec-Treas

Legal Pitfalls In Marketing Products*

Illustrations of "Hairline" Decisions

By GILBERT H. MONTAGUE, Of the New York Bar

"It is absolutely dishonest," said William E. Humphrey, a recently appointed member of the Federal Trade Commission, speaking before the Chamber of Commerce of the United States in May 19, 1925. "to claim that there is a clear and distinct line between what is and what is not unlawful under the anti-trust acts. It is, therefore, absolutely dishonest to say that, when they are violated, it is always done purposely. It is absolutely dishonest to say that when men violate the anti-trust acts, their action is always as reprehensible and that it is done as knowingly as when men violate laws that for ages have been recognized by common consent without statutes. The Supreme Court of the United States has many times been divided upon what action constituted an unfair method of competition. How can it honestly be contended then, that business men know with certainty?"

Government prosecutions under the anti-trust laws and the Federal Trade Commission Act present many illustrations of the truth of Commissioner Humphrey's statement.

In 1914, Congress enacted the Federal Trade Commission Act, which declared that "unfair methods of Competition in Commerce are hereby declared unlawful", and created the Federal Trade Commission to enforce this Act.

Premiums for Salesmen

Many business men believe that it is unfair for a manufacturer to obtain preference for the sale of his products by giving to the salesmen of his distributors or dealers any cash or premiums, such as neckties, knives, watches, silverware, umbrellas, hats, diamonds, jewelry, or other rewards, as inducements for such salesmen to push the sales of that manufacturer's products to the exclusion of the products of the latter's competitors. This practice has, indeed, been frequently denounced in trade journals and before trade conventions, and in several trade associations has been the subject of strong, condemnatory reports and resolutions. It was not surprising, therefore, that early in its career the Federal Trade Commission instituted a number of prosecutions against manufacturers in many different industries who were engaging in this practice. Finally, however, one of these manufacturers appealed from a Federal Trade Commission order to the Circuit Court of Appeals which held, in 1921, that this practice was entirely lawful, so long as it was carried on with the knowledge and the consent of the distributors and dealers who employed these salesmen.

Resale price standardization is another subject that has abounded in "hairline" decisions. From 1906 to 1918, the Supreme Court of the United States, in a long series of decisions on which the justices of the Supreme Court were sharply divided, held that various agreements, copyright restrictions, patent restrictions, notices and other arrangements to prevent price-cutting and to enforce resale price standardization were all unlawful and forbidden by the anti-trust laws.

Resale Price Control

In 1919, however, the Supreme Court unanimously held, in a government proceeding against a well-known soap company, that in the absence of any intent to create or maintain a monopoly, the anti-trust laws do not prevent a manufacturer from announcing in advance the prices at which his goods may be sold and refusing to deal with distributors and dealers who do not conform to these prices.

Relying upon this Supreme Court decision, the Circuit Court of Appeals, in a case where another manufacturer was appealing from a Federal Trade Commission order, unanimously held, in 1920, that the Commission was not authorized in forbidding the manufacturer to refuse to sell to distributors because the latter had sold, or were selling, to price-cutters, nor in forbidding the manufacturer "to secure the cooperation of these distributors in maintaining or enforcing any such system of resale prices."

In 1922, however, upon an appeal by the Federal Trade Commission from this Circuit Court of Appeals decision, the Supreme Court held, in an opinion from which four justices dissented, that it was unlawful for this manufacturer to carry into effect its trade price standardization policy by "co-operative methods" in which the manufacturer, "and its distributors, customers and agents undertake to prevent others from obtaining the company's products at less than the prices designated by it: (1) By the practice of reporting the names of dealers who do not observe such resale prices; (2) by causing dealers to be enrolled upon lists of undesirable purchasers who are not to be supplied with the products of the company unless and until they have given satisfactory assurances of their purpose to maintain such designated prices in the future: (3) by employing salesmen or agents to assist in such plan by reporting dealers who do not observe such resale prices, and giving orders of purchase only to such jobbers and wholesalers as sell at the suggested prices and refusing to give such orders to dealers who sell at less than such prices, or who sell to others who

* From Management & Administration.

sell at less than such prices; (4) by utilizing numbers and symbols marked upon cases containing their products with a view to ascertaining the names of dealers who sell the company's products at less than the suggested prices, or who sell to others who sell at less than such prices in order to prevent such dealers from obtaining the products of the company; or (5) by utilizing any other equivalent co-operative means of accomplishing the maintenance of prices fixed by the company."

Resale Price Difficulties

Most of the perplexities now existing in the law regarding resale price standardization arise from this decision. The Supreme Court, it will be observed, concedes that any manufacturer may, in the absence of any intent to create or maintain a monopoly, announce in advance the prices at which his goods may be sold, and may refuse to deal with distributors and dealers who do not conform to these prices. But in the decision last quoted, the Supreme Court emphatically holds that no one, in the exercise of this right, must ever avail himself of any of the means described in the decision above quoted, although without the use of some of these means it is exceedingly difficult for anyone ever to exercise this indubitable right.

Great though the difficulty is, it nevertheless is possible in many instances to exercise one's right to refuse to sell without using any of these forbidden means. This was strikingly illustrated in December, 1914, a Federal Court case where, after listening to the Government's evidence in a resale price standardization case, the judge directed the jury to return a verdict of not guilty, stating that the manufacturers on trial "may not sell or refuse to sell to their dealers in any such way as shall involve an agreement with the dealers, a combination or a conspiracy with them", and if these manufacturers "were involved in any restrictive measures which had to do with other and like dealers, a very different face would be presented," and "if after the cutting off their customers there were solicitation on their part asking for reformation, nothing else but an agreement could be interpreted," but that since none of these forbidden acts had been proved, the manufacturers "can refuse, wheresoever they will, to sell to this man or that man. They can sell to whomsoever they please, or they can refuse to sell to whomsoever they please."

Another Hairline Decision

To the cases already discussed, one more "hairline" decision may be added. After long continued disputes between the building trade unions and the building industries in San Francisco, the Builders Exchange of San Francisco was organized in 1921, with a membership of more than 1,000 building contractors and dealers in building materials, to co-operate with the Industrial Association of San Francisco, which had been organized by a committee of the San Francisco Chamber of Commerce for the purpose of combating the building trade unions. The principal means adopted was the "permit" system, the object of which was to limit sales of certain specified kinds of materials to builders who supported the plan. To render this restriction effective, the person concerned was required to obtain a permit from the Builders Exchange, specifying the kinds and quantities of materials to be furnished, and the particular job on which they were to be used. The materials specified were cement, lime, plaster, ready-mixed mortar, brick, terra-cotta, clay products, sand, rock, and gravel.

In 1923, the Federal Court in San Francisco enjoined the Builders Exchange and the Industrial Association on the ground that their operations were a conspiracy in restraint of interstate commerce in violation of the Sherman Act. From this decision, the Builders Exchange and the Industrial Association appealed to the Supreme Court of the United States, and in April, 1925, the Supreme Court reversed the decision of the Federal Court in San Francisco, on the grounds that the operations of the Builders Exchange and the Industrial Association did not constitute a restraint of interstate commerce.

The Supreme Court remarked that most of the products in respect of which permits were required were "California productions, and were deliberately selected for that reason, in order to avoid interference with interstate commerce." Although plaster, in large measure produced in other states and shipped into California, was on the list, the Supreme Court stated that "the permit requirement was confined to such plaster as previously had been brought into the state and commingled with the common mass of local property, and in respect of which, therefore, the interstate movement and the interstate commercial status had ended."

The lower Federal Court in San Francisco in its decision in 1923 had "laid especial stress upon the point that plumbers' supplies, which for the most part were manufactured outside the state, though not included under the permit system, were prevented from entering the state by the process of refusing a permit to purchase other materials."

Influence of a Local Situation

To this contention, the Supreme Court in its decision in April, 1925, replied that "the alleged conspiracy and the acts here complained of spent their intended and direct force upon a local situation—for building is as essentially local as mining, manufacturing or growing crops—and if, by a resulting diminution of the commercial remand, interstate trade was curtailed either generally or in specific instances, that was a fortuitous consequence so remote and indirect as plainly to cause it to fall outside the reach of the Sherman Act."

From the Maple Flooring Manufacturers' decision, the Cement Manufacturers' decision, the premium decision, the resale price standardization decisions, and the Industrial Association decision, it is plain that only a "hairline" separates legality from illegality in many cases in the law of marketing arising under the anti-trust laws and the Federal Trade Commission Act.

Georgia and Alabama Clays as Fillers

Washington, D. C., November 18, 1925.—The results of a study of the utilization of Georgia and Alabama clays as mineral fillers, recently completed by the Bureau of Mines, Department of Commerce, indicate that these clays, when prepared properly, can be used advantageously in the manufacture of paper, wall paper and numerous other materials.

The white clays or kaolins of Georgia and, to a small extent, of Alabama, have been utilized in the ceramic industry for many years, according to W. M. Weigel, mineral technologist, in a report just published. Some of these deposits have supplied clay to paper manufacturers and a very few have produced clay for use in rubber compounding and the manufacture of oilcloth and paint. As many owners and operators of clay deposits are unfamiliar with the different requirements for clays to be used as fillers, and so are unable to prepare their product for the market to which it is best adapted, the Bureau of Mines, in its endeavor to increase efficiency and economy in the mineral industries, has studied the clays in question to ascertain the uses to which they could be most efficiently put. A study of the Georgia clays for ceramic use was the subject of an earlier investigation by the Bureau.

The general area in which occur the clay deposits studied by the Bureau of Mines extends as a belt across middle Georgia, into Alabama, and up to the northern end of the boundary between Alabama and Mississippi. This area is part of the coastal plain region. The Georgia clays were evidently derived from the decomposition of the crystalline rocks of the Piedmont Plateau to the north, and some of the Alabama clays are from similar rocks to the northeast.

