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FIFTIETH YEAR

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

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PAGE 21!



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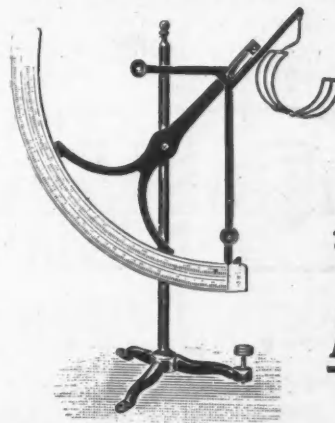
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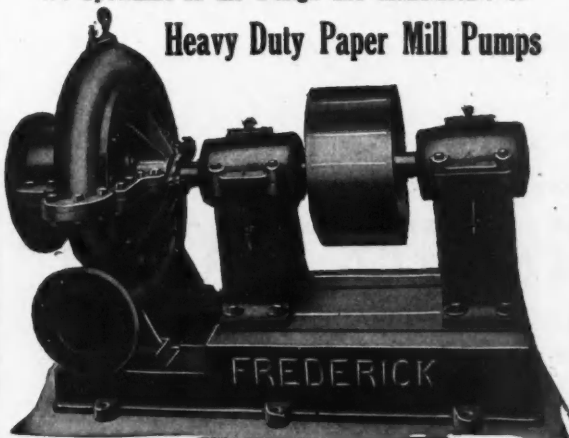
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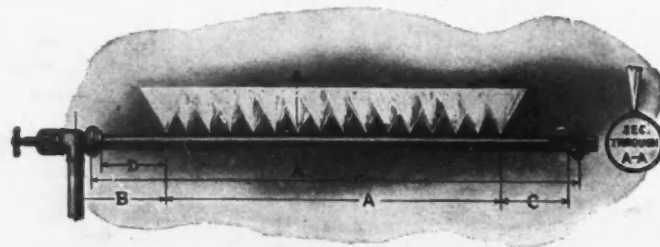


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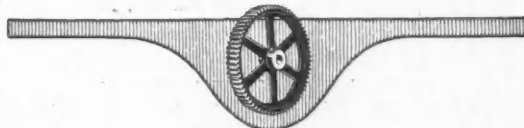
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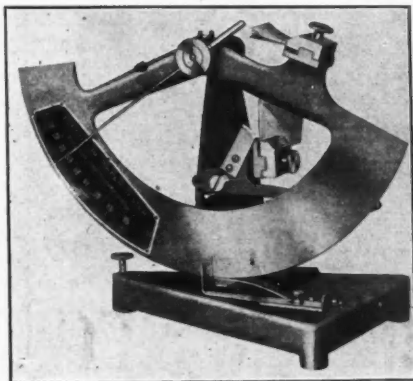
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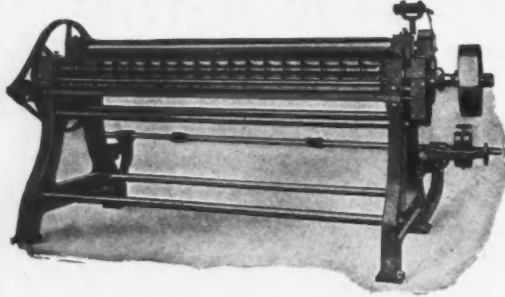
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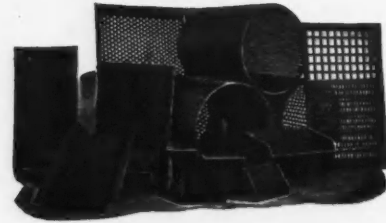
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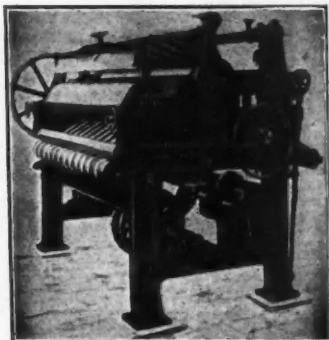
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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTIETH YEAR

PUBLISHED EVERY THURSDAY BY THE

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Thursday, June 15, 1922

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ONTONAGON PULP MILL SOLD TO W. B. VAN ALLEN, CARTHAGE

Property Which Was Sold by Order of the Referee in Bankruptcy Cost Over \$700,000 and Was Bid in for \$102,000 for New York and New England Creditors of the Northern Fiber Co., Its Original Owner—Plans of New Owners Still Incomplete but It Is Understood That There Is a Strong Probability That the Plant Will Be Changed from a Pulp Mill to a Paper Mill.

[FROM OUR REGULAR CORRESPONDENT]

HOUGHTON, Mich., June 12, 1922.—The unfinished pulp mill at Ontonagon, erected during the period of exorbitant paper and pulp prices but which was left incomplete when the war time market broke, has been sold by a referee in bankruptcy for a United States court in Wisconsin.

The sale was made recently at Ontonagon, in conformity with a United States court decree. The property, which cost over \$700,000, was bid in by W. B. Van Allen of Cathage, N. Y., on behalf of New York and New England creditors of the Northern Fiber Company, its original owner. The price was \$102,000, less than one-seventh of the amount that the Northern Fiber Company spent on the property.

The plans of the new owners for the disposal of the property are still incomplete but it is understood that there is a strong possibility that the new owners will change the plant from pulp mill to a paper mill, although the fact that a large amount of money must be expended to finish the plant and put it on a producing basis may delay action.

Order Valley Mill Stock Reassigned

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 12, 1922.—Acting on the request of some of the officers of the Valley Paper Mills Company of Neenah, the securities division of the Wisconsin railroad commission last week issued an order requiring \$680,000 of stock issued by the company on the basis of a formula for making glassine paper be reassigned to the company.

Authority to issue \$750,000 of stock to the owner of the formula was given some time ago by the securities division. This stock was to be paid as the company earned it. Recently it was found that a large part of this authorized stock had found its way into the hands of other men, it is said, and some officers of the company petitioned the commission to annul its order authorizing all the issue except \$70,000. According to information from an officer of the company, it was feared that the persons who had obtained control of the authorized but unpaid stock would gain control of the company whenever it earned enough to pay for the stock as required by the contract with the owner of the formula.

Hoberg Fibre & Paper Co. Offer Bonds

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 13, 1922.—Announcement was made last week of an offering of \$200,000 of 8 per cent cumulative preferred stock by the Hoberg Fibre and Paper Company of Green Bay. This company is a consolidation of the John Hoberg Company, Crivitz Pulp and Paper Company and the Green Bay Paper and Fibre Company, announced some time ago. It was announced that the stock is offered to complete necessary additions to the plants and to provide additional working capital to enable it to increase its production. The stock is non-redeemable and dividends will be paid quarterly.

Capitalization of the company includes an authorized issue of \$1,500,000 in first mortgage 7 per cent sinking fund bonds of which \$1,350,000 is outstanding; \$2,000,000 authorized 8 per cent cumulative preferred stock of which \$1,900,000, including present issue of \$200,000, is outstanding; 10,000 shares of no par value common stock of which 5,000 shares are outstanding.

The company recently installed a new paper machine and a new mechanical pulpmill of 30 tons capacity. Other improvements and additions also will be made, it is said.

Prospectus of the company declares that average net annual earnings, after deducting interest on the mortgage bonds now outstanding, were more than twice the dividend requirements on the authorized preferred stock. It also provides that if the dividends on preferred stock are not paid for three consecutive years management and control of the company shall pass to the preferred stockholders.

Officers of the company are Frank H. Hoberg, president; Thomas J. Dee, Chicago, vice-president; John Welsh, Green Bay, secretary and general manager; George D. Nau, treasurer.

Great Northern Pulp Co. Plans Improvements

[FROM OUR REGULAR CORRESPONDENT]

MADISON, Me., June 13, 1922.—An offer made by the Great Northern Paper Company to the town of Madison to build a \$15,000 bridge across the canal here if the town would contribute \$3,000 towards its construction has been accepted by the town. President Garret Schenck of the company, addressing a town meeting, said that his company is planning extensive improvements at its local plant, and offered to replace the present 65 foot bridge with one 25 feet longer, having a concrete floor four feet wider and capable of standing a strain of 85 feet to the square foot; build a new abutment at the east end, change water pipes, sewers, etc., if the town would do as stated. It was voted to accept and sign a contract with the paper company.

Heavy Rains in Fox River Valley

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 12, 1922.—The Fox river valley of Wisconsin experienced its heaviest rain in many years on Friday and Saturday of last week. It rained constantly for 24 hours doing considerable damage. Paper mills, however, were not seriously affected except that water got into some of the basements. Train service was hampered for a time because of washed out railroad tracks.

Awards \$12,100 Damages in Pulpwood Suit

[FROM OUR REGULAR CORRESPONDENT]

BANGOR, Me., June 13, 1922.—In the civil action of Eaton vs. Sawyer, which has been on trial in the United States District Court here the past week, the jury awarded the plaintiff a verdict of \$12,100 damages. Action was brought for \$25,000 damages for alleged failure of defendant, Frank S. Sawyer of Jonesport, to ship pulpwood under a contract in 1920, resulting in plaintiff being obliged to buy in the open market at higher prices to fill his order. The jury was out about an hour and a half.

Riverside Paper Co. Damaged by Fire

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 12, 1922.—A loss of about \$500 was caused at the fiber mill of the Riverside Fibre and Paper Company last week when fire started in the conveyor which carries refuse from the wood room to the boiler house. Temporary repairs were made and little time was lost.

DAYTON FLYERS TO MAKE MAP FOR THE SPANISH RIVER MILLS

Dayton-Wright Machine Will Be Used In Determining What Sections of the Canadian Forests Are Most Valuable for Producing Pulpwood for Paper Making—Raymond Bag Co. Holds Successful Convention of Its Salesmen from the Important Centers of the Country—Mercantile Corp. Steadily Increasing Its Output of Envelopes—Plant Equipped for Daily Capacity of 15,000,000.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, June 12, 1922.—The party of Daytonians commissioned to make a map of the pulpwood timber north of Lake Superior, embracing thousands upon thousands of acres in Canada, has left for the Northland and soon will be flying over the vast forests intent upon furnishing information, which it is believed, will be of inestimable value to paper manufacturers of the United States and Canada.

The Dayton party consisted of Bernard Whelan, chief test pilot of the Dayton-Wright Company; Walter E. Lees, commander of the crew; M. F. Beal, chief camera man, and J. R. Doty, assistant camera man.

The crew and experts were fitted out by the Spanish River Pulp and Paper Mill, Ltd., of Canada, for the purpose of determining what sections of the forest are the most valuable for producing pulpwood for paper making.

The airplane is regarded as the only practical means of determining these potent facts and a large FC2 plane was taken from the Dayton plant to make the trip.

Extra precautions were exercised to insure success of the aerial expedition and members of the party looked forward to a series of interesting experiences. A complete camping outfit was carried as well as a photographic equipment as the photographers will have to resort to primitive methods at some points and study out their problems as they proceed from point to point.