The clay beds range in thickness from those too thin to work profitably, up to more than 40 feet. The thickness of cover ranges from a few inches up to depths that make stripping impracticable. At some places 50 to 60 feet of cover has been stripped to expose the clay.

Production Budgeting*

By J. L. Palmer, University of Chicago

Before undertaking a technical discussion of production budgeting it is well that we define the term. Briefly, production budgeting involves two things: (1) Estimating and scheduling manufacturing costs; (2) Recognition of the inter-dependence of functional departments.

The production budget is but a part, though in a sense the most important part, of the budget plan of the business as a whole. It, of course, frequently happens that a single schedule of operations can be used as a guide for both the sales and production departments. In any event, obvious though it may seem, it is worth emphasizing that the relation between sales volume and production volume is so close as to necessitate detailed co-operation between the sales and production departments. Furthermore, the production department has not fulfilled its obligations to the business until it has given the control division or financial executive an estimate of manufacturing cost to be used, in conjunction with an income estimate received from the sales department to determine the profitableness of the proposed program and the financial outlay required of the treasurer. The first point to be stressed, then, is the importance of production planning to the executives of other departments and, conversely, the need for the support of other departments in scheduling production.

Extent To Which Budgeting May Be Carried

The question is frequently raised as to the extent to which the budgeting of production may be carried as a practical proposition. In answer to such a question no generalizations seem to be possible at this time. It is possible that we may profit, however, by setting up an arbitrary classification of types of manufacturing enterprises and discussing briefly the problem of budgeting with reference to each type. The assumption will be made in each case that the forecasting of sales volume and price can be accomplished with reasonable accuracy and certainty. The only justification for such an assumption is in the fact that we are concerned here with manufacturing procedure and not with the technique of business forecasting.

Our simplest case is the producer of a single stock product of few parts or ingredients. In a situation of this kind manufacturing processes are simple and are apt to be so automatic as to reduce labor to a position of comparative unimportance. Raw materials are few and are consumed in known proportions. The situation is an ideal one for detailed planning, both of volume of output and of cost.

A second case is that of the producer of a single stock product of complex construction. The budgeting of production in this instance usually involves more detail than in the first case and is therefore more expensive. The problem itself is still relatively simple, however, and is largely one of co-ordinating known details. In the case of an assembled product the various parts of which are manufactured and not purchased the budgeting of production for operating departments is much the same as though several or many individual products were being manufactured. It is simplified, however, by the fact that there are definite quantitative relationships between the various units or parts.

A third type of manufacturing enterprise is the business producing a large number of different products for stock. A good illustration is the Dennison Manufacturing Company, producing some 8,000 different stock items. (It also produces to special order.) It will usually be found in this type of business that a relatively high percentage of the total volume of business is made up of a few products. In two different cases, for example, of plants producing over 15,000 products it was found that over 70 per cent of the sales were on approximately 500 products. It is not difficult to schedule the production of 500 products, nor does the clerical procedure involved add much to manufacturing costs. A plant in Indianapolis, by budgeting the production of certain products in a situation similar to that outlined above, effected a net saving in cost of approximately 10 per cent. Admitting without argument the folly of detailed schedules for all products in certain situations, it should be emphasized that there is a place for production budgets if savings can be effected by scheduling only a part of total volume.

A Difficult Situation to Face

The most difficult situation which an executive is called upon to face in budgeting production is that found in a business producing a great variety of products entirely to special order. It is here that budgeting seems to many people to break down. But the problem is not always as hopeless as it seems. It frequently happens that the manufacturer, although making a product only for one customer, secures "repeat" orders from that customer with fair regularity. In such a situation budgeting is possible, though admittedly not necessarily expedient. It is sometimes possible to consult the production plans of the customer and budget on a basis of the information thus secured. If through financial inducement or otherwise, the customer can be persuaded to contract well in advance of delivery, so much the better. Assuming, however, the worst possible case, in which the accurate estimating of production requirements is impossible, it frequently is true, even here, that raw material and labor requirements can be planned to good advantage and with reasonable success. Though the products of a concern are many, the types of raw material and classes of labor needed in their production may be few. An iron foundry is a case in point. Finally, if detailed planning in terms of products is considered to be out of the question, something can usually be gained by general planning in terms of tonnage, yardage, or even dollars.

Technique of Budgeting

Having very briefly surveyed a number of typical business situations with reference to the problem of budgeting direction, a few remarks may now be made concerning the technique of budgeting. The discussion will be in two parts: (1) Budgeting manufacturing volume; (2) Budgeting production cost. It will be necessary here to talk concretely and somewhat arbitrarily, but from what has already been said it should be apparent that methods and procedures must be adapted to the individual case.

The planning of manufacturing volume involves four things:

1—Estimating the total to be produced in the budget period;
2—Scheduling production by months or similar periods;
3—Setting up budget control devices;
4—Enforcing or modifying estimates.

Question of Responsibility

The question of responsibility arises at once, and is one about which few generalizations can be made. Three departments are usually primarily concerned, i. e., production, stock-records and accounting, and the question of defining the responsibilities of each is fraught with difficulties. In one large company which has been unusually successful with production budgeting, a separate department has been established, a part of whose function is to draft production estimates. The approval of the manufacturing executives is, of course, secured, before plans are made operative. When the drafting of estimates is left to a separate department, whether it be accounting, stock-records or otherwise, a delicate organization problem results and a high degree of co-operativeness is essential. In its absence conflicts are certain to appear. In preparing estimates the usual practice is to show expected production by months into the future, with certain provisions for revisions

*N. A. C. A. Bulletin.

of monthly estimates at the beginning of each month. After final approval of estimates by the production department the responsibilities of the production and stock-records departments should be stated clearly, The former should be responsible for:

1—The execution of the budget according to schedule; or

2—The prompt detection and reporting of development or prospective developments which will prevent the execution of budget plans.

The stock-records department should be responsible for:

1—Making available data on production, shipments, and inventory upon which to base original production estimates;

2—Constantly watching inventories and reporting both shortages and excesses to the proper authority;

3—Keeping records in such a way as to detect failure on the part of the production department to deliver into stock according to schedule;

4—Periodic reports on actual deliveries into stock compared with the budget and on inventory conditions.

Length of the Budget Period

Nothing has so far been said concerning the length of the budget period. This will depend usually upon local factors, the situation in a company making telephone equipment, for example, being quite different from that of a concern producing plumbers' supplies. It is sound policy in any business of a permanent nature to draft broad plans reacting several years into the future. In one case, plant expansion and rate of growth are planned from three to five years in advance. As far as detailed planning of manufacturing volume is concerned a method which has been found successful in a number of cases is not to estimate the total annual production for each item a year in advance, but to schedule production only about three months ahead. On May 1, for example, the estimate for July is drawn up and approved. At the same time the estimate for June (approved on April 1) may be revised, if necessary. Whatever budget period is selected in a given case will depend upon the length of time over which reasonably accurate forecasting can be done and also upon the importance of planning in the particular case. If the business has a short production period and is such that expansion or contraction of capital, labor and raw material can be quickly effected, a long budget period may be unnecessary. If a business is highly seasonal, with but one selling season, planning on an annual basis is necessary.

Manufacturing costs are usually of four classes:

1—Materials;
2—Direct labor;
3—Controllable indirect expense;
4—Uncontrollable indirect expense.

Estimating Material Costs

Estimating material costs involves two steps: (1) Estimating amounts to be purchased; (2) Estimating price. By working from production schedules and inventory records an analysis of material requirements can be made. Applying price estimates to the results of this analysis will give estimated material cost for the period. It should be pointed out here that the budgeting of raw material purchases has several objectives, only one of which is the estimating of material cost of production. From the point of view of the business as a whole it is important also to estimate cash outlay for materials, purchase orders to be placed, and deliveries into stock, in terms of products. Various important adjustments are obviously necessary before all of this information can be obtained. The responsibility for the preparation and enforcement of material estimates will rest largely upon the production and purchasing departments. Constant use must, of course, be made of the raw material inventory records. The center of control over raw materials is here, just as the center of control over finished goods is in the finished goods stock records. It cannot be over emphasized that the materials budget is a standard of performance for the purchasing agent. Once he has acquiesced in the budget he should be expected to conform to it, but as to delivery schedules and as to price. Only serious developments within or without the business which were unpredicted should be adequate ground for modification of estimates.

If for any reason in a particular case the scheduling of purchases as outlined above is not thought to be practicable, other devices may be resorted to which will produce some of the benefits of budgeting. Statistical data on standard material content and cost per unit of product should, if possible, be made available. Estimating total material cost is thus simplified. If it can be done at reasonable cost, schedules should be prepared showing for each finished product the effect upon cost of production of changes in raw material cost. If such information is available it greatly expedites the revision of the original budget of material cost. It also is useful in changing sales prices.

Estimating Direct Labor Costs

Direct labor costs may be estimated in one of various ways. The personnel policy of the firm will have much to do with determining the actual method to be followed. An analysis of the production schedules on a basis of direct labor per unit of product may be expedient. By calculating total labor hours for each type of direct labor and applying wage rates to the resulting totals, the total direct labor cost of the manufacturing program can be estimated. By making certain adjustments the estimate of cash outlay for direct labor and the employment program of the manufacturing department may be drafted.

If conditions are favorable an accurate estimate of direct labor cost can be simply worked out on a basis of payroll data. In certain cases payroll records supplemented by a consideration of future conditions will give fairly accurate results. The tabulation of standard labor costs per unit of product is worth considering as a means of estimating the labor cost of production. Such information is seldom found in the records of business firms, but if its collection is not too expensive it is something well worth having. It is useful not only in budgeting, but also in estimating job costs and setting sales prices. It is sometimes possible to go even further and collect data showing the effect of changes in wage rates on total manufacturing cost. With such information available the function of pricing can be carried on far more effectively than otherwise.