Inasmuch as thousands of square miles will be covered, the enormity of the work may be imagined. Under the law it will be necessary for a Canadian pilot to guide the machine over the inaccessible wilds of the far North, and a former World War flyer was chosen for the purpose.

The members of the party intended to leave Leaming, Ont., where all equipment is stored, without delay.

Aviator Whelan is testing out the plane after which he will return to Dayton. The others will be accompanied by two mechanics, thus forming a party of five, with the pilot and the photographers.

It is planned to use a small tug as a base of supplies in the Lake Superior region. It is expected the trip will consume the greater part of the Summer and Fall and considerable interest has been manifested in the expedition in many paper and pulp centers. As far as possible supplies for the men will be stored on the airplane which is one of the largest manufactured here.

The making of maps by means of photographs from the air is considered one of the most difficult tasks of the day but has been accomplished successfully and M. F. Beal, chief photographer, is confident of success. He has been flying photographic ships for four years. J. B. Doty, assistant camera man, has been identified with the *Dayton Daily News* photographic staff and is a capable man who anticipates his experiences in the Canadian forests as a real treat, despite the arduous work and the inevitable hardships ahead.

Bag Salesmen Meet at Middletown

A successful gathering of salesmen was held at Middletown

the past week when representatives of the Raymond Bag Company assembled for their annual meeting.

The sales convention was successful from several angles as it was the means of injecting "pep" into the organization at a time when trade is in need of stimulation.

Salesmen were present from Boston, Buffalo, Philadelphia, Minneapolis, Indianapolis and other large centers.

Officials of the bag company arranged special programs for each day of the convention, not overlooking social activities at the Country Club and other places.

Optimistic reports were made by many of the salesmen who say the outlook for the sale of bags and kindred commodities made in Middletown is growing brighter each month and that the year should witness an almost complete revival of business.

Increases Production of Envelopes

The Mercantile Corporation of Dayton, which turns out government stamped envelopes has increased its output. The daily average has increased more than one million stamped envelopes since the first of the year.

W. W. Barre, government agent at the plant of the Mercantile corporation stated Saturday that for the past several weeks the daily output has been increased steadily during the past month or more and the increased demand for such envelopes throughout the country is evidence in itself of daily increasing business.

The demand for increased supply of stamped envelopes will not affect the present organization, as the plant has equipment for a daily output of 15,000,000 stamped envelopes daily.

Three Rivers to Be Big Paper Center

A bulletin of the Canadian Pulp and Paper Association says:

"Early in July the new news print mill of the St. Maurice Lumber Company, a subsidiary of the International Paper Company of New York, at Three Rivers, Que., will bring its fourth paper machine into operation and will then constitute one of the largest single paper mills on the North American continent, with a news print capacity of approximately 340 tons a day. The mill is also equipped with a wrapping machine capable of turning out 30 tons a day and has an excess pulp production of some 200 tons.

"The St. Lawrence Paper Mills, Ltd., successors to the Three Rivers Pulp and Paper Company, Ltd., are breaking ground for a new mill at Three Rivers and have let a contract for two of the largest news print machines to the Dominion Engineering Company of Montreal. The first of these machines is expected to be in operation next November.

"These developments, coupled with others already established or in contemplation, are destined, in the minds of some authorities, to make the Three Rivers district the greatest paper producing center in Canada. With the Wayagamack Pulp and Paper Company, the St. Maurice Paper Co., and the International Paper Company already established and the St. Lawrence Paper Company's plant under construction, the potential output of paper from this district early next year it is estimated will amount to 800 tons a day or 240,000 tons a year in addition to about 130,000 tons of pulp for the market.

"The development owes its impetus to the large supply of pulpwood in the St. Maurice valley and to the availability of low cost electrical energy to a practically unlimited extent. The Shawinigan Water & Power Co., with its 326,200 h.p., supplies not only the mills mentioned but also those of the Belgian Industry Co., at Shawinigan Falls, (now installing a new 85-ton paper machine), the Donnacona Paper Co., at Donnacona, and others.

"Three Rivers as a result of the developments described, has become an object of great interest in pulp and paper circles and is attracting personal visits from engineers and experts from both Europe and the United States."

FINE PAPER SALES IMPROVED IN PHILADELPHIA MARKET

Market Slowly Changing from One Dominated by the Buyer to Concert of Interest on the Part of Buyer and Seller Alike—Paper Stock Shows More Activity Than in a Long Time—Waste Paper Division of the Typothetæ of Philadelphia Makes Contract with Hemingway Company—Paper Trade Golf Association Completes Arrangements for Tournament June 27.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, June 13, 1922.—The steadily increasing sales in the fine paper division of the trade continued unbroken during the week, and the paper stock end, which since the beginning of the year has been in a lethargic condition revived into a real activity. It is true that the fine paper distributors reported a greater gain in inquiries than in orders, but is likewise true that the character of these inquiries was such that they confidently were looked upon as presaging future business and meanwhile the gain in orders actually in hand was by no means inconsiderable. The market is slowly changing from one dominated by the buyer to a condition where there is concert of interest on the part of buyer and seller alike. During the week there was heard from the buyer very little of the haggling over prices and the expression of purpose to defer placing orders for a recession in values. The consumer seems to have become convinced of the contention of the paper men that paper prices in the main, have gone through the period of revision and that a rise is more to be expected than a decline.

Reduction in One Line of Kraft

In the coarse paper market the action of one mill which admittedly makes a strictly number one Kraft in reducing its prices, caused quite a flurry but after the first astonishment was over and there came from the other and even larger Kraft producers no reduction, the case was regarded as rather an isolated one. The coarse paper dealers do not believe that there will be general kraft reductions. All other prices were steadily to firmly maintained and the dominant thought is that the only change in sight is the one which will be incident to the freight reduction which is to take place July 1. Some in the trade point out as evidence of the better feeling and closer co-operation now existing between mills and distributors and a rising from the period of stress through which both have passed, the fact that several of the mills have made announcements that they would rebate to their customers whatever reduction in freight rates was made July 1, on orders which cannot be delivered until that time. It has been several years, dealers point out, since like consideration has been shown and it recalled to some of the veterans in the trade the memorable action of the New York and Pennsylvania Company many years ago when it not only rebated on orders in hand but actually sent to distributors check for amounts covering reductions on all the stock they had in their warehouses. An offer for a No. 2 grade of ledger paper at 8 cents and another at 8½ cents also caused a slight flurry but the trade looked upon them as due to exceptional circumstances and not by any means as indicative of a trend in the market. There are not a few who believe that if the mills advanced their prices even though only by the fraction of a cent, the effect would be exceedingly stimulating to business and would hasten the placing of orders by the restricted number who still are holding back waiting for something to turn up of benefit to themselves.

The largest gain of the week fell to the lot of the paper stock packers who longest have been looking forward to such a happy

event. All the better grades moved with ease, with the single exception of hard white. Mill inquiries indeed became almost lively, but behind them there is not yet sufficient urgency to make a further advance than the one reported a week ago. Mixed and commons again are in demand and at prices a trifle higher than they have been. Those prices the dealers say are not yet on a level to make the gathering up of this grade of stock profitable, and they look forward, upon the absorption by the mills of that which now is available, to a rise in quotation.

Collective Paper Stock Gathering

The paper stock dealers are watching with interest the actual operations of the long pondered over plan of the Typothetæ of Philadelphia to organize a Waste Paper Division and to dispose of stock gathered from the plants of its printer members, under a collective contract. Announcement was made by the Typothetæ that such a contract had been entered into with the Hemingway Company, 243 Elbow Lane, and that it was immediately operative. Thus far only a small percentage of Typothetæ members has joined the division but during the week a circular letter inviting membership was sent out. No charge to join the division was made and the option is given to those who enter into the arrangement to withdraw from it at any time after a complete month's trial, although the contract with the Hemingway Company runs over the course of a year. The price to be paid is fixed on a sliding scale at the market changes. Printers were informed that a representative of the Hemingway Company would visit them during the course of a week to make individual arrangement for time and conditions of collections and other details. The Typothetæ also announced that arrangements had been made with the Hemingway Company to carry a good grade of rags for wiping purposes for the print shops. The Waste Paper Division was installed and is being conducted under the personal supervision of District Secretary J. O. Adams, of the U. T. A. Organization, who has been in the city for several months.

Mr. Adams is confident that better prices can be secured to the printers but the chief consideration in organizing the division was to give improved service.

Better Understanding Between Paper Men and Printers

The trade reports a much better feeling and particularly of consideration on the part of the printers towards the fine paper industry attributing it to the unique and in point of influence and number, record breaking harmony gathering held last week in Kugler's Cafe. The peace plan outlined by George W. Ward as chairman of the Trades Relation Committee of the Paper Trades Association and confirmed by Wm. Sharples as chairman of the similar committee representing the Typothetæ, was ratified by a rising vote of thanks and to that extent officially was approved. While the point is made that some of the speakers not in the paper trade were unfortunate in the temper of some portions of their addresses, there is a disposition to overlook these matters and to enter whole-heartedly and in absolute good faith into the new co-operative plan whereby in briefest terms printers will look to the paper distributors rather than to the mills for their supply and fine paper distributors will sell such papers as are to be converted either into printed matter, engraved matter or blank books, only to the trade and not to the consumer. In the case of a consumer plant, sales will be limited by the capacity of the printing installation.

Arrangement for Golf Tournament

The Paper Trade Golf Association has decided that in addition to the cup provided out of its treasury for the low net score winner of the sixth annual golf dinner match of the paper printing and publishing trades of Philadelphia, prizes also will be awarded to the players having the second and third lowest net scores. The match will be held on the grounds of the Phillmont County Club on Tuesday, June 27, play starting between 9:30 and 10:30 o'clock in the

morning. At that time the twosomes will be played and the losing team will be charged with the expenses of the luncheon and ground fees. The foursomes will be played in the afternoon. The committee of which Arthur B. Sherrill is head suggests as the proper train the 9:17 from the Reading terminal.

The grounds, however, can be reached by automobile by way of Old York Road, Meeting House Lane, Second street pike to beyond Bethayres station and then the concrete road directly to the club house.

For More and Better Printing

R. P. Wood, assistant to Representative Snyder, in charge of the Philadelphia branch office of the American Writing Paper Company, in the Bourse, is planning with the co-operation of the Typotheta to organize a Joseph A. Borden Club for the purpose of advancing that company's campaign for more and better printing and consequently increased use of paper. He proposes to recruit from the ranks of past students of the Typotheta classes in cost finding, estimating, and salesmanship, a class which will make a thorough study of the company's series of booklets and allied matter. To facilitate this study Mr. Wood has had prepared a series of lantern slides in which the high lights of the booklets will be visualized and he will give a course of lectures on papermaking, and its adaptability to various purposes, salesmanship, and the buying of advertising matter. Mr. Wood in person is making distribution of the American Writing Paper Company's volume, containing samples of its bonds, ledgers, and writings. There are separate swatches of these papers but they are all contained in a booklet with a spring back which makes them instantly available. Two other volumes of the kind are to follow, one of them containing book and offset papers, and the other cover and bristol boards. Mr. Wood has under way the organization of similar classes in Camden, Atlantic City, Trenton, and Wilmington.