Standard Overhead or Burden Rates

It is customary in business to use the term "overhead" to refer to all items of cost not conveniently charged directly to the product. "Indirectness" is the only thing which these expenses have in common. Standard overhead or burden rates are frequently worked out for convenience in costing. These rates are so designed as to cover all classes of indirect expense, and any amount which is unabsorbed at the end of the accounting period is usually charged to profit and loss. This amount is often considered to be some measure of the efficiency and economy of the production department. The concern which follows such a practice as this is, of course, budgeting one element of manufacturing cost. But unless the burden balance is supported by detailed expense analysis, it is difficult to see how a real budget control is being utilized. It is necessary in some way to distinguish between controllable and uncontrollable expense. A compromise method may be effected whereby the old single standard expense rate is used and is supplemented by a system of estimates and reports showing individual expense items classified as between controllable and uncontrollable. Such a procedure would have the advantages of preserving the comparability of past data and would avoid the scrapping of old rates and the working out of new. By giving detailed expense analyses it would make it possible to "pin down" the responsibility for unabsorbed burden.

Two Sets of Burden Rates

Much can be said for the practice of working out two sets of burden rates, one to include controllable items of manufacturing expense, the other to include uncontrollable items. By so doing,

(*Continued on page 68*)

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING NOVEMBER 14, 1925

SUMMARY

News print .....3331 rolls
Cigarette paper .....1726 cs.
Wall paper .....128 bls., 18 cs.
Paper hangings .....133 bls., 8 cs.
Printing paper .....111 rolls, 84 cs., 76 bls.
Wrapping paper .....422 rolls, 265 bls., 12 cs.
Packing paper .....139 bls., 12 cs.
Surface coated paper .....68 cs.
Baryta coated paper .....147 cs.
Basic paper .....18 cs.
Decalcomania paper .....12 cs.
Tracing paper .....2 cs.
Filter paper .....59 cs.
Drawing paper .....20 cs.
Tissue paper .....3 cs.
Writing paper .....6 cs.
Envelopes .....96 cs.
Wall board .....35 cs.
Cellulose paper .....10 bls.
Cover paper .....3 cs.
Paper spools .....62 cs.
Straw board .....252 rolls
Miscellaneous paper ...2663 rolls, 860 bls., 219 cs.

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International Forwarding Co., N. Amsterdam, Rotterdam, 12 cs.

J. P. Heffernan Paper Co., Stockholm, Gothenburg, 220 bls.

C. K. MacAlpine & Co., Stockholm, Gothenburg, 422 rolls.

PACKING PAPER

J. P. Heffernan Paper Co., Stockholm, Gothenburg, 139 bls.

F. C. Strype, N. Amsterdam, Rotterdam, 12 cs.

SURFACE COATED PAPER

Gevaert Co. of America, N. Amsterdam, Rotterdam, 50 cs.

P. C. Zuhlke, N. Amsterdam, Rotterdam, 10 cs.

Brown Bros. & Co., Andania, Hamburg, 8 cs.

BARYTA COATED PAPER

Globe Shipping Co., Bremen, Bremen, 97 cs.

F. Henjes, Jr., Bremen, Bremen, 50 cs.

BASIC PAPER

H. Henjes, Jr., Bremen, Bremen, 18 cs.

DECALCOMANIA PAPER

C. W. Sellers & Co., Bremen, Bremen, 7 cs.

Phoenix Shipping Co., Bremen, Bremen, 5 cs.

TRACING PAPER

Rohner & Gehrig Co., La Savoie, Havre, 2 cs.

FILTER PAPER

E. Fougera & Co., Rousillon, Bordeaux, 48 cs.

H. Reeve Angel & Co., Inc., Minnekahda, London, 7 cs.

E. H. Sergeant & Co., Stockholm, Gothenburg, 4 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Minnekahda, London, 3 cs.

Devoe & Reynolds Co., Minnekahda, London, 3 cs.

Keuffel & Esser, Westphalia, Hamburg, 14 cs.

TISSUE PAPER

F. L. Kramer & Co., Minnekahda, London, 3 cs.

WRITING PAPER

S. Stern, Minnekahda, London, 1 cs.

Guibout freres, Majestic, Havre, 5 cs.

ENVELOPES

Globe Shipping Co., Bremen, Bremen, 96 cs.

WALL BOARD

O. M. Baxter, Inc., Stockholm, Gothenburg, 35 cs.

CELLULOSE PAPER

Rosco Trading Co., Inc., Westphalia, Hamburg, 10 bls.

COVER PAPER

International Forwarding Co., Westphalia, Hamburg, 3 cs.

PAPER SPOOLS

J. I. Bernitz, Bremen, Bremen, 62 cs.

STRAW BOARD

A. Vuyck, N. Amsterdam, Rotterdam, 252 rolls.

MISCELLANEOUS PAPER

F. C. Strype, N. Amsterdam, Rotterdam, 2 cs.

Wilkinson Bros. & Co., Inc., N. Amsterdam, Rotterdam, 7 cs.

H. Reeve Angel & Co., Inc., Genoa Maru, Yokohama, 4 cs.

F. C. Strype, Hektor, Marseilles, 8 cs.

Keuffel & Esser, Hektor, Marseilles, 4 cs.

Perry, Ryer & Co., Caledonia, Glasgow, 117 cs.

Perkins, Goodwin & Co., Andania, Hamburg, 2 cs.

International Accep. Bank, Innoko, Rotterdam, 4 cs.

J. P. Heffernan Paper Co., Stockholm, Gothenburg, 128 bls.

T. Barret & Son, Stockholm, Gothenburg, 20 rolls.

Maurice O'Meara Co., Stockholm, Gothenburg, 134 bls.

Hope Paper Co., Stockholm, Gothenburg, 48 rolls.

Arkell Safety Bag Co., Stockholm, Gothenburg, 353 rolls.

The Borregaard Co., Inc., Stockholm, Gothenburg, 1982 rolls.

The Borregaard Co., Inc., Stockholm, Gothenburg, 430 bls.

Crepe Kraft Co., Stockholm, Gothenburg, 63 rolls.

Wilkinson Bros. & Co., Inc., Stockholm, Gothenburg, 197 rolls.

Wilkinson Bros. & Co., Inc., Stockholm, Gothenburg, 168 bls.

P. H. Petry & Co., Westphalia, Hamburg, 10 cs.

F. L. Kramer & Co., American Merchant, London, 2 cs.

Japan Paper Co., La Savoie, Havre, 17 cs.

Catel & Furey, La Savoie, Havre, 6 cs.

P. H. Petry & Co., La Savoie, Havre, 6 cs.

P. Puttman, La Savoie, Havre, 30 cs.

RAGS, BAGGINGS, ETC.

G. M. Graves Co., N. Amsterdam, Rotterdam, 62 bls. rags.

G. M. Graves Co., N. Amsterdam, Rotterdam, 75 bls. bagging.

Marx Maier Paper Mill Supply Corp., N. Amsterdam, Rotterdam, 179 bls. bagging.

National City Bank, N. Amsterdam, Rotterdam, 100 bls. rags.

Mechanics & Metals National Bank, N. Amsterdam, Rotterdam, 214 bls. rags.

American Woolstock Corp., N. Amsterdam, Rotterdam, 55 bls. rags.

The Barret Co., N. Amsterdam, Rotterdam, 51 bls. rags.

Atlas Waste Manfg. Co., N. Amsterdam, Rotterdam, 42 bls. rags.

The Stone Bros. Co., Inc., N. Amsterdam, Rotterdam, 38 bls. rags.

D. M. Hicks, N. Amsterdam, Rotterdam, 109 bls. rags.

The Stone Bros. Co., Inc., Mercier, Antwerp, 123 bls. rags.

Equitable Trust Co., Mercier, Antwerp, 21 bls. rags.

Castle & Overton, Inc., Mercier, Antwerp, 72 bls. bagging.

Brown Bros. & Co., Mercier, Antwerp, 127 bls. rags.

W. Schall & Co., Mercier, Antwerp, 138 bls. paper stock.

W. Schall & Co., Lehigh, Dundee, 86 bls. paper stock.

A. W. Fenton, Inc., Lehigh, Leith, 29 bls. rags.

A. W Fenton, Inc, Lehigh, Leith, 75 bls. bagging.

A. W. Fenton, Inc., Jessmore, Belfast, 78 bls. rags.

M. Snedeker Corp., Jessmore, Belfast, 65 bls. rags.

Maurice O'Meara Co., Jessmore, Dundee, 24 bls. paper stock.

Mechanics & Metals National Bank, Jessmore, Leith, 68 bls. bagging.

New York Trust Co., Jessmore, Leith, 52 bls. rags.

The Stone Bros. Co., Inc., Genoa Maru, Kobe, 25 bls. rags.

Amsinck, Sonne & Co., Inc., Hektor, Marseilles, 440 bls. rags.

State Bank, Hektor, Marseilles, 79 bls. rags.

G. M. Graves Co., Yuri Maru, Hamburg, 76 bls. cuttings.

Brown Bros. & Co., Yuri Maru, Hamburg, 238 bls. rags.