Whiting-Patterson Co. Outing

The business family of the Whiting-Patterson Company, enjoyed during the week its annual outing, guests from envelope factory shipping department and store being conveyed thence and home again by the firm's fleet of automobile trucks and the private cars of executives and salesmen. The star event scheduled for the afternoon was the baseball game between the office and warehouse forces, but a downpour of rain prevented the match. That, however, gave additional interest to the dancing contests. From these President Allen E. Whiting, early was ruled out for inability to come up to the standard. The prize in the waltz contest was given to Alfred Lear and Miss Quinn, and in the fox trot to Morris Kaplan and Miss Taylor.

Between showers a program of lawn sports for the ladies was carried out, suitable prizes being awarded. About the banquet table President Whiting spoke of the Whiting-Patterson spirit, and Major W. B. Hait made a happy response.

New Lines Ready for Distribution

E. N. Renner, manager of the Philadelphia branch of Charles W. Williams & Co., New York, located on the machinery floor of the Bourse, has ready for distribution the new line of Diamond Plaid and Homespun cover papers and also an entirely new line of printed and lithograph plain and embossed holly papers for which a very favorable reception is predicted.

Buys Interest of Elmer E. Garrett

Harvey Garrett, of the Edwin T. Garrett Company, Lansdown, Pa., has just purchased the interest of Elmer E. Garrett in that corporation, and at the meeting of the board of directors he was elected president and treasurer with H. L. Garrett, secretary. The new management expects in the near future to make installations of machinery and additional equipment in order to increase the output of its plant.

G. M. Wetmore Heads Groveton and Claremont Sales

At the recent sales conference of the Groveton and Claremont Paper Companies' sales organization, J. A. Bothwell, general manager of these companies, announced the appointment of G. M. Wetmore to the position of manager of sales to succeed I. S. Reynolds. The change was made necessary due to Mr. Reynolds having purchased an interest in the well known firm of paper merchants, Coy Hunt & Co., New York, where he has been elected vice-president and general sales manager.

Mr. Wetmore is especially well fitted to carry forward the policies of the companies, having served very ably as Mr. Reynolds' assistant since January, 1920, when he became connected with the companies.

In Cincinnati Mr. Wetmore served his apprenticeship in the paper business first with the Diem & Wing Paper Company for about



G. M. WETMORE

four years and later for about five years with Edward F. Herrlinger of Herrlinger & Co. of which company he was manager of the coarse paper department when he came East to accept the position of manager of sales of the Schmidt & Ault Paper Company of York, Pa.

Because of his experience as a paper distributor Mr. Wetmore has been able to appreciate the many problems of the paper merchant which assisted him very materially in building an excellent reputation for himself and his company during the four years he was manager of sales for the Schmidt & Ault Paper Company.

In his new position Mr. Wetmore not only has the advantage of his previous training both as paper merchant and mill man but his two years connection with Groveton and Claremont Paper Companies has given him an intimate knowledge of their products and equipment.

Chesapeake Corp. to Make Improvements

WEST POINT, Va., June 12, 1922.—The production in both the pulp and board mills of the Chesapeake Corporation, manufacturer of kraft pulp, board and paper, will be increased by the installation of additional equipment and extensions as a result of the floating of an \$800,000 bond issue recently. According to W. C. Gouldman, secretary, "the expenditures will amount to approximately \$300,000. Further plans are under consideration for an additional mill in the early fall which will probably cost in the neighborhood of \$600,000."

BOSTON PAPER MERCHANTS HAVE ENJOYABLE OUTING

Annual Summer Meeting at the Vesper Club, Lowell, Is One of the Most Successful in the History of the Organization—Solid Silver Trophies Are Offered as Prizes in the Athletic Events—Results of the Baseball Contest Between Manufacturers and Merchants Is Still Being Debated Although the Latter Were Awarded the Prize—Excellent Dinner Served at Vesper Club.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 8, 1922.—The Boston Paper Trade Association at its annual summer meeting held yesterday at the Vesper Country Club, Lowell, Mass., established a precedent which will unquestionably assure a constantly increasing attendance at its future annual summer meetings. The innovation, was the awarding of solid silver trophies as prizes for winners in the different athletic events. The large sterling silver cup which was offered as the first prize in the golf contest was the magnet which attracted the greatest interest and brought out a list of forty-four contestants, most of whom were in the play before 9 A. M. Charles A. Estey of the Estey Paper Company of Worcester, Mass., was the winner of the first leg on the cup which must be won three times by the same individual before becoming his permanent property.

Other Events

While interest chiefly centered in golf contest there were tennis, balloon chasing, paper tape slitting, paper laying, cigarette making, pipe smoking and three-legged racing contests which held serious and amusing interest for all.

There was a baseball contest between teams supposed to represent manufacturers and merchants but this was broken up by a fair golfer who resented the trodding of the greens by mere baseball tossers. Rumor had it the umpires were to blame for the interruption as their itchy palms had not been scratched with any of the green of the realm. The result of the contest is still being debated though "Casey" the immortal, captain of the merchants team received the prize, a box of cigars.

The day was of "the made to order variety" and those who were conveyed in the autos of the members, over the excellent roads of Middlesex County and through nature's finest scenery, had a most enjoyable trip from Cambridge to Lowell.

Excellent Arrangements

Praise is due those in charge of the cuisine of Vesper Country Club for the excellent dinner and the absolute absence of friction during its serving. We have all observed how the silent hand of "Oscar of the Waldorf" works its magic but "Oscar" at his best had nothing on the little lady of the Vesper Country Club. She is deserving of a sterling silver first prize. There were two "J's" upon whom the responsibility for the success of the outing was placed, J. Andrew, president of the association, and J. Snell, the secretary, and both can feel well rewarded for their efforts by the large attendance and the unanimously expressed opinion of its being "the best ever."

The following were the winners in the different events: Golf—Gest net score, Chas. A. Estey, sterling silver companionship cup; second best net score, Asoph Churchill, sterling silver flask; best gross score, Norman Harrover, silver pitcher; second best gross score, W. Norton Stetson, silver vegetable dish. Tennis championship—silver cup, N. L. Fox of Whitaker Paper Company; three legged race, Herbert Ham and J. L. Munro, miniature elks; Balloon race—T. Compton Walsh; Pipe and cigarette races—J. B. O'Brien; Paper cutting race—N. O. Hay.

Those Who Attended

Among those present were the following: John A. Andrew, Percy E. Weston, Arthur P. Allen, T. Charles Casey, W. J. Bigley, N. R. Bigley, H. J. Casey, Col. Charles L. Proctor, Arthur E. Pratt, F. W. Power, T. E. Allen, W. H. Furbish, Max Frank, A. A. Tanyane, of THE PAPER TRADE JOURNAL, W. R. Elliott, T. H. Hubbard, David Demarest, Charles L. Baird, M. H. Warren, R. H. Warren, Harold Peabody, A. M. Eaton, Arthur M. Burr, A. P. Ramage, J. D. Snell, W. J. W. McClellan, W. H. Hilton, J. J. O'Brien, J. L. Hodgins, H. A. Lindenberg, L. D. Post, D. K. Brown, G. C. Prior, A. B. Daniels, W. L. Daniels, J. G. Swift, M. V. Swift, Henry Goodman, L. A. Walden, F. H. Keep, A. J. Campbell, C. E. Horne, H. C. Ham, J. L. Munro, W. F. McQuillen, G. L. Hall, J. E. A. Hussey, T. C. Walsh, F. B. Cummings, Col. J. B. Jordon, W. J. Dobson, O. C. Robertson, W. J. Vaughn, W. N. Stetson, Jr., F. S. Leonard, G. H. Dean, P. A. Hammond, A. C. Denison, W. P. Simonds, W. M. Pratt, H. L. Carter, J. D. Hefferon, J. A. McCann, P. I. Langton, F. O. Johnson, A. L. Devens, G. Webster, C. H. Dodge, K. B. Fullerton, Jr., J. Ingalls, J. W. Vivian, J. C. DeCosta, L. Emerson, R. E. Sexton, F. C. Cate, F. H. Thompson, A. S. Brookhouse, E. L. Cummings, A. Churchill, C. A. Estey, E. D. Bement, R. H. Fales, F. T. Dolbeare, W. T. Jarvis, Walter M. Ray, H. W. Stratton, A. D. Bigelow, J. D. Rieg, E. R. Lyman, W. E. Livermore, G. P. Emery, P. Von Olker, P. B. Rising, C. H. Wood, J. W. Knowles, H. R. Woodward, R. Frothingham, H. C. Thayer, H. C. Upham, F. B. Tracy, H. L. Blake, H. A. Keep, W. A. Merrill, H. D. Bigelow, W. L. Muzzey, Bryant McQuillen and W. B. Stevenson.

Changes in U. S. Paper Division

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 14, 1922.—Grosvenor M. Jones who has been chief of the Paper Division of the Bureau of Foreign and Domestic Commerce since its organization, will resign as chief of this division and head the new financial division of the bureau.

It is expected that John Matthews, Jr., at present sales manager of the Miami Paper Company at West Carrollton, Ohio, will succeed Mr. Jones as chief of the bureau. Insofar as action by officials of the bureau is concerned, Mr. Matthews has been accepted, but in accordance with Governmental regulations, his application must be passed on before the United States Civil Service Commission. While it is not anticipated that any trouble will be forthcoming from that quarter, there is always a possibility of a slip until he is officially approved by the commission. Unless his application is not approved by the commission, Mr. Matthews will take charge of the Paper Division on August 1.

In the meantime, C. Southworth who has been assisting Mr. Jones in the Paper Division will be in charge of the division. As is well known, Mr. Southworth was with the United States Tariff Commission in connection with preparing its paper material for the present tariff bill.

The work of the Paper Division will be broadened on August 1, when Mr. Matthews takes charge so that in addition to handling paper, boxboard and other paper commodities, the division will also handle printed matter and printing and lithographing machines, etc.

Manning Paper Co. Damaged by Fire

TROY, N. Y., June 12, 1922.—Damage estimated at between \$20,000 and \$30,000 was caused recently by a fire which partially destroyed a one-story building on Clinton street, Green Island, occupied as a storehouse by the John A. Manning Paper Company.

The structure, which is built of concrete on one side and open on the opposite side, was filled with about 1,000 tons of raw materials, used in the manufacture of paper. This stock was almost entirely destroyed.

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I. S. REYNOLDS GOES WITH COY, HUNT & CO.

It has been announced that I. S. Reynolds has purchased an interest in Coy, Hunt & Co., 392 Lafayette Street, New York, and at a recent directors' meeting was elected vice-president. Mr. Reynolds will take up his new duties July 1st. It is understood that he will be General Sales Manager for which position he is particularly well qualified.