A. W. Fenton, Inc., Yuri Maru, Hamburg, 45 bls. rags.

A. W. Fenton, Inc., Andania, Hamburg, 79 bls. rags.
R. Wolf, Innoko, Rotterdam, 61 bls. rags.
A. W. Fenton, Inc., American Banker, London, 112 bls. rags.
Jaffe Products Co., Orizaba, Havana, 20 bls. rags.
A. W. Fenton, Inc., London Commerce, London, 472 bls. rags.
Columbia Trust Co., Cedric, Liverpool, 108 bls. bagging.
E. J. Keller Co., Inc., Eastern Victor, Antwerp, 257 bls. bagging.
A. W. Fenton, Inc., Westphalia, Hamburg, 48 bls. rags.
Whaling Waste Products Co., Westphalia, Hamburg, 49 bls. jute card waste.
Whaling Waste Products Co., Westphalia, Hamburg, 40 bls. rags.
L. H. Abenheimer, Westphalia, Hamburg, 51 bls. rags.
National Park Bank, Westphalia, Hamburg, 81 bls. bagging.
Mechanics & Metals National Bank, Westphalia, Hamburg, 162 bls. bagging.
E. J. Keller Co., Inc., Westphalia, Hamburg, 40 bls. bagging.
Salomon Bros. & Co., Westphalia, Hamburg, 100 bls. rags.
North German Lloyd, Bremen, Bremen, 36 bls. rags.
Chemical National Bank, Bremen, Bremen, 112 bls. rags.
Castle & Overton, Inc., Bremen, Bremen, 28 bls. rags.
A. W. Fenton, Inc., Bremen, Bremen, 140 bls. rags.
National City Bank, Bremen, Bremen, 22 bls. rags.
Atterbury Bros., Inc., Steel Seafarer, Alexandria, 68 bls. bagging.
E. J. Keller Co., Inc., Collamer, St. Nazaire, 59 bls. rags.
Salomon Bros. & Co., Collamer, St. Nazaire, 61 bls. rags.
Maurice O'Meara Co., The Angeles, Buenos Aires, 214 bls. rags.

OLD ROPE

W. Steck & Co., N. Amsterdam, Rotterdam, 96 bales.
E. J. Keller Co., Inc., N. Amsterdam, Rotterdam, 72 coils.
Brown Bros. & Co., N. Amsterdam, Rotterdam, 83 coils.
Darmstadt, Scott & Courtney, N. Amsterdam, Rotterdam, 115 coils.
Brown Bros. & Co., Westphalia, Hamburg, 50 coils.
New York Trust Co., Bremen, Bremen, 39 coils.

MANILA ROPE

Republic Bag & Paper Co., Pres. Hayes, Manila, 510 coils.

ROPE YARN

Manufacturers Trust Co., Pres. Hayes, Manila, 263 pgs.

WOOD PULP

Johanson, Wales & Sparre, Inc., Argosy, Hernosand, 3600 bls. sulphite, 600 tons.
E. M. Sergeant & Co., Argosy, Hernosand, 2400 bls. sulphite, 400 tons.
Pagel, Horton & Co., Inc., Argosy, Ornskoldsvik, 8472 bls. sulphate, 1412 tons.
Pagel, Horton & Co., Inc., Argosy, Ornskoldsvik, 600 bls. sulphate, 100 tons.
Bulkley, Dunton & Co., Argosy, Sundsvall, 1500 bls. chemical pulp, 300 tons.
Johanson, Wales & Sparre, Inc., Argosy, Sundsvall, 630 bls. sulphite, 105 tons.
Scandinavian Pulp Agency, Inc., Argosy, Sundsvall, 1825 bls. sulphite, 375 tons.
Pagel, Horton & Co., Inc., Lidvard, Hernosand, 3600 bls. sulphite, 600 tons.
J. Anderson & Co., Lidvard, Hernosand, 1500 bls. sulphite, 250 tons.
Bulkley, Dunton & Co., Lidvard, Soderhamn, 2500 bls. sulphite, 508 tons.
Bulkley, Dunton & Co., Lidvard, Soderhamn, 2885 bls. sulphate, 586 tons.
M. Gottesman & Co., Inc., Lidvard, Soderhamn, 2500 bls. sulphate, 508 tons.
Pagel, Horton & Co., Inc., Lidvard, Soderhamn, 3600 bls. sulphite, 609 tons.
J. Anderson & Co., Lidvard, Soderhamn, 1500 bls. sulphite, 254 tons.
Ira L. Beebe & Co., Inc., Yuri Maru, Hamburg, 1520 bls. wood pulp, 304 tons.
Castle & Overton, Inc., Yuri Maru, Hamburg, 410 bls. wood pulp, 83 tons.
E. M. Sergeant & Co., Stockholm, Gothenburg, 700 bls. sulphite pulp.
E. M. Sergeant & Co., Stockholm, Gothenburg, 299 bls. dry soda pulp.
Johanson, Wales & Sparre, Inc., Stockholm, Gothenburg, 150 bls. dry soda pulp.
Johanson, Wales & Sparre, Inc., Stockholm, Gothenburg, 350 bls. sulphite pulp.
J. Anderson & Co., Idefjord, Sarpsborg, 2350 bls. sulphite pulp.
Tidewater Papermills Co., Bornholm, Gaspe, 5718 bls. sulphite pulp.
Pagel, Horton & Co., Inc., Norefjord, Gefle, 2500 bls. sulphite, 508 tons.
Pagel, Horton & Co., Inc., Norefjord, Gefle, 2500 bls. sulphate, 508 tons.
Bulkley, Dunton & Co., Norefjord, Gefle, 2500 bls. sulphite, 508 tons.

WOOD FLOUR

A. Kramer & Co., Inc., N. Amsterdam, Rotterdam, 400 bags.
The Hansa Co., Innoko, Rotterdam, 700 bls.
The Burnet Co., Stockholm, Gothenburg, 203 bags.
B. L. Soberski, Idefjord, Fredrikstad, 1500 bags.

WOOD PULP BOARDS

Lowy & Lowy, Stockholm, Gothenburg, 10 bls.

BOSTON IMPORTS

WEEK ENDING NOVEMBER 14, 1925

Pagel, Horton & Co., Inc., Argosy, Gefle, 1250 bls. sulphate pulp, 254 tons.
Pagel, Horton & Co., Inc., Argosy, Gefle, 5000 bls. sulphite pulp, 508 tons.
Bulkley, Dunton & Co., Argosy, Gefle, 750 bls. sulphite pulp, 146 tons.
Bulkley, Dunton & Co., Argosy, Sundsvall, 1750 bls. chemical pulp, 350 tons.
Johanson, Wales & Sparre, Inc., Argosy, Sundsvall, 600 bls. sulphite pulp, 100 tons.
Scandinavian Pulp Agency, Inc., Argosy, Sundsvall, 3750 bls. sulphate pulp, 750 tons.
Pagel, Horton & Co., Inc., Argosy, Domsjo, 3000 bls. sulphite pulp, 500 tons.
Castle & Overton, Inc., ———, Germany, 825 bls. wood pulp.
Castle & Overton, Inc., Chickasaw, Manchester, 95 bls. waste paper.
Anglo-South American Trust Co., Lehigh, London, 170 bls. rags.
C. H. Dexter Sons, Lehigh, Dundee, 30 bls. paper stock.
E. J. Keller Co., Inc., Sac City, Mannheim, 142 bls. rags.
E. J. Keller Co., Inc., Sac City, Antwerp, 173 bls. rags.
Atterbury Bros., Inc., Linnell, Buenos Aires, 750 bags casein.
Atterbury Bros., Inc., The Angeles, Buenos Aires, 417 bags casein.

NEW ORLEANS IMPORTS

WEEK ENDING NOVEMBER 14, 1925

Castle & Overton, Inc., Montana, Antwerp, 102 bls. rags.
Castle & Overton, Inc., Duquesne, England, 124 bls. rags.
Castle & Overton, Inc., Elmsport, France, 270 bls. rags.
Castle & Overton, Inc., Elmsport, Antwerp, 166 bls. rags.

PORTLAND, ME., IMPORTS

WEEK ENDING NOVEMBER 14, 1925

M. Gottesman & Co., Inc., Lidvard, Iggesund, 2500 bls. sulphate pulp, 500 tons.
Equitable Trust Co., Lidvard, Hernosand, 4080 bls. sulphite pulp, 680 tons.
Price & Pierce, Ltd., Lidvard, Wallvik, 6000 bls. sulphite pulp, 1000 tons.

BALTIMORE IMPORTS

WEEK ENDING NOVEMBER 14, 1925

W. Hartman & Co., Yuri Maru, Hamburg, 1636 bls. wood pulp, 255 tons.
Bulkley, Dunton & Co., Norefjord, Gefle, 2250 bls. wood pulp.
Castle & Overton, Inc., ———, Germany, 1100 bls. wood pulp.
Baltimore Trust Co., Yuri Maru, Hamburg, 29 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING NOVEMBER 14, 1925