Mr. Reynolds for the past three and a half years, has been Manager of Sales for the well known mills, Groveton Paper Company and Claremont Paper Company, with his office in New York City. The successful methods he has used in distributing a daily product of 150 tons are very well known and it is hardly necessary to remark that the addition of his force to that of the well known firm of Coy, Hunt & Co., will prove of value to paper manufacturers.



I. S. REYNOLDS

In an open letter to his friends, Mr. Reynolds answers two interesting questions:—

1.—Why The Merchandising Business?

"The major portion of my experience has been on the mill end, but my first contact with the paper business in 1902 was with one of the largest fine paper houses in Chicago.

"This position brought the opportunity of learning about the various kinds of paper and their particular uses. I have often attempted to analyze my feelings when I first saw a complete Sample Cabinet with its thousand and one items—grades from Tag Board to Tissue and from Sheepskin Parchment to Railroad Writing. I was completely overwhelmed.

"Good fortune was with me after that and as quickly as I was qualified for more responsible positions, openings seemed to automatically occur, so before long the opportunity of taking a position of Country Salesman presented itself.

"Admitting that for a year I got more experience from my territory than the House got orders, was next importuned to accept a traveling salesman's position with a large company representing several paper mills.

"It developed, however, that this new connection brought me principally into contact with Newspaper Publishers direct, which it seemed, put me on a road marked "Detour." Therefore, when I saw a chance to get with a mill whose principle product was sold to Jobbers (good form at that time) I made a change.

"This opportunity came shortly after the dissolution of the

General Paper Company—group of Western Mills. In February, 1908, I opened the Chicago Sales Office, serving the Central States Territory for the mills now known as the Nekoosa-Edwards Paper Company. This was particularly fortunate for it brought me into personal contact with Lawrence E. Nash, Manager of Sales. His knowledge of the science of distribution of paper from the mill through to the eventual consumer is too well known nationally to require emphasis here.

"This comes up to the time of my recent connection as an executive in charge of sales of the Groveton Paper Company and the Claremont Paper Company. In this position I have necessarily been brought into the most intimate contact possible with many problems of distribution and it becomes necessary to confess that my earliest ambition has only been stimulated thereby. So after all, my connection with Coy, Hunt & Co. is only an attempt to fulfill a life's ambition which it appears that conditions conducive to success have developed."

2.—Why Coy, Hunt & Co.?

"To answer this question is a very simple matter. As a broad proposition, I believe it is generally accepted by most Paper Manufacturers that their best interests are served when they can distribute their product through paper merchants who carry paper stocks.

"It seems to me that Paper Merchants taken as a whole can properly be divided into three groups or classes, according to their own distributing methods.

"First and most numerous are those who seem to see their own selfish interest only, without any consideration for either their customers or the mills. They give no thought whatsoever to the functions they logically should perform in the present scheme of things.

"The Second Class, in which there appears to be a growing tendency, indicate by their methods, that they consider their own best interests are served by allying themselves on the side of their customers as against the mill. Their sales argument runs like this:—'make us an offer on an order and we'll see if we can get some mill to take it.' In reality, these merchants are almost subsidized buyers for their customers, giving generously of their specialized knowledge and training in paper, for only too meager remuneration.

"The Third Class of Merchants are those who recognize the proper relationships that naturally should exist. In other words, manufacturing in its broadest sense includes distribution of product. It follows logically therefore, that the problems of the 'Merchant-Distributor' are in reality problems of the Manufacturer in which, of necessity, he must be deeply interested. Therefore, the natural and correct thing for the Merchant to do is to increase the efficiency of his distributing machine, along lines most helpful to the Manufacturer. Only in this way can genuine progress in the industry be made.

"I am forced to admit that there are far too few Merchants in this class, considering the magnitude of the industry and the high type of business mind in the distributing end.

"In Coy, Hunt & Co. I found, through three years of contact, a management with clear ideals, policies and practices in full sympathy with the views held by the Merchants of the last named class. During the time of this contact I also became aware of the serious problems involved when an attempt is made to change from either the first or second class to the principles of the third class. Unless the change is made very skillfully and with good judgment at all points, disastrous results are apt to occur.

"Coy, Hunt & Co. have undoubtedly made this change very successfully and now with a fixed policy in business that can be defined, welcome the opportunity to be of greater service to the Paper Manufacturers in a constructive way."

To
PAPER MANUFACTURERS

Our Hat is still in the ring—reports and intimations to the contrary notwithstanding.

Considering twenty-four years Service, it is still **SOME HAT.**

With proper appreciation, we take this opportunity to state our recognition of the long and faithful services of all those who have helped to build up the enviable reputation back of the name of

COY, HUNT & CO.

392 Lafayette St.
NEW YORK

We promise to remember the past and employ it as a constant incentive to carry our good name to even greater heights and weave into the woof of its future those sound principles which separate the dross and demonstrate constructive merchandising.

STOKERS, DRAFT REGULATORS, FURNACES AND ASH HANDLERS FOR PAPER MILL POWER PLANTS

WRITTEN SPECIALLY FOR THE PAPER TRADE JOURNAL BY W. F. SCHAPHORST

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The following article is the seventh in a series of articles to be printed in the PAPER TRADE JOURNAL on the subject of Power Plant Machinery for Paper Mills. In this series of articles it will be the aim of the author to go through the entire power plant of the paper mill and give the non-technical official a pretty good idea of what he should have in his mill. As it is, owners and officials who are responsible for the buying frequently know very little about the different types of power plant machinery on the market.

As stated before in PAPER TRADE JOURNAL since the cost of fuel is invariably the greatest item of expense in the steam power plant, every effort should be made to save fuel—to cut down costs at the source. The efficient burning of coal is a matter of utmost importance.

We can all remember when fuel was considerably cheaper than it is now. Purchasers of coal then endeavored to obtain shipments of the "highest heat value" even though the first cost might be a little greater. High grade coal burns cleaner, gives higher temperatures, higher efficiency, gives less trouble, costs less for freight because it weighs less per thousand units of heat, and it leaves a smaller volume of ash to be handled. Because of these important items it still pays to keep an eye on heat value, but prices have gone up so seriously that the present day trend is to buy cheap coal even though it may be dirty—coal that in large

power plants requires the use of mechanical stokers for proper firing, proportioning of air, breaking up of the fuel bed, etc. Coal prices, we are informed, will never return to the pre-war level.

Before the war it was not uncommon to read of debates before technical societies and in our engineering schools on the subject, "Which is the More Economical—Hand Firing or Mechanical Stoking?" Today there is very little question about it. Even with high quality coal the stoker is now preferable over hand firing and with low grade, cheap coal, mechanical stokers are almost a necessity. Most types of stokers have already passed through the experimental stage, hence it is known beforehand just what a given stoker will do under a boiler. The saving of coal over hand firing can be closely predicted. Hand firing is gradually giving way to stoker firing in all fields where steam power is used.

The advantages of the use of automatic stokers in place of the hand fired method are briefly as follows:

- (1) Labor is almost invariably saved in plants larger than 500 boiler horsepower. The larger the plant the greater the labor saving.
- (2) The stoker removes the uncertainty of the human element. It is independent of the physical ability or the mental attitude of the fireman or his assistants.
- (3) Fuel is saved. This saving varies with the kind of fuel

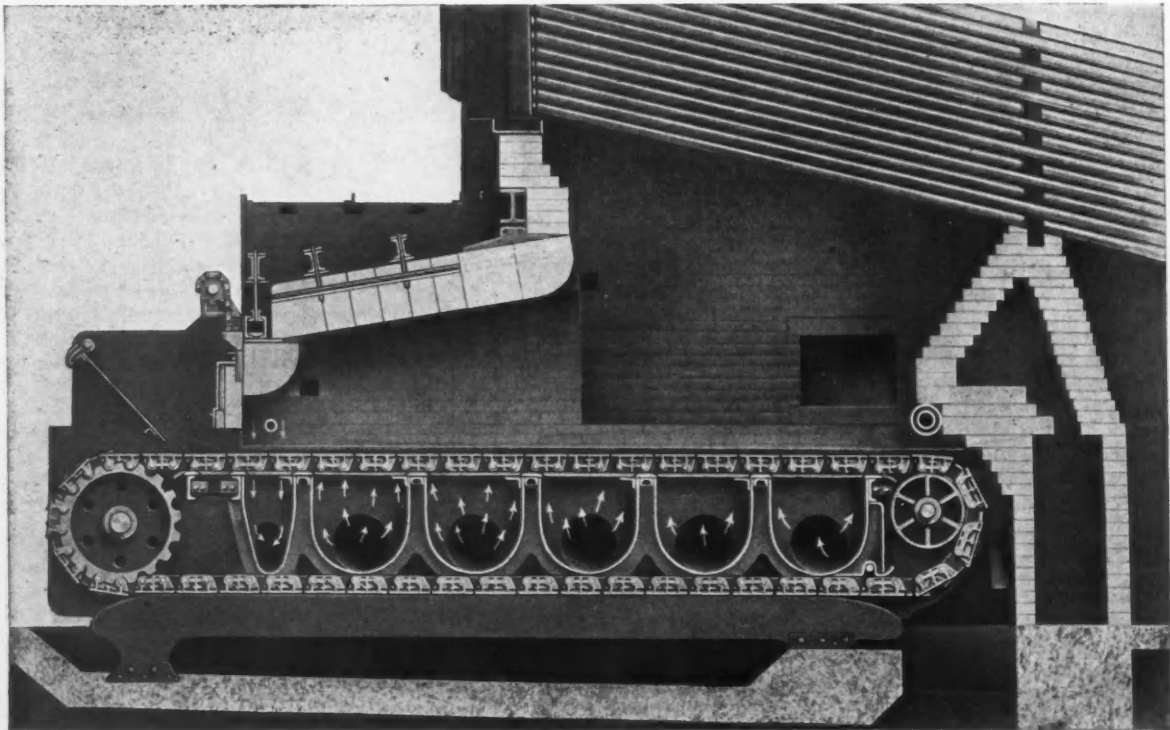


FIG. 1

Cross-sectional view of chain grate stoker beneath a horizontal water tube boiler. (Courtesy the Illinois Stoker Co., Alton, Ill.)



OF WHAT USE

is an adjustable Fourdrinier if it will not adjust under all conditions

THE BELOIT

does it by power while the machine is running and carries the head box with it.

This eliminates much useless "gingerbread" found on the usual so called adjustable type.

■ ■ ■

BELOIT IRON WORKS

BELOIT, WIS.



burned and the size of plant. The larger the plant the greater the saving.

(4) Cheaper coal can be burned on the automatic stoker. This results in considerable money saving during the life of the stoker.

This saving must, of course, be much more than the initial cost of the stoker to make the investment worth while.

(5) It is more difficult to obtain smokeless combustion with hand fired furnaces than with stoker fired furnaces

(6) Boiler capacity and boiler efficiency are both increased.

Many engineers of today, as well as officials of paper mill power plants are still under the impression that plants of a capacity of 500 boiler horsepower or less cannot show sufficient returns on the investment to warrant the installation of stokers. This, however, is not necessarily true. A number of automatic stokers are in operation today having a capacity of less than 500 boiler horsepower and they are operating profitably. In some instances the boiler plant consists of a single boiler and a single stoker. In plants of this small size, where an operator is needed anyway, the small amount of attention required by the automatic stoker permits the operator to profitably devote most of his time to other more essential duties.

In a hand fired plant one fireman can handle not more than 500 normal boiler horsepower properly, while with automatic stokers one fireman can efficiently handle from 500 to 7,000 boiler horsepower and even more.

Regarding the comparative efficiency of hand firing versus stoker firing, where exceedingly great care is taken in firing by hand, as is usually the case under test conditions, it has been demonstrated that hand firing is just as efficient as stoker firing, or so nearly so that the difference is scarcely distinguishable. For example, six tests were made on hand fired boilers and the following combined efficiencies were obtained: 71.8 per cent., 72 per cent., 71.3 per cent., 75.6 per cent., 68.9 per cent., 72.67 per cent.

Seven tests were made on stoker fired furnaces with the fol-

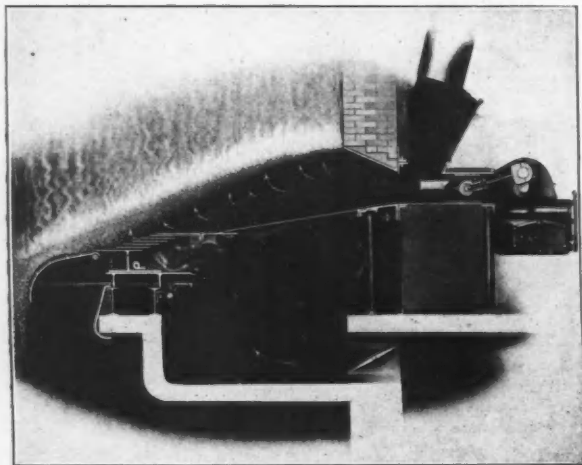


FIG. 2

Sectional view of self-dumping underfeed stoker. (Courtesy Sanford Riley Stoker Co., Worcester, Mass.)

lowing combined efficiencies: 72.0 per cent., 74.9 per cent., 74.9 per cent., 70.9 per cent., 76.1 per cent., 73.8 per cent., 73.5 per cent.

In these tests the stoker fired furnaces show an average of 73.7 per cent., while the hand fired furnaces show an average of 72 per cent., a difference of only 1.7 per cent. in favor of the automatic stoker method.

However, over long periods of time the stoker invariably shows a higher efficiency than the hand fired method. It is claimed by

one stoker manufacturer that his stokers will effect a saving of from 20 to 35 per cent of the coal required for the same boiler capacity when hand fired. These figures, of course, are not based on test conditions, but are based on normal daily operation.

Under boilers of large capacity stoker firing invariably shows a worth while saving as compared with hand firing. It is physically impossible for human beings to fire the furnaces under large modern boilers at all, let alone doing it efficiently. A grate depth of 6 to 6½ ft. is the limit for the average fireman. However, it has been demonstrated that even where capacities are low the

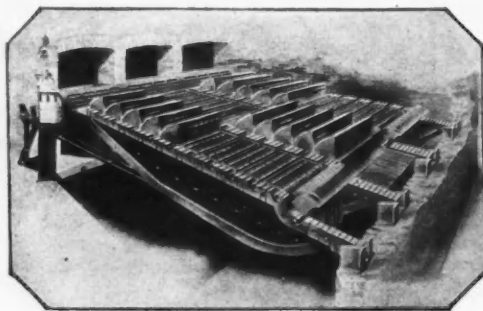


FIG. 3

Perspective view of hand stoker showing dump plates in the foreground. (Courtesy The Files Engineering Co., Providence, R. I.)

stoker often excels over hand firing. The following test data resulted from a test where every day conditions prevailed. No special preparations were made for the test. The hand fired boiler was operated at 93.8 per cent. of rating and the stoker fired boiler at 107 per cent. of rating.

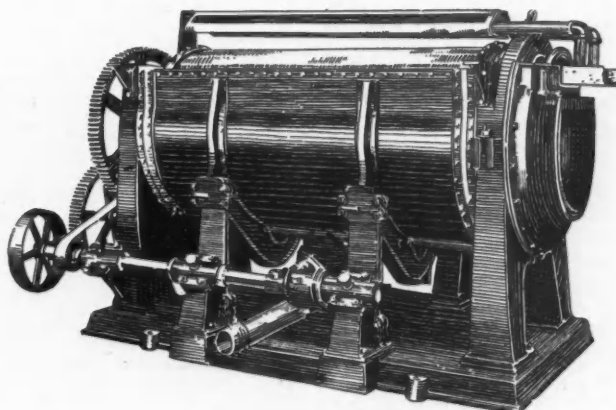
	Hand Fired Boiler	Stoker Fired Boiler
Water evaporated per pound of coal.....	9.53	11.2
Equivalent evaporation per pound of coal..	10.60	12.2
Temperature of uptake gases.....	473	401
Rated boiler horse power.....	277	287

The Stoker (which was an underfeed type) saved 15 per cent of the fuel, or more than a ton to every seven tons hand fired. It is therefore plain that regardless of the smallness of the plant the automatic stoker must not be entirely ignored. In small paper mill plants stokers are not always advisable, but if the fuel saving item will be large, or where it is necessary that there be no smoke, stoker installations are advantageous.

A prominent consulting engineer in Boston wrote a report in *Power* on a large power plant that was converted from hand firing to stoker firing. He said, "The equipment installed has thus far shown a saving in cost of labor of 40 per cent. and a saving in coal per week from 12 to 14 per cent."

With stokers cheaper fuels may be burned giving higher efficiencies than may be obtained with hand fired furnaces using higher quality fuel. Hand firing is always intermittent, whereas with a stoker the firing is continuous and even—one reason for the higher efficiencies. Also, with hand firing the doors are continually opened and closed, giving a variable air supply which of course tends toward inefficiency. On the other hand, with stoker firing the air supply is constant and can be almost perfectly regulated. In fact, not only can boiler efficiencies be increased with stoker firing, but boiler capacities can be increased, giving as high efficiencies at overload as is possible at normal load with the best possible hand firing.

Like other mechanical devices the stoker, of course, has its disadvantages as well as advantages. Among the disadvantages we have these:



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88-222

(1) Greater upkeep cost. The upkeep cost is usually higher than for hand fired furnaces because of the moving parts and the greater complexity.

(2) Greater first cost.

(3) With stokers it is almost impossible to prevent loss of unburned fuel into the ash pit. This loss may be greater with one grade of coal than with another, because no stoker has yet been made that will take care of all grades of coal satisfactorily.

(4) Stokers are not "absolutely automatic." The writer knows of no so-called "automatic device" that is really automatic. Human attention is always needed at some time or other. The mechanical stoker requires human attention, consequently in small plants, a stoker may be installed at an actual loss.

(5) Generally, stokers should not be installed unless it is also decided to handle ashes and coal automatically.

(6) Trouble is sometimes experienced in the coal hoppers of automatic stokers by packing and arching of the coal in such a way that it ceases to flow and the coal is fed irregularly or is cut off altogether. To correct this it has been necessary to employ manual labor to see that all stokers are properly operating. It has recently been found, though, that by installing power operated agitators near the base of the hoppers this trouble is very much reduced.

Types of Stokers

In general there are three types of mechanical stokers:—

- (1) Overfeed stokers.
- (2) Traveling-grate stokers.
- (3) Underfeed stokers.

Overfeed Stokers

In the overfeed stoker the coal is fed, as the name suggests, over the top of the grates. The grates are given a slight reciprocating motion which motion causes the coal to travel with the aid of gravity in a downward inclined direction to the dumping grates. A fire-brick arch assists in coking the coal at the top of the furnace. These stokers are varied in design by feeding coal from the front of the setting or from the side walls. The final result, however, is usually the same.

This type of stoker is used less than the other two types. It has fewer advantages, does not so readily permit the use of forced draft, is more liable to smoke, burns with a longer flame than the underfeed, gives off less radiant heat, clinkers form and may give trouble, and dumping must be carefully watched.

Very often, though, the overfeed type is chosen because it operates on natural draft. One of the most popular designs is

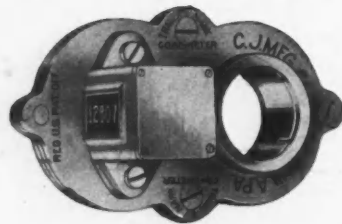


FIG. 4

Coal meter. A device that is sometimes used to advantage in connection with underfeed stokers. (Courtesy C. J. Mfg. Co., Philadelphia, Pa.)

the so-called "opposed type" which feeds coal from opposite sides simultaneously. At each side of the furnace extending from front to rear are coal magazines into which the coal is introduced. As the coal leaves the magazines it rests for a short time upon coking plates where the volatile gases are driven off. Then the coal moves down the movable grates to the rotating clinker grinder at the center of the grate, this grinder being located in the lowest point of the "valley" to which the coal moves simultaneously from

both sides. Exhaust steam is usually admitted to the lower end of the furnace to soften the clinker, to assist in the cleaning, and to lengthen the life of the furnace parts. It is claimed by the manufacturers of this stoker that it "burns any fuel that has heat in it" and that "not one penny is spent for draft."

Traveling Grate Stokers

This grate continuously travels in one direction from the front to the rear. It really is nothing more or less than a metallic belt moving around sprockets, the sprockets being located at the ends—front and rear. As this grate moves along coal is fed onto it from a hopper from the front. The rate of feeding therefore is constant. Ignition takes place at the ideal point, close to the

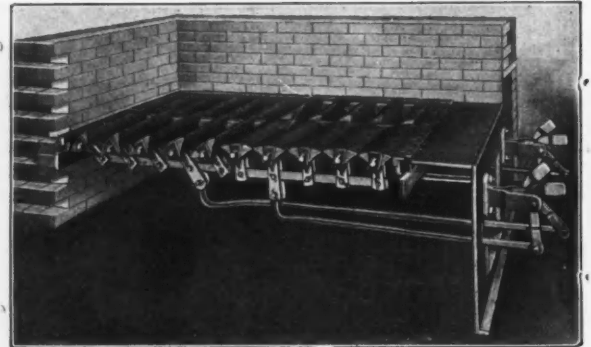


FIG. 5

Perspective of typical shaking and dumping grate. Designed for making firing easy. (Courtesy Neemes Bros., Inc., Troy, N. Y.)

front. A very large percentage—almost 100 per cent—of the surface of the fuel bed is incandescent. By the time the glowing coals reach the rear end of the furnace, provided the rate of movement of the stoker is properly regulated, combustion is completed and the clinkers and ash drop into the ash pit always provided at the rear end. Automatic dumping grates are sometimes placed at the rear end of traveling grate stokers to make certain that there will be no air inleakage at this point.