E. H. Bailey & Co., Jessmore, Leith, 62 cs. paper.
C. Schleicher Schull, Yuri Maru, Hamburg, 3 cs. paper.
Bernard Judae & Co., London Commerce, London, 1 cs. drawing paper.
Union National Bank, Lehigh, Leith, 219 bls paper stock.
New York Trust Co., Jessmore, Leith, 88 coils old rope.
Union National Bank, Jessmore, Leith, 60 coils old rope.
S. Birkenstein & Sons, Hektor, Barcelona, 11 coils old rope.
New York Trust Co., Hektor, Barcelona, 182 bls. rags.
National Bank of Commerce, Hektor, Marseilles, 110 bls. rags.
Baltimore Trust Co., Hektor, Marseilles, 100 bls. rags.
G. M. Graves Co., Yuri Maru, Hamburg, 151 bls. rags.
P. O'Neil & Co., Yuri Maru, Hamburg, 35 bls. rags.
Baltimore Trust Co., Yuri Maru, Hamburg, 212 bls. rags.
E. J. Keller Co., Inc., Yuri Maru, Hamburg, 254 bls. rags.
Maurice O'Meara Co., Yuri Maru, Hamburg, 112 bls. rags.
A. W. Fenton, Inc., Yuri Maru, Hamburg, 74 bls. rags.
Equitable Trust Co., London Commerce, London, 61 bls. waste paper.
Anglo-South American Trust Co., London Commerce, London, 300 bls. rags.
A. H. Searle, London Commerce, London, 30 bls. rags.
New York Trust Co., London Commerce, London, 140 coils old rope.
Baltimore Trust Co., Blue Triangle, Leghorn, 66 bls. rags.
The Stone Bros. Co., Inc., Collamer, St. Nazaire, 236 bls. rags.
Castle & Overton, Inc., Handicap, Spain, 204 bls. rags.
Castle & Overton, Inc., Hannover, Bremen, 1182 bls. rags.
Castle & Overton, Inc., Bristol City, Bristol, 213 bls. rags.
Castle & Overton, Inc., West Eldara, Belgium, 205 bls. rags.
Castle & Overton, Inc., Marina, Italy, 28 bls. rags.
Castle & Overton, Inc., Legie, Germany, 140 bls. rags.
E. J. Keller Co., Inc., Kermit, Hamburg, 1512 bls. rags.
E. J. Keller Co., Inc., West Campgaw, Hamburg, 229 bls. rags.
E. J. Keller Co., Inc., West Campgaw, Bremen, 70 bls. rags.
E. J. Keller Co., Inc., Hannover, Bremen, 226 bls. rags.
Castle & Overton, Inc., ———, Germany, 550 bls. wood pulp.

Standard Paper's New Warehouse Completed

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., November 16, 1925.—Completion of the Standard Paper Company's new immense storage warehouse and its being placed in operation will result in a decided saving in costs for that concern, through a reduced price in handling paper stock and in beater operations.

The building proper is bult of concrete, steel and corrugated iron siding. It is capable of storing 4,000 tons of stock at one time. This stock is handled by means of two 2-ton Shaw cranes, traveling through the upper regions of the warehouse on steel tracks. To facilitate unloading cars, an industrial track has been laid paralleling the regular siding, on which is operated a light flat deck car, drawn by a Ford truck.

In an enclosed portion of the warehouse is the breaker beater equipment for beating all filling stock. It has a maximum capacity of 100 tons daily and the equipment consists of a Shartle Machine Company's huge breaker beater, carried on low, heavy basement supports. Also two Shartle pumps, which deliver the pulp to any of the old beater rooms of the mill for final distribution. This equipment is electrically driven.

The warehouse proper was erected by the R. D. Boyer Company and is sprinkled throughout, that system having been installed by the Wheeler-Blaney Company, of this city.

Boston Paper Market More Active

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 14, 1925.—A steady volume of business has flowed through the Boston market this week, a survey shows. While there has been a spurt here and there, due to some special orders, the general trend has been toward a conservative, yet consistent demand for a variety of lines. One of the most healthy signs seen in this district in months appeared in the so-called raw stock division, that branch which has to do with old rags and papers.

This end of the industry has been dormant for months, according to reports coming from authentic sources. There has been a general complaint of poor business right through the summer. This week, however, a stronger demand was noticeable. It has been a well known fact that the mills have been running too close for some time. The break came early this week when some of the larger mills came into the market for stock. They came in as quietly as possible but they bought stock in generous amounts.

Old kraft and coarse stock are moving with a good tonnage reported and together with bagging and old rope are feeling the call strongly. There is no question that higher prices will soon prevail in these stocks. In the new rags and cuttings the demand is marking time and the old news and overissue news demand is still latent.

Fine paper houses report business as "only fair," somewhat different attitude than is the regular custom. The cheaper grades are in the greatest demand with the exception of greeting cards and engraved stationery stock. In analyzing the Boston situation this week it might be stated that this unusual turn of affairs in the fine grades business might be considered the "high spot" of news in the local trade.

On the other hand, the time is at hand when ledgers, bonds and accounting papers will be in heavy demand. Already some printers are at work on some commercial and banking orders for 1926.

Although kraft and coarse papers have not moved to any great extent this week, the slowing up is considered only temporary. The department store volume is increasing and the general retail trade in Greater Boston is away ahead of last year.

Paper, boxes and wrappings, for Christmas trade, are each year made more and more appealing to the consumer and it is noticeable here how the mills have kept abreast of the demand, in fact, created an entirely new demand for specially-covered gift boxes and wrappings for the holiday trade.

Week by week, the paper box trade appears to be getting more active. Most of the factories are on full time. This branch of the trade looks for a busy 1925 finale and continued good business early in 1926. A large volume of shipping containers, corrugated boxes and board, maintain the early Fall spurt. The shoe business is showing more activity and right now is calling for corrugated boxes and fiber containers almost exclusively. Of course, the coming holiday business is making business for the container manufacturers. The fiber containers and corrugated boxes are very much in demand with houses shipping electrical and household supplies.

News and chip board houses report no change in business or prices with only a fair volume moving. Buying is still close both in requirements and price.

Bleach Boilerman Killed at Lee

[FROM OUR REGULAR CORRESPONDENT]

LEE, Mass., November 13, 1925.—Dick De Mario, employed in the beater room of the Eaton Dikeman Company paper mill, was instantly killed at about seven o'clock this morning when he attempted to throw an electric switch to start a machine in the room. De Mario was employed as a bleach boilerman and while the circuit on the switch he attempted to throw carried only 220 volts, the theory is that in some way the current was increased between the man's body and the iron stairway at the head of which the switch was located. Electricians from the Lee Electric Company shut off the power at the mill. All efforts to resuscitate the man were fruitless, a physician working over him for two hours and a pulmotor being used to no avail.

Obituary

Donald Birnie

HOLYOKE, MASS., November 16, 1925.—Donald Birnie, president and treasurer of the Birnie Paper Company, of Brightwood, papeterie manufacturers, died this morning at his home, 38 Madison Avenue, after a long illness, at the age of 56. With William P. Birnie, who died October 17 of this year, and Alfred Birnie, who died about fifteen years ago, he founded the Birnie Paper Company a number of years ago. The concern first started in downtown Springfield, but on account of a fire were forced to move elsewhere, and a new factory was built in Brightwood, which has housed the industry since, together with additions that have been made.

Mr. Birnie was prominent before his last illness in social business and club life, being a member of the Colony and Century clubs, and vice-president of the Springfield Five Cents Savings Bank. Besides his wife he leaves ones on, Edmond Jobson Birnie, of Springfield; three brothers, the Rev. Douglass Putnam Birnie, of Washington, D. C., Walter Birnie, and Marvin Birnie, of Springfield; and two sisters, Miss Rebecca Birnie and Mrs. Carl Stebbins, also of Springfield. The funeral will be held Wednesday afternoon at the home, the Rev. Dr. James Gordon Gilkey, of the First Congregational church, officiating. Burial will be in the Springfield cemetery.

* * *

Wallace McCargo

ST. LOUIS, Mo., November 14.—Wallace McCargo, 63 years old, secretary of the Libby-Williams Paper Company, 421 North Second street, St. Louis, died at his home, 5413 Bartmer avenue, Sunday evening, November 8, of cerebral hemorrhage. He had been in the best of health and had eaten a hearty dinner two hours before his death.

Mr. McCargo was at his office as usual Saturday and that evening attended a meeting of the Odd Fellows, of which he was a prominent member, being secretary of the Odd Fellows Hall Association.

Mr. McCargo had been connected with the Libby-Williams Paper Company for about 40 years. He is survived by his widow and two daughters.

C. A. Reed Co. Builds Addition

WILLIAMSPORT, Pa., November 16, 1925.—The business of the C. A. Reed Company, crepe paper specialist and manufacturer of paper novelties, is growing to such an extent that it has become necessary to expand the already big plant by the erection of a large addition.

The contract has been let and work will begin on the structure this week. The present building is of brick and steel construction, 70 x 180 feet, four stories in height, and was completed in the spring of 1922. It is one of the most substantial industrial buildings in the city.

The addition, which is to go up at the west end of the original plant, will be 80 x 100 feet in dimension, four stories in height, with a basement. The material will be brick and steel, with concrete basement walls. This addition will in every way be equal to the standard of the original plant, and modern in every respect.

The business of the company has been prosperous from its beginning and is now one of Williamsport's most important industries. The product of the company is shipped to all parts of the United States and to Canada, Mexico and British Columbia.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, November 18, 1925.

With the tone of the market stronger than it has been for some time, the local paper trade business continues to expand along lines that justify the most optimistic hopes. Manufacturers and dealers from all over the country report large withdrawals of news print from their factories and an increase in contract orders and spot business for all grades.

In all probability the strong tone of the paper market will be maintained for all commodities well after the holiday season, though it is felt that the demand for newsprint, seldom as great in previous years, has been stimulated to a considerable extent by the holiday season and the marked increase of newspaper advertising.

The demand this year, it is reported, has exceeded all recent records so that an explanation other than the approach of Christmas, must be given. The answer, according to manufacturers, is that the general condition of the market is much better, irrespective of seasonal demand. Manufacturers expect this condition to be reflected until long after New Year.

Stocks of news print are reported to be lower this year than before. Prices remain firm as a result. This is true in general of the other products in the paper market. There is still a good demand for Manila and Kraft paper.

Mechanical Pulp

There being no signs of relief to remedy the scarcity of mechanical pulp, manufacturers still feel that the price of this commodity will go to a slightly higher level in the near future. There is no abatement in the demand for this material and the stocks continue to diminish. The demand for spot trading in the ground wood market is good, and it is also reported that a fair amount of contract business is being done.