The principal advantages of the traveling grate stoker are:

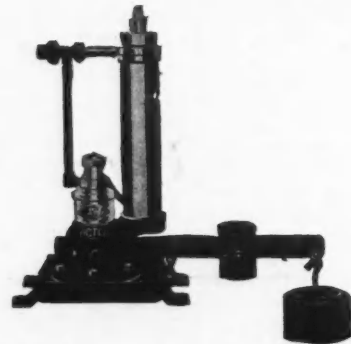


FIG. 6

Hydraulically operated damper, fan engine, and stoker regulator. (Courtesy Atlas Valve Co., Newark, N. J.)

- (1) Automatically and continually feeds itself.
- (2) Can be easily removed from the furnace during shut down periods for repairing or for inspection.
- (3) Parts are interchangeable and are easily, quickly and inexpensively replaceable.
- (4) The upkeep cost is comparatively low.
- (5) A very good stoker for burning coal of low grade, especially coal that carries a high percentage of volatile substance.

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

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

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

The Safety Zones

Vortex Drinking Cups are the safety zones of double protection.

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

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

THE VORTEX MFG. COMPANY

421-431 North Western Avenue, Chicago

(6) Adaptable for use in connection with forced draft. Although the underfeed stoker has heretofore been and perhaps still is preferable for use with forced draft, successful applications of forced draft are now being made to the traveling grate types of stokers.

The Underfeed Stoker

This type of stoker has recently made rapid headway. As its name suggests, the coal is fed from beneath the grates, the coal being forced into position by reciprocating plungers, or by means of a screw. As in the overfeed stoker the grates are given a slight reciprocating motion to provide air passageways and also to move the coal along down the sloping grate to the dead plates or to the ash hopper where the ashes are deposited. Underfeed stokers, like overfeed and traveling stokers, are made in various designs.

Let us consider the principal advantages of the underfeed stoker: The coal being fed from beneath is heated and coked before it reaches the incandescent fuel, consequently the volatile gases are driven off and pass through the incandescent bed where they are consumed, thus getting rid of the smoke. It is an excellent stoker for smokeless combustion.

Since green coal is not thrown on top of the incandescent fuel bed, there are usually hot glowing incandescent coals on top continually giving up radiant heat energy to the boiler. One hundred per cent of this area gives up radiant energy, if the coal is "clink-

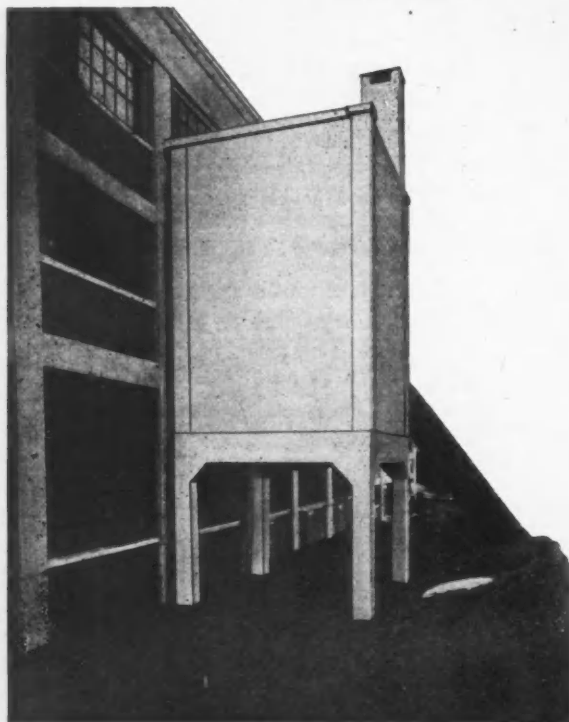


FIG. 8

Ash storage reservoirs should be made of a non-combustible material. Showing a concrete reservoir. (Courtesy American Steam Conveyor Corp., Chicago, Ill.)

erless coal." As pointed out in a previous issue of PAPER TRADE JOURNAL, in connection with the "Selection of Steam Boilers," radiant heat is a very important factor.

Heavier fires can be carried on the underfeed type than on other stokers.

Higher temperatures are usually developed in furnaces where

underfeed stokers are used. The higher the temperature, the greater the amount of heat radiated into the boiler.

One serious objection to high temperatures, however, is that clinkers will form more readily, or, the brickwork may be harmed by the high temperature unless the draft is properly regulated. Brickwork softens and becomes plastic under excessive furnace temperatures.

On account of the thickness of coal carried on underfeed stokers, forced draft is almost a necessity and is generally used. A slight suction draft is also recommended. In spite of the thickness of

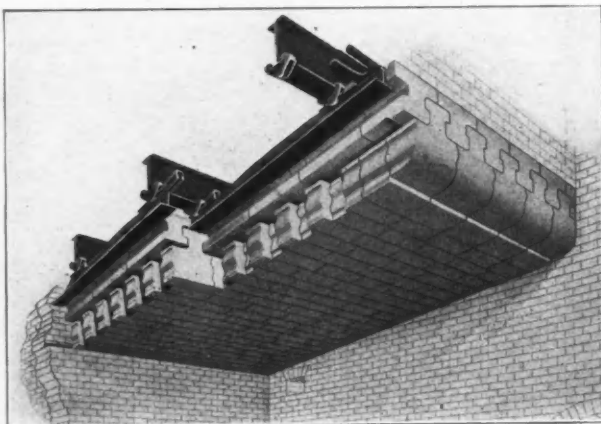


FIG. 7

Double suspension arch with interlocking tiling. (Courtesy Liptak Fire-Brick Arch Co., Minneapolis, Minn.)

the fuel bed, however, difficulty is seldom experienced in supplying air to the furnace because of the fact that the fuel bed is continually broken up and continually agitated in the proper direction by means of the screw or plunger feed, whichever is used.

The writer has first hand knowledge from a large power company that has tried most of the makes and types of stokers on the market in its large plants. The result of their research has caused them to adopt the underfeed stoker practically as their standard.

One of the illustrations herewith shows a typical multiple retort, inclined, underfeed stoker. The fuel is forced up from beneath the point where the air is admitted and is then burned on a series of inclined retorts. Distillation of the volatile gases takes place in the retorts, after which these gases, mixed with air, pass up through an active bed of burning coke and then through the incandescent fire zone. Instead of stationary tuyeres this stoker has moving air supplying grate blocks, carried by the reciprocating sides of the retorts. These retort sides also move the overfeed grates which extend across the entire width of the stoker below the retorts. Beyond these are the rocker dump plates which continually agitate, crush, and discharge the ash. The travel of these reciprocating parts is adjustable so as to control the movement of the fuel bed and the dumping of refuse. This underfeed stoker contains both live grate surfaces and continuous automatic ash discharge.


The constant movement of the grates, as stated before, keeps the fuel bed in a porous state and gives a uniform air distribution. The air is not choked in its flow but is allowed to mingle with and thoroughly burn the combustible gases before they can escape. A short white flame of intense heat is produced, the kind most to be desired for efficient combustion and radiation.

The incline of the retorts and grates is less than the "sliding angle of the coal"—small enough so that the fuel bed does not move except as it is mechanically propelled. There is no sliding

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VOL. I ALBANY FELT COMPANY No. 1
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"WE HAVE TO KNOW SOMETHING ABOUT SHEEP"
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ALFELCO FACTS is a pocket size technical periodical dealing particularly with the handling and care of paper machine "clothing." It aims to give helpful suggestions and to furnish a medium for the exchange of ideas on efficiency and economy in the use of felts and jackets. It will be sent free to paper makers, paper mill executives or students of paper making. If you have not yet received No. 1, fill in the coupon and we will put your name on our mailing list.

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due alone to gravity. Raking, leveling and barring are not required to keep the fuel bed even and uniformly thick.

The construction of this stoker is such as to give a combined horizontal and vertical motion to the fuel bed which agitates, crushes, and rejects the ash. There is no periodic or laborious dumping of hot refuse bringing with it great masses of burning fuel and suffocating gases. This factor assists largely in maintaining smokelessness of combustion.

This is a desirable type of stoker, also, because of convenience of installation. It can be installed under many limiting space conditions. There is but little mechanism to consume space and no mechanism whatever beneath the cylinders, thus permitting the stoker to be set close to the floor. This gives maximum combustion space under a low set boiler.

When selecting a stoker it is well to choose a type that can be operated either with natural or mechanical draft. The underfeed stoker can be operated either way. The porous condition of the fuel bed, due to the moving grates, often permits a boiler to be operated above rating on natural draft.

An important feature possessed by the underfeed stoker is that at overloads, when the fuel bed is hottest, and when other stokers give most trouble due to clinkering, draft being choked off, the underfeed stoker is at its best. With the underfeed stoker the rate of fuel firing is at its maximum, consequently the fuel bed agitation is greatest, and the result is—the draft loss through the fuel bed is least.

To bank an underfed fire it is only necessary to shut off all air and then run in enough coal to make a fuel bed as thick as circumstances require. It may be banked equally well for half an hour, a month, or a year. The consumption of fuel is very small—just enough to care for radiation losses.

The underfeed stoker is therefore especially suitable for so-called "stand-by" work. It can carry a heavily banked fire for months and then almost instantly respond to carry a heavy overload. It has been demonstrated that stokers of this type will raise the boilers from a banked fire to 350 per cent of rating within seven minutes.

The underfeed stoker will handle poor coal as well as high grade. It is reported by one manufacturer that his stoker has successfully handled anthracite screenings, coke breeze, mid-west-

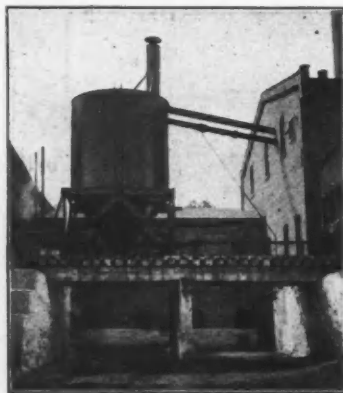


FIG. 9

Ash storage reservoirs may be placed at any convenient distance from the building to facilitate hauling away by truck, train, or barge.

ern coal, coking coal, wood refuse and lignite. The important problem with poor coal is to keep clinkers broken up and rid the furnace of refuse as rapidly as it forms.

Also, now that automatic control is coming more and more into use it may be well to bear in mind that with the underfeed stoker the air and fuel supply may be controlled automatically.

At high rates of combustion clinkers will form rapidly in an undisturbed fire. High grade coals do not clinker so readily as low grade, but, due to the intense heat of the furnace clinkering is very common. These clinkers are liable to give much trouble unless they are continually broken up. The formation of a large clinker means the sealing up of that portion of the fire from air passage, consequently cutting down the coal burning capacity. This is especially noticeable with coals having a high percentage of ash.

A stoker should be selected that has a constant shearing ac-



FIG. 10

Steam conveyor target box and extension. For preventing the packing of the ash at the end of its travel. (Courtesy the Frederick Engineering Co., Frederick, Maryland.)

tion with moving grates and ash plates so as to keep the fuel bed open and porous, maintaining an unrestricted flow of gases.