Chemical Pulp

Buyers of chemical pulp are continuing to keep the manufacturers of this material busy, higher prices being anticipated and large stock orders being placed on the present scale. Kraft pulp is still scarce, about 80 per cent of the year's supply in Sweden having been sold. About 60 per cent of this nation's output of sulphite has also been sold. Shipments, therefore are still scarce.

Old Rope and Bagging

The market for domestic and foreign grades of bagging continues strong this week with a marked tendency reported toward higher prices. Offerings are still scarce while the demand remains large as usual. The market for old rope has not changed appreciably.

Rags

Foreign rags continue to be in high demand in the countries where they are manufactured. Home consumption is still strong, and prices abroad are higher than they are in America. There is still a good demand for domestic rags in the United States.

Waste Paper

Better grades of waste paper are still in good demand, the lower grades, according to reports, still evidencing a slight easing off. The market for old kraft paper is about to take a slight jump, it is said, but there has been little evidence of this to date. The price of this product is well maintained.

Twine

Manufacturers feel that many more weeks must pass before there will be a lessening of demand for twine, inasmuch as its seasonal popularity in department stores and shops will be extended, they hope, well into January. The outlook for the future is bright.

PRODUCTION BUDGETING

(*Continued from page 62*)

we would have two accounts (in each department) with unabsorbed burden. The balance in the first would be a fair indication of the efficiency and economy with which the production department has turned out its actual production volume; the balance in the second would be a fair indication of the cost of idleness. It is, of course, not implied that such a plan would work perfectly and without the aid of human judgment and interpretation. We are on thin ice when we discriminate glibly between controllable and uncontrollable expense. But it is thought that in controlling manufacturing expense we are trying to control two different things, expense on the one hand, plant idleness on the other. We should recognize this fact in the accounts.

To summarize, a complete system of production budgeting would involve:

1—An estimate of manufacturing volume, in physical units of output;

2—An estimate of raw material requirements, in physical units and in terms of cost;

3—An estimate of direct labor requirements, in terms of human units and in terms of cost;

4—Estimates of manufacturing expense, preferably distinguished as between controllable and uncontrollable expense.

By combining estimates it is possible to estimate the total cost of the manufacturing program and compare that cost with estimated income from sales. The desirability of the proposed program can then be passed upon intelligently.

International Offers Stock to Employes

GLENS FALLS, N. Y., November 14, 1925.—Employes of the International Paper Mills in this section have been notified of the company's plan for selling stock in the corporation to the workers. Employes are being offered seven per cent preferred stock at $90 a share, the size of the subscription being dependent upon salaries. According to the notice the stock may be paid for in full at any time before Jan. 1, 1926, or in weekly, semi-monthly or monthly installments. A bonus ranging from one to five dollars per share will be paid January 1, 1927, to January 1, 1931, inclusive, as an incentive to employes to complete their purchase agreements, retain their stock, and remain in the service of the company.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, November 18, 1925.

Although the chemical market was distinguished by no heavy increase in the volume of contract business last week manufacturers of the various products report that dealers are continuing to send in many inquiries about orders.

In the meanwhile, the usual steady quantity of spot business has been transacted, it is said. Indications point to an increase in immediate trading in the near future and to brisk contract sales for the coming year. There has been no weakening of the market, prices remaining about the same.

BLANC FIXE—The customary volume of spot business continues with no change in the blanc fixe market, though in some instances, reports indicate, there is a somewhat increased shading of prices. This tendency will cease, it is believed, by the first of the year, when dealers are expected to renew depleted stocks. The pulp is quoted at from $60 to $70 a ton and at from $55 to $60 a ton in bulk, at works. The powder still holds at from $75 to $90 a ton. In less than car load lots it brings from $80 to $85.

BLEACHING POWDER—The active demand for bleaching powder continues to keep the manufacturers of this material busy filling orders. There is little likelihood of the new contract prices being lowered. The prevailing high manufacturing cost may mean further increases in price, it is said, though this is not foreseen for the immediate future. Prices continue in the meanwhile to be quoted at from $2.00 to $2.40 per hundred pounds, in large drums, at works.

CAUSTIC SODA—Renewals of contract business as well as orders from new sources are continuing at a brisk pace in the caustic soda market, manufacturers from all over the country reporting large volume withdrawals of this material from the factories. Accumulations still remain below normal. Spot trading is good. The prevailing prices range from $3.10 to $3.15 per hundred pounds, at works.

CASEIN—Casein is maintaining a normal tone for this time of the year, no changes being reported. Manufacturers and dealers are transacting a customary good volume of business. Domestic casein is quoted at from 13 to 14 cents a pound, and foreign at from 13.50 to 14.75 cents a pound.

CHINA CLAY—Congestion of freight traffic in the south, said to be the result of an embargo in Florida, has had a marked influence on the china clay market. it is said. As a result of this congestion, dealers are reported to be turning to England for their supplies. Prices, however, are still quoted at from $14.50 to $22.50 a ton for imported grades, and at from $12 to $15 a ton for domestic.

CHLORINE—Chlorine continues to be in good demand. Manufacturers in all of the leading cities report renewal of contract orders and large volume withdrawals from their factories for shipment. There is no abatement in the active demand for spot trading, and prices remain firm. Orders are being filled at 4 cents a pound in tanks or multi-unit cars at works. The spot sale quotation is still 4½ cents a pound.

ROSIN—The bulk of the demand for rosin is for the low and medium grades, the scarcity of this product in America and the abnormal foreign demand continuing. The paler grades have remained practically unchanged. Paper makers grades are still quoted at from $15.55 to $15.60 in barrels of 280 pounds.

SALT CAKE—Firmness still marks the tone of the salt cake market, spot trading being brisk and contract withdrawals fair. The quoted price is in most instances $17 to $20 a ton in bulk, at works.

SODA ASH—Shipments of soda ash are pouring into the market in usual volume. Manufacturers report a particularly busy season now, since they are engaged with more activity than usual in filling orders. Spot trading is rather quiet. Prices remain at from 1.26 to 1.63 cents a pound in bulk at works.

STARCH—Refiners are still offering low prices for starch, due to the favorable cut in the price of grain, and buyers, it is said, are continuing to take advantage of the offers as applied to spot business, as well as contract withdrawals. The tone of the market remains the same as the several preceding weeks, there being no change in prices reported. Special paper starch still sells for $3.32 per 100 pounds in bags and in barrels.

SULPHITE OF ALUMINA—The Sulphite of Alumina market is as buoyant as usual. Prices are apt to be firmer, it is said, because of the record large size production of the nation's newspapers during the last month. Withdrawals on contract of this material are still reported to be very heavy. The price is quoted at from $1.40 to $1.50 per 100 pounds for commercial grades, and from $2.00 to $2.30 for the iron free in the same amounts.

SULPHUR—With a satisfactory demand for spot business and contract shipments obtaining in the Sulphur market, conditions this week remain about as usual. The price is still quoted at from $19 to $20 a ton, in bulk, ship side, and from $15 to $16 a ton at mine.

TALC—The price for talc remains at from $17 to $18 a ton according to grade, there being no interruption in the usual satisfactory trend of the market. Spot business is picking up a bit it is said.

CONSTRUCTION NEWS

(*Continued from page 40*)

said to be concluding negotiations with the Union Bag and Paper Company, New York, N. Y., for the purchase of a controlling interest in the St. Maurice Paper Company, for a consideration reported at $6,000,000. The prospective purchaser plans to take over the property and consolidate with its organization. Plans are under advisement for extensions and betterments, with the installation of additional equipment.

New Companies

New York, N. Y.—Korco, Inc., has been incorporated, with a capital of 200 shares of stock, no par value, to manufacture and deal in paper boxes and containers. The incorporators are F. H. Davis, and R. M. Nauman. The company is represented by R. A. Wormser, 32 Liberty Street, New York.

Detroit, Mich.—The New York Blue Print Paper Company of Detroit, Inc., has been incorporated with a nominal capital of $5,000 to manufacture and deal in special paper products. The incorporators are Judson M. Perry and Paul J. Bruning, Webster Hall, Detroit.

Waterbury, Conn.—The Standard Paper Company has filed notice of organization to deal in paper goods. Charles Vinebury 21 Brown Place, heads the organization.

Wilmington, Del.—The Mapes Consolidated Manufacturing Company, care of the Corporation Trust Company of America, du Pont Building, Wilmington, representative, has been incorporated with a capital of $1,500,000, to manufacture paper products.

St. Joseph, Mo.—The American Paper Stock Company has been incorporated to deal in a line of paper goods. The incorporators are Meyer and Harry Ungerman, 403 Corby-Forsee Building, St. Joseph.

West Milton Paper Mills Sold

BALLSTON SPA, November 16, 1925.—The West Milton Paper Mills, Inc., bankrupt, has been purchased by the First National Bank, Ballston Spa, and the Albany Security Company, Albany, according to John J. Jacobs, official of the bankrupt corporation.

Market Quotations

Quoted by Hepburn & Co., No. 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Abitibi Power and Paper, Gen. 6s 1940	101	103*
Advance Bag and Paper, 7s 1943	98	100*
Bastrop Pulp and Paper, 7½s 1932	104	108*
Brompton Pulp and Paper, 6s 1927	94	96
Beaver Board, 8s 1933	92	94
Bedford Pulp and Paper, 6½s 1942	98	...
Berkshire Hills Paper Co., 8s 1941	...	80
Beaver Products Corp., 7½s 1942	104	106
Belgo Canadian Paper, 6s 1943	101	103
Brown Paper Co., 8s 1931	102	...
Berlin Mills, 5s 1931	98	...
Bryant Paper Co., 6s 1942	99	102*
Brown Company Serial, 6s 1925-43	97	100
Central Paper 6½s 1925-42	91	94
Cape Breton Pulp and Paper, 6s 1932	100	...
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., 6s 1924-34	...	102
Champion Fibre Co. Notes, 8s 1930	101	...
Cherry River Paper, 5s 1929	98	100*
Donnaconna Paper Co., Ltd., 6s 1940	99	101
Eddy Paper, 7½s 1931	100	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	87	95*
Fox River Paper, 7s 1931	100	...
Fort Orange Paper Co., 7s 1942	95	99
Gilbert Paper Co., 7s 1927	96	...
Gilbert Paper Co., 6½s 1923-29	101	102*
Hammermill Paper Co., 6s 1930-39	99	...
Hummell, Ross Fibre Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1945	95	100
Lake Superior Pulp and Paper, 6s 1941	105	...
Mattagami Pulp and Paper, 6s 1937	90	...
Marinette & Menominee, 7½s 1936	104	...
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	102	105
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	101	...
Paterson Parchment Paper, 5½s 1927-28	98	100
Paterson Parchment, 6s 1938	98	100*
Parker Young Co., 6½s 1944	92	96
Price Bros. & Co., Ltd., 6s 1943	99	101
Provincial Paper Mills, Ltd., 6s 1940	97	...
Riordon Co., Series A, 8s 1940	115	118
Riordan Paper, 6s 1924	99	101
Riordan Pulp and Paper, Ltd., 6s, 1929	33	35
River Raisin Paper, 8s 1936	104	106
St. Maurice Paper Co., Ltd., 5½s, 1929	98½	99½
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, 7s 1941	96	99
Smith (Howard) Paper Mills, 6s 1934	98	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	88	95
Spanish River Pulp and Paper, 6s 1931	105	108
Spanish River Pulp and Paper, Gen 8s 1941	106	109
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Ticonderoga Pulp & Paper 1-5, 1930	88	93
S. D. Warren Company, 6s, 1945	97	100
Whittaker Paper, 1st 7s 1942	98	...
Watab Paper Co., 6½s 1942	100	104
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., 6s 1951	88	90

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	67	70
Abitibi Power and Paper, Pfd.	103	...
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd.	77	...
Beaver Board, Com.	4	6
Beaver Board, Pfd.	32	35
Bryant Paper, Cap	12	...
Bryant Paper, Pfd.	9	...
Chicago Mill & Lumber Co., Com	63	...
Chicago Mill & Lumber Co., Pfd.	98	104
Crown Williamette, Com	93	98*
Crown Williamette, 7% A, Pfd.	98	SW
Donnaconna Paper, Com.	49	54
Donnaconna Paper, Pfd.	95	100
Great Northern Paper, Cap	260	270
Jessup & Moore Paper, Pfd.	80	...
International Paper Co., Com.	55	60
International Paper Co., Pfd. 6%	75	80
Mengel Company, Com.	60	65
Mengel Company, Pfd.	83	93
Oxford Papers, Com.	102	...
Oxford Paper Co., Pfd.	100	...
Provincial Paper Co., Com	94	98
Provincial Paper Co., Pfd.	99	...
Price Brothers, Cap	47	50
St. Croix Paper	185	215
St. Maurice Paper Co., Cap	83	85
St. Regis Paper Co., Cap	54	56
Spanish River Pulp and Paper, Com	97	101
Spanish River Pulp and Paper, Pfd.	109	...
Ticonderoga Pulp and Paper, Cap	145	...
West Virginia Pulp and Paper, Cap	...	47
West Virginia Pulp and Paper, Pfd.	95	105
Whittaker Paper, Com.	50	...
Whittaker Paper, Pfd.	60	70

* Nominal.

Paper
(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.50	@ 3.90
Rolls, contract, '26	3.25	@ 3.65
Rolls, transit	3.75	@ 4.25
Sheets	4.00	@ 4.25
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.00	@ 9.75
M. F.	6.25	@ 8.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream		
White No. 1	.80	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.50	@ 7.00
No. 2 Domestic	5.75	@ 6.20
Southern	5.75	@ 6.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
S. Screening	3.00	@ 3.50
Card Middles	4.00	@ 5.00
Boards—per ton—		
News	45.00	@47.50
Straw	57.00	@60.00
Chip	42.00	@45.00
Binders' Boards	72.50	@77.50
Sgl. Mla. Lt. Chip	58.00	@60.00
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

Mechanical Pulp
(Ex-Dock)

No. 1 Imported—		
Moist	35.00	@40.00
Dry	38.00	@42.00
(F. o. b. Mill)		
No. 1 Domestic	28.00	@32.00

Chemical Pulp
(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	4.00	@ 4.50
Easy Bleaching	3.25	@ 3.60
No. 1 strong unbleached	2.95	@ 3.25
No. 2 strong unbleached	2.80	@ 2.95
No. 1 Kraft	3.00	@ 3.25
Sulphate—		
Bleached	3.75	@ 4.00
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	4.00	@ 4.75
Easy Bleaching Sulphite	3.00	@ 3.25
News Sulphite	2.75	@ 2.90
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	3.00	@ 3.25
Soda Bleached	4.00	@ 4.25

Domestic Rags
New Rags

Prices to Mill f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	14.25	@15.00
New White, No. 2	8.00	@10.00
Silesias No. 1	9.75	@10.50
New Unbleached	14.00	@14.62½
Washables	8.00	@ 8.25
Fancy	9.25	@ 9.75
Blue Overall	11.50	@11.75
New Blue Prints	7.25	@ 7.75
New Soft Blacks	5.75	@ 6.00
Mixed Khaki Cuttings	6.75	@ 7.25
Pink Corset Cuttings	11.25	@11.75
Pink Muslin	10.00	@10.50
New Light Seconds	3.50	@ 3.75
O. D. Khaki Cuttings	7.00	@ 7.50
Men's Corduroy	5.75	@ 6.25
New Mixed Blacks	4.00	@ 4.50

Old Rags

White, No. 1—		
Repacked	6.75	@ 7.25
Miscellaneous	6.25	@ 6.75
White, No. 2—		
Repacked	4.00	@ 4.25
Miscellaneous	3.50	@ 3.75
St. Soiled, White	2.90	@ 3.00
Thirds and Blues—		
Repacked	3.75	@ 4.00
Miscellaneous	3.00	@ 3.25
Black Stockings	3.75	@ 4.25
Roofing Rags—		
Cloth Strippings	2.30	@ 2.40
No. 1	2.30	@ 2.40
No. 2	1.90	@ 2.00
No. 3	1.50	@ 1.60
No. 4	1.60	@ 1.70
No. 5A	1.15	@ 1.25

Foreign Rags

New Light Silesias	9.50	@10.00
Light Flannelettes	10.50	@11.00
Unbleached Cottons	14.00	@14.50
New White Cuttings	14.00	@15.00
New Light Oxfords	10.00	@10.50
New Light Prints	9.00	@ 9.50
New Mixed Cuttings	4.25	@ 4.50
New Dark Cuttings	4.00	@ 4.25
No. 1 White Linens	10.00	@11.00
No. 2 White Linens	7.25	@ 8.25
No. 3 White Linens	6.25	@ 6.75
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.25	@ 4.75
Ord. Light Prints	3.25	@ 3.75
Med. Light Prints	2.50	@ 3.00
Dutch Blue Cottons	3.50	@ 4.00
Ger. Blue Cottons	2.75	@ 3.00
Ger. Blue Linens	4.00	@ 4.25
Checks and Blues	3.25	@ 3.50
Linsay Garments	2.15	@ 2.45
Dark Cottons	2.10	@ 2.20
Shoppery	2.00	@ 2.10
French Blues	3.75	@ 4.25

Bagging
Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.60	@ 4.00
Domestic	3.75	@ 4.00
Wool Tares, light	2.85	@ 3.00
Wool, Tares, heavy	2.90	@ 3.10
Bright, Bagging	2.75	@ 2.90
Mixed Bagging	2.40	@ 2.50
Sound Bagging	2.10	@ 2.20
Roofing Bagging	1.75	@ 1.80
Small Mixed Rope	2.25	@ 2.50
Manila Rope—		
Foreign	5.50	@ 5.75
Domestic	6.50	@ 7.00
New Bu. Cut	4.00	@ 4.25
Hessian Jute Threads—		
Foreign	4.50	@ 5.00
Domestic	4.25	@ 4.75

Old Waste Papers
(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.60	@ 3.80
Hard, White, No. 2	3.20	@ 3.40
Soft, White, No. 1	3.00	@ 3.25
Flat Stock—		
Stitchless	1.30	@ 1.40
Overissue Mag	1.30	@ 1.40
Solid Flat Book	1.20	@ 1.30
Crumpled No. 1	.85	@ .95
Solid Book Ledger	1.90	@ 2.00
Ledger Stock	1.50	@ 1.60
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.25	@ 2.40
New Cut No. 1	1.65	@ 2.00
Extra No. 1 old	1.20	@ 1.90
Print	.75	@ .85
Container Board	.65	@ .75
Bogus Wrapper	.75	@ .85
Old Krafts Machine compressed bales	2.35	@ 2.90
News—		
No. 1 White News	2.00	@ 2.10
Strictly Overissue	.75	@ .85
Strictly Folded	.67½	@ .75
No. 1 Mixed Paper	.50	@ .55
Common Paper	.50	@ .75

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.42	@ .45
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.36	@ .38

Finished Jute—			
Dark, 18 basis...	.30	@	.31
Light, 18 basis..	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.22	@	.24
No. 2	.20½	@	.22½
Tube Rope—			
4-ply and larger..	.16	@	.19
Fine Tube Yarn—			
4-ply and larger..	.20	@	.28
4-ply	.21	@	.24
.....	.22	@	.25