The operating mechanism should at all times be visible and accessible to the operator upon removal of a front plate.

The Hand Stoker

The so-called "hand stoker," which is hand fired and hand manipulated, is an improvement over the old grate and inefficient method of hand firing. One of these stokers is shown in a cut herewith. This stoker enables the fireman to put into easy operation the coking method of firing that has proven itself so valuable with mechanical stokers. These stokers are so constructed that they can be installed under any type of boiler without the necessity of any change whatever in the setting or construction of the boiler. It is merely necessary to drill a few holes in the boiler front and depress the ash pit.

The green coal is placed upon the first few stoker bars only; where it is allowed to coke. The volatile matter distills off and passes over a bed of incandescent coke on the balance of the stoker thus reducing the amount of smoke to a minimum. The fuel bed is advanced by the movement of the stoker bars, which are easily operated by levers at the side of the fire door. By the movement of the stoker bars the full bed is broken up, the fine ash drops through, and clinkers are sheared off at the side walls and forwarded to the rear drop at the bridge wall. It is unnecessary to use the slice bar.

It is claimed that in the hands of an inexperienced fireman a hand stoker can produce results equal to, and in many cases greater than obtained from the much higher priced mechanical stokers. For the small paper mill power plant the hand stoker is particularly desirable. It should never be installed under boilers of greater capacity than 550 boiler horsepower without careful consultation with the manufacturers. Most of the installations of today are under boilers of less than 500 boiler horsepower.

The hand stoker had opened up another source of fuel supply for the paper mill plant, namely; sawmills, woodworking plants, furniture factories, etc. Industrial establishments of this kind usually have much refuse to dispose of, sometimes at considerable



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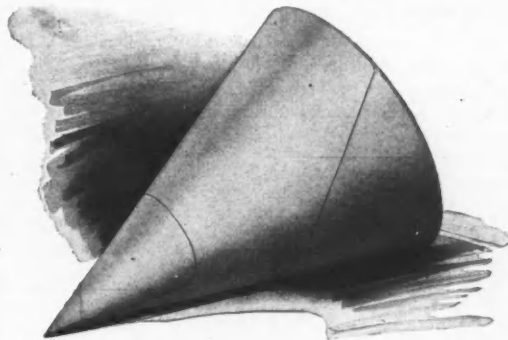


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expense to the owners of the plants. Now that hand stokers are coming into prominent use, however, and are so much of an improvement over old type grates, permitting combustion of wood, sawdust, shavings, mixtures of the three, and mixtures of the three with low grade or high grade coal, there is little excuse these days for permitting the burning of refuse out in the open. On hand stokers adapted to this kind of fuel, refuse from mills makes an excellent cheap fuel.

The writer has before him a letter from a company owning a 400 kw. plant in which it is stated that refuse is purchased from neighboring plants—shavings, sawdust, bark, etc.—and this refuse is mixed with a little coal. The mixture is placed on grates fired by hand stokers and successfully burned. It is said that the operating costs have been cut in two since installation of this more modern type of apparatus. It is also stated that combustion is smokeless.

There are many paper mill power plants scattered over the country that should take advantage of this cheaper method of generating power. The refuse can be hogged up and conveyed long distances with air conveyers at low cost.

Stokers for handling refuse of this kind are successfully placed under steam boilers of all makes and types—water tube and fire tube.

Selecting Damper and Stoker Regulators

Stokers, of course, must be controlled automatically as well as operated automatically. The control is usually effected by means of a so-called "damper regulator." When forced draft is used these regulators control the speed of the fan engine from the steam pressure and also the speed of the stokers. Where natural draft is used the regulator controls the position of the main or uptake dampers. Where conditions require it the regulator may be used to control the speed of the three-fan engines, the stokers and the position of the main or uptake dampers. They are also useful and desirable on non-stoker fired boilers.

Where gas or oil is used for fuel in the paper mill plant the rate of combustion can readily be controlled, for in this case the



FIG. 11

Showing a 90 degree Steam Unit Steam Nozzle and Nozzle Holder for a steam conveying system. Equipped with wear liners inside. Bolts permit opening for inspection and replacing wear liners whenever needed. (Courtesy Frederick Engineering Co., Frederick, Md.)

control is accomplished by feeding the fuel to the oxygen, but with a coal fired boiler the problem is much more complicated for in this case, we are feeding the oxygen to the fuel, by means of the air drawn into the fire box by the draft created by the chimney. The waste of fuel is usually considerable where too little or too much air is supplied. If too great an amount of air is supplied,

the hot gases will be mixed with the excess cold air, which must be raised to the furnace temperature and the heat that otherwise would be used to make steam is wasted in heating the air and escapes up the chimney. If the air supplied is not sufficient, combustion will be incomplete and the gases thrown off by the coal will be carried away unburned.

It is important that the capacity of the chimney be great enough to draw sufficient air through the fire for the maximum rate of combustion, which approximates 20 pounds of air for every pound of coal burned, and it is just as important that an efficient automatic regulator be employed to control or adjust the drafts, so that as the steam requirements demand a greater or lesser amount

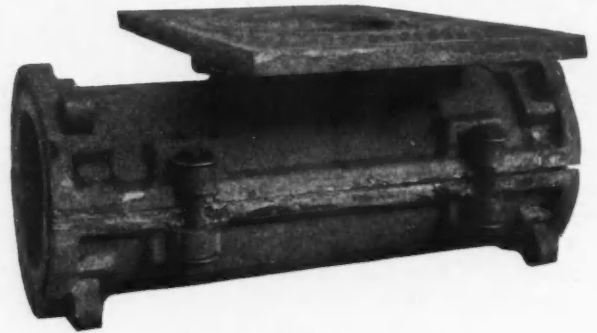


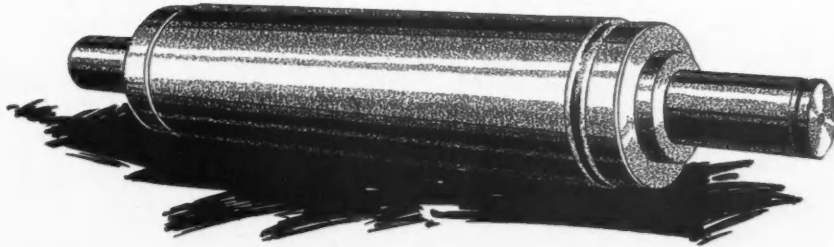
FIG. 12

Split Intake Tee. The lower wear section is removable for replacing whenever the pipe of the suction line is turned to increase the life of the conveyer. (Courtesy the Frederick Engineering Co., Frederick, Md.)

of fuel to be burned, the regulator will respond instantly and adjust the drafts to supply just enough air to maintain the required rate of combustion.

For small low pressure steam boilers, where the draft door are small, and easily opened or closed, and where the amount of air required for the fire is small, the simplest and perhaps the best method devised to date for the control of the drafts is the common metal or rubber diaphragm regulator which is often a part of the standard equipment furnished by the boiler manufacturer. But for larger boilers where the work to be performed is considerable, the diaphragm type of regulator is inefficient as its power is not great enough to properly handle the larger draft doors on slight changes in pressure.

While it is true that regulation can be had on the larger boilers by the use of the diaphragm type of regulator, this regulation is erratic and is not economical as regards the fuel consumed on account of lagging or sluggish action. For instance, assuming that the boilers are developing a pressure of only 2 lb. per sq. inch and that the diaphragm regulator is holding the drafts open. As the pressure approaches 2 pounds there is no response in the action of the regulator due to the fact that any pressure less than two pounds on the diaphragm does not have sufficient power to overcome the friction of the draft doors and raise the adjusting weight, consequently the maximum amount of air is being fed to the fire and the rate of combustion is high. After the pressure reaches two pounds, the diaphragm has sufficient power to raise the adjusting weight and shut the drafts. The fire then is burning at such a high rate that with the drafts closed, there is not sufficient air being supplied for proper combustion and the good gases (carbon monoxide) thrown off by the coal escape unburned up the chimney until the temperature of the fire is lowered which causes the steam pressure to drop. As the pressure drops below two pounds the weight of the adjusting weight is not sufficient to open the drafts until the pressure under the diaphragm is one pound or less. Then the weight lowers and opens the drafts which supplies the maximum amount of air to the fire immediately. The



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rate of combustion by this time has been checked to such an extent that more air is fed to the fire than it can consume, consequently this excess air must be raised to the furnace temperature and carries away with it a great amount of heat which would otherwise go to make steam. This operation is repeated a great many times during the day on each change in the boiler pressure. It is an easy matter to show that excess air often causes a loss of not less than 10 per cent. of all fuel burned.

The hydraulically operated type of damper regulator is operated by water pressure acting upon a piston which is connected to the drafts or dampers by a chain. The water supply to the regulator is controlled by a diaphragm with a weighted lever, which raises and lowers with the variations in the boiler pressure, thereby operating the pilot valve which applies the water pressure to the piston.

This type of regulator has ample power to move the heaviest draft doors or dampers, which permits the control piston to respond to the slightest variation in the boiler pressure. On account of this sensitive operation a uniform steam pressure is maintained because the dampers are adjusted instantly on the slightest change in steam pressure. This sensitive operation results in a steady uniform rate of combustion as the air supplied is just sufficient to keep the fire burning at the proper rate and it is neither stuffed nor starved. The amount of air supply, in other

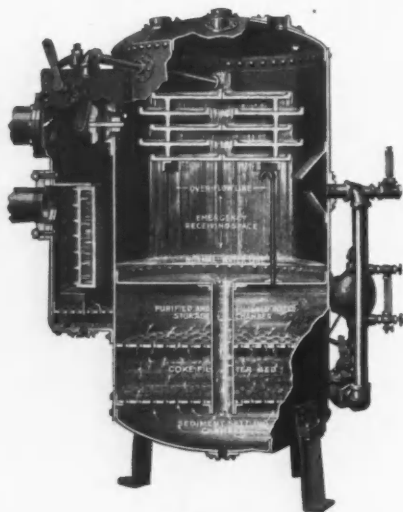


FIG. 13

Circular Steel Feed Water Heater, Purifier, Filter, and Receiver, made of sheet steel. Omitted from the former article of this series on "Feed Water Heaters." (Courtesy Milwaukee Reliance Boiler Works, Milwaukee, Wis.)

words, is in exact proportion to the steam requirements, which is as it should be.

The hydraulic type of damper regulator has many advantages. Although its first cost is greater than the first cost of the diaphragm type, its first cost is low when compared with the amount of fuel it will save. It is easy to install and will operate for years without any attention. The amount of water it uses is very small, so small in fact, that the discharge can be piped to the ash pit, and will keep the ashes damp which is an advantage rather than a disadvantage.

Similar hydraulically operated damper regulators are also on the market for high pressure steam service—for pressures up to 250 lb. per sq. in.

Damper regulators, of course, vary in type and cost. In making selections it is always advisable, where possible, to select one that is simple to install and guaranteed to respond to pressure changes not exceeding one quarter of a pound, and to operate at the

pressure desired from atmospheric pressure to 250 lb. per sq. inch. Finally, if a regulator can be obtained that will give the right kind of service and still be low in first cost, all the better.