Unfinished Jute—			
Basis	.15½	@	.16½
Paper Makers' Twine			
Balls	.12	@	.13
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.20	@	.40
Ameri. Hemp, 6...	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis.....	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.20	@	.21

CHICAGO

Paper

F. o. b. Mill

All Rag Bond.....	35	@	40
No. 1 Rag Bond...	25	@	35
No. 2 Rag Bond...	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond.....	7	@	10¾
Sulphite Ledger....	9	@	12
Superfine Writing..	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book.	5½	@	7½
No. 1 S. & S. C. Book	6	@	7¾
Coated Book.....	7½	@	10
Coated Label.....	7½	@	10
News—Roll, mill...	3½	@	4¼
News—Sheets, mill	3¾	@	4¾
No. 1 Manila.....	4½	@	5½
No. 1 Fibre.....	4½	@	5
No. 2 Manila.....	4	@	4½
Butchers' Manila..	3¾	@	4½
No. 1 Kraft.....	6	@	6½
No. 2 Kraft (Northern Grade).....	5	@	5¼
Kraft (Southern Grade)	4¾	@	5
Wood Tag Boards.	4¼	@	6¼
Sulphite Screenings	3	@	3¼
Manila Tissue, 24x36 sheet	7¼	@	7¾
White Tissue, 20x30 sheet	7¼	@	7½

Boards, per ton—

(Delivered Central Territory)

Plain Chip	45.00	@	47.50
Solid News.....	47.50	@	50.00
Manila Line Chip.	57.50	@	60.00

Container Lined—			
(Delivered Central Territory)			
85 Test	—	@	75.00
100 Test	—	@	80.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.25	@	3.50
White Envel. Cuttings	3.15	@	3.25
No. 1 Soft Shav.	2.90	@	3.10
No. 1 Mixed....	1.45	@	1.50
No. 2 Mixed....	1.15	@	1.20
Ledger and Writings	1.55	@	1.60
Solid Books	1.45	@	1.50
No. 1 Light Books	1.00	@	1.05
Blanks	2.00	@	2.10
Kraft	2.45	@	2.50
New Kraft Cuts.	2.70	@	2.80
Manila Envelope Cuttings	2.50	@	2.60
Ex. No. 1 Manila..	2.25	@	2.35
Print Manila	1.05	@	1.10
Folded News (oversize)	.90	@	.95
Old Newspapers—			
No. 1	.80	@	.85
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.75	@	.80
No. 2	.55	@	.60
Straw Clippings....	.75	@	.80
Binders' Clippings..	.75	@	.80
Roofing Stocks, f. o. b. Chicago, Net Cash—			
No. 1.....	47.00	@	52.00
No. 2.....	45.00	@	50.00
No. 3	43.00	@	48.00
No. 4.....	41.00	@	46.00

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.10½
Rag Content.....	.17	@	.45
All Rag	.36½	@	.51
Writings	.08	@	.20
Superfines	.22	@	.50
News	.04	@	.04½
Book, Super	.08	@	.10
Book, Coated	.09	@	.14
Coated Litho.....	.09½	@	.15
Label	.09½	@	.15
Jute Manila No. 1.	.11	@	.12
Manila, Sul. No. 1.	.05	@	.05
Manila, Sul. No. 2.	.03¾	@	.04½
No. 1 Kraft.....	.05¾	@	.06½
No. 2 Kraft.....	.05¼	@	.05¾
Common Bogus....	.02½	@	.02¾
Straw Board	—	@	50.00
News Board	—	@	47.50
Chip Board	—	@	45.00
Single Manila Pulp lined board	57.50	@	60.00
Single White, patent coated board	75.00	@	82.50
Wood Pulp Board..	80.00	@	85.00
Binder Boards,....	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	3.75	@	4.00
White Black News	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White..	.02¾	@	.03
No. 2 Soft White..	.02½	@	.03
No. 1 Mixed.....	1.60	@	1.75
No. 2 Mixed.....	1.25	@	1.50
Solid Ledger Stock	2.00	@	1.75
No. 1 Books, Heavy	1.25	@	—
No. 1 Books, Light	—	@	1.25
No. 1 New Manila.	2.50	@	2.60
No. 1 Old Manila.	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.25	@	2.35
Overissue News ...	1.00	@	1.10
Old Newspapers ...	.70	@	.85
No. 1 Mixed Paper	.60	@	.47½
Box Board, Chip..	.60	@	.50

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	—	@	3.37½
Domestic	—	@	3.50
Manila Rope	—	@	5.50
Mixed Rope	2.00	@	—
Scrap burlaps	—	@	2.37½
Wool Tares, heavy.	2.50	@	2.75
Mixed Strings...	—	@	1.90
New Burlap Cutting	—	@	3.25

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.15½	@	.15
Silesias, No. 1...	.11	@	—
New Unbleached.	.14¼	@	.15
Washable	.07¾	@	.08
Fancy	.10½	@	—
Cottons—According to Grades—Blue—			
Blue overalls....	12½	@	—
New Black, soft....	.07	@	—
Khaki Cuttings.....	.07	@	—
Corduroy	.04	@	.05
New Canvas	.12	@	.12½

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1	10.00	@	—
Repacked	9.50	@	—
Miscellaneous	8.50	@	—
White No. 2—			
Repacked	6.50	@	—
Miscellaneous.....	5.25	@	—
Thirds and Blues—			
Repacked	5.00	@	—
Miscellaneous ...	3.50	@	—
Roofing Stock—			
No. 1	2.15	@	—
No. 2	1.90	@	—
No. 3	1.75	@	—
No. 4	1.90	@	—

PHILADELPHIA

Paper

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2.....	.16	@	.25
Fine, No. 3.....	.12	@	.20
Book, M. F.	.06¾	@	.07
Book, S. S. & C...	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph.	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila.	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila No. 2.....	.04	@	.04½
No. 2 Kraft.....	.05¼	@	.05½
No. 1 Kraft.....	.06¼	@	.06½
Common Bogus ...	.02¾	@	—
Straw Board	56.00	@	55.00
News Board	45.00	@	—
Chip Board	47.50	@	—
Wood Pulp Board.	4.50	@	5.00

(Carload Lots)

Binder Boards—			
Per ton	75.00	@	80.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	66.00	@	68.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply.	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Domestic Rags—New

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13½	@	.14
New White, No. 2	.06	@	.08
Silesias, No. 1...	.10½	@	.11
New Unbleached.	.14	@	.14½
Washable	.07½	@	.07¾
Fancy	.09½	@	.10
Cottons—according to grades—			
Blue Overall	.11	@	.12
New Blue.....	.04	@	.04½
New Black Soft..	.06	@	.06¾
New Light Seconds	.03½	@	.03¾
Khaki Cuttings..	.06½	@	.07
Corduroy	.04	@	.04½
New Canvas	.08¾	@	.09
New Black Mixed	.05	@	.05½

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	3.00	@	3.25
Domestic	3.00	@	3.25
Manila Rope	4.75	@	5.00
Sisal Rope	2.50	@	—
Mixed Rope	1.00	@	1.25
Scrap Burlaps....	2.25	@	2.50
Wool Tares, heavy.	2.00	@	2.15
Mixed Strings...	1.25	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.25	@	3.50

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.60	@	2.70
No. 2 Soft White	2.00	@	2.20
No. 1 Mixed....	1.50	@	1.60
No. 2 Mixed....	1.00	@	1.10
Solid Ledger Stock.	1.75	@	1.90
Writing Paper	1.60	@	1.80
No. 1 Books, heavy	1.30	@	1.40
No. 2 Books, light.	1.20	@	1.25
No. 1 New Manila.	1.80	@	2.00
No. 1 Old Manila..	1.60	@	1.75
Print Manila.....	1.25	@	1.35
Container Manila..	1.00	@	1.10
Old Kraft	2.00	@	2.10
Common Paper....	.50	@	.60
Straw Board, Chip.	.60	@	.65
Binders Bd., Chip..	.60	@	.65
Over issue News...	.85	@	1.00
Old Newspaper....	.70	@	.75

Old

White, No. 1—			
Repacked	6.75	@	7.00
Miscellaneous ...	6.25	@	6.50
White, No. 2—			
Repacked	.05	@	.05¼
Miscellaneous ...	.04¼	@	.05
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous ...	2.75	@	3.00
Black Stockings.	4.25	@	4.50
Roofing Stock—			
No. 1	2.00	@	2.15
No. 2	1.90	@	2.00
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	1.10	@	1.15
B	1.05	@	1.10
C	1.00	@	1.05

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.10½	@	.12½
Light tinted	.11	@	.13½
Dark tinted	.12½	@	.15
Ledgers (sulphite).	—	@	.13
Ledgers No. 1.....	.36	@	—
Ledgers No. 2.....	.27	@	—
Writing	.09½	@	
Writing S. C.	.10	@	
News f. o. b. Mills—			
Rolls (carloads)..	3.50	@	—
Sheets (carloads).	—	@	4.25
Sheets (2 tons or over)	—	@	4.60
Book—			
No. 1 M. F. (carloads)	8.00	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.50	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rap	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila ...	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.....	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood 30.00		@	32.50
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	75.00	@	80.00
Sulphate	62.50	@	65.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. cut..	3.65	@	—
Soft White Book shavings	—	@	3.15
White Blk, News	1.70	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers ...	1.40	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas..	1.10	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News ...	.90	@	—
No. 1 Mixed Papers	.70	@	—
Domestic Rags—			

Price to mills, f. o. b. Toronto

	Per lb.		
No. 1 White shirt cuttings	.14½	@	.14¾
No. 2 White shirt cuttings	.08	@	.08½
Fancy shirt cuttings	.09¼	@	.10
No. 1 Old Whites..	—	@	—
Third and blues...	—		—