Selecting Fire Brick Arches

In order that the combustion of coal may be complete, a certain furnace volume is necessary. In general, the more volatile the coal the greater must be the volume. The intermingling air must be sufficiently heated so that it will ignite the volatile gases and unite with them. To do this properly requires ample space and ample time for complete combustion. Unless the temperature is high enough and the volume and time elements great enough, the gases will strike the comparatively cold boiler heating surfaces, will thereby cool off, and the valuable gases will pass up the chimney without burning.

To insure complete combustion, to add to furnace volume, to increase furnace temperatures, and to increase the time element, fire brick arches are now commonly used with good results. These arches are particularly valuable in connection with bituminous and low grade volatile coals in general. With a good fire brick arch it is possible to develop higher temperatures, thus greatly increasing the efficiency of combustion, which condition would be otherwise difficult to obtain without an arch.

The selection of a fire brick arch for use in the paper mill plant is worthy of serious thought because of the fact that unless the layers of fire brick are thick enough, or unless there are a sufficient number of layers of brick, it will be found necessary to replace the arch very frequently. Usually, as is the case with so many engineering power plant specialties, the best is usually the cheapest in the long run, no matter what the first cost may be. The best quality high refractory material obtainable should be specified. Then if the purchaser will consider the arch cost over a period of months or years, taking into consideration the entire elimination of unexpected shutdowns for arch repairs, the more costly double or triple suspension arch will be found well worth while.

The longer the life of the arch, the less the quantity of materials necessary to keep on hand for repairs. Boilers, engines, etc., should seldom be bought on a price basis, but rather on an efficiency basis, and the same rule should apply in the purchase of boiler arches. Many dollars will then be saved each year, not only in upkeep, but in continuous increased production.

Before deciding on an arch, the writer recommends that the following points or specifications be carefully considered:

- (1) Select an arch that is as air tight and as heat tight as possible. Such an arch will give best combustion results.
- (2) Preferably select a double or triple suspension arch. This insures against burned out ironwork necessarily used in all arches for supporting the fire brick.
- (3) Blocks should be interlocking and they should fit well enough so that fire clay joints will be unnecessary.
- (4) Dead air spaces within the arch are advantageous for saving fuel and for keeping the boiler room cool.
- (5) The arch should be easy to repair.
- (6) It should be easy to install. Labor costs for installation and repairs sometimes exceed the first cost, which is poor practice.
- (7) Highest grade refractory materials obtainable should be used in order to withstand the high temperatures and to protect the iron work against excessive heat.

The writer wishes again to emphasize the value of an arch sufficiently thick—at least of double thickness. By using, say, a double suspension arch, one obtains what is known as a "reserve" arch, or rightfully speaking, an "emergency" arch, which permits the using up of 100 per cent of the main arch next to the fire and a considerable portion of the "reserve" arch until it is convenient for the fireman or engineer to shut down for repairs.

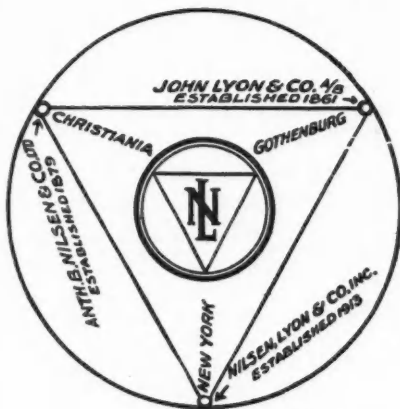
The "reserve" arch also acts as an insulator to the framework, securely protection it from the intense heat and thereby allowing

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it to last indefinitely. Crystallization or sagging of the ironwork will not occur under proper condition as related above.

Hand vs. Mechanical Ash Handling

After coal is reduced to ashes the volume is usually very much lessened. The reduction in volume varies all the way from about 90 per cent for anthracite coal to 60 per cent for lignite and bituminous coals. Consequently the question of hand versus mechanical ash handling is not so important for ashes from high grade coal as is the question of hand versus mechanical stoking. With low grade coal, though, the question of ash handling is more serious. In the larger paper mill power plants regardless of the quality of coal burned, provision is frequently made for continuous mechanical ash handling—as rapidly as the ashes are rejected by the stoker. This is a desirable method, to be sure, where plants are large enough to warrant them. In most plants, however, an ash pit cleaned periodically is sufficient. The ash pit should be large enough to take care of twenty-four hours operation and it should be cleaned out twice a day—once a day in emergencies.

Ash pits should be so arranged that they can be easily cleaned. If this cleaning is shirked the grates are liable to burn as soon as the pit becomes filled with ashes.

To reduce the cost of removing and handling ashes it is good practice to make arrangements for dumping them into a mechanically operated conveyor of some kind—belt, steam, pneumatic, etc. There are bucket carriers on the market, for example, that are made for conveying both coal and ashes. They are made entirely of metal, are economical and dependable.

It is not sufficient, however, to be satisfied with merely "getting the ashes away from the boiler." Every time ashes are handled it costs money to handle them until they reach their final resting place. The lower the total cost from the furnace to the final dump the better. Every step should be carefully planned. Too little attention, usually, is given to the handling of ashes.

The suction method of conveying ashes from the furnace is a tried and successful method. Openings are conveniently placed in front of the ash pit doors into which the fireman or attendant simply hoes the ashes. The ashes are then carried away through pipes by high velocity air currents into an elevated ash storage tank. The air currents are created either by means of steam jets or by means of a blower. When the storage tank is filled, or nearly full, the ashes are removed by gravity into a railroad or other car, hauled away, and dumped. This method of handling is clean, dustless, convenient and economical. To add to the cleanliness the ashes are usually "quenched" with water just before entering the storage tank, thus settling the dust.

Where steam jets are used for creating the suction in the suction type of conveyor we have an almost ideal arrangement in that the ash handling system has no moving parts whatever. Without moving parts the possibility of wear, breakage and trouble are reduced to the minimum.

In one installation a manufacturer reports a steam ash conveyor system which handles 120 tons of ashes per month. It is claimed that \$90.00 per week is saved by dispensing with one extra man per shift. The installation, it is claimed, paid for itself in the first seven months of operation.

When choosing an ash handling system, here are some practical points to look out for:

- (1) Ashes do not "flow" easily. Be sure that the openings in the bottom of dump cars and tanks are large enough so that there will be no clogging or arching. Or, see that some mechanical device is provided for agitating the ashes to make them move.
- (2) In the winter time, beware of freezing. Frozen ashes in overhead storage tanks, in conveyor buckets, railroad cars, etc., may give very expensive trouble.
- (3) Do not depend entirely on one method of disposal. Some-

times railroads do not operate, truck drivers go on strike, or boats do not move.

(4) When ashes are conveyed in pipes be sure that all elbows, or "wearing backs," where the ashes make a sudden change in direction, are easily replaceable. Special provision must be made for this enormous wear caused by the gritty ash.

I. S. Reynolds Tendered Dinner

The combined sales organization of the Groveton Paper Company, Inc., and the Claremont Paper Company, Inc., held a dinner at the Hotel Biltmore, New York, on the evening of June 2, given by the general management of both companies in honor of I. S. Reynolds, the retiring manager of sales.

Earlier in the day announcement had been made that I. S. Reynolds, manager of sales for both companies, had severed his connection as head of the sales organization to go into business for himself, and that he had been succeeded by his former assistant, G. M. Wetmore.

After dinner had been served short speeches were made by many of those present expressing their regret that Mr. Reynolds would no longer be connected with the sales organization and extending to him all good wishes for his success in his new venture.

The speakers also pledged their whole-hearted support to their new manager and voiced their belief that he would ably and successfully carry on the policies of the organization established by Mr. Reynolds.

Toward the close of the evening Mr. Reynolds was presented with a hand-carved mahogany humidor, a gift from all members of the sales organization as an expression of their friendship and esteem.

Those present were: I. S. Reynolds, manager of sales, Groveton Paper Company, Inc., and Claremont Paper Company, Inc.; J. A. Bothwell, general manager, Brompton Pulp and Paper Company, Ltd.; V. E. Fishburn, mill manager, Groveton Paper Company, Inc.; W. C. Dawson, treasurer and manager, Claremont Paper Company, Inc.; T. K. Davis, manager Boston office, Groveton Paper Company, Inc., and Claremont Paper Company, Inc.; C. L. Winter, western representative, Groveton Paper Company, Inc., and Claremont Paper Company, Inc., and G. M. Wetmore, J. R. Williams, J. J. Flanagan, C. I. Hill, K. H. Ways, R. F. Rowland, H. J. Reilly and C. Georg, all of the New York sales office of the Groveton and Claremont companies.

To Open Bids for Six Months' Paper Supply

[FROM OUR REGULAR CORRESPONDENT]

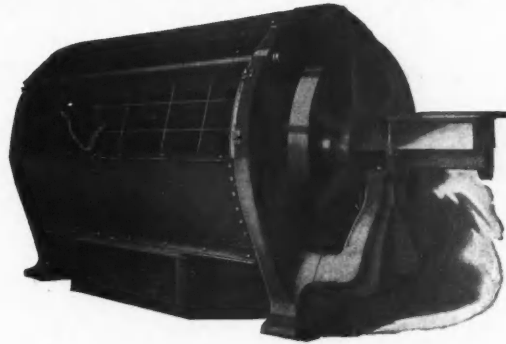
WASHINGTON, D. C., June 14, 1922.—The Joint Congressional Committee on Printing passed a resolution on Thursday calling upon the Specifications Committee to submit a report on the paper requirements of the Government Printing Office for the six months period beginning September 1. The Specifications Committee is requested to report to the Joint Committee on or before June 21. The same Specifications Committee which acted in December will have charge of the new specifications and it is doubtful if many changes will be made over the last schedule. The resolution as passed by the Joint Committee is as follows:

"That the committee on paper specifications appointed pursuant to committee resolution of October 28, 1921, be and is hereby requested to prepare standard specifications and samples of paper which it deems suitable for the public printing and binding, having due regard for economy, and submit the same, together with a proposal form and recommendations as to the standardizing, testing, and use of paper by the Government, to the joint committee on printing on or before June 21, 1922, for its consideration in fixing upon standards of paper for the different descriptions of the public printing and binding for the period beginning September 1, 1922."

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Editorial

Vol. LXXIV New York, June 15, 1922 No. 24
FIFTIETH YEAR

Directory Information Requested

Blanks are now being sent out for information for the forty-eighth edition of *Lockwood's Directory of the Paper and Allied Trades*. These blanks have, in recent years, as a general rule, been filled out more carefully and have been returned more promptly than they were some time ago. There is, however, still room for considerable improvement.

Concerns and individuals should remember that the accuracy and value of the directory depends in a large measure on the co-operation that is given the publishers each year in bringing the information regarding their business thoroughly up-to-date. It should not be necessary to apply but a single time for this information and when it is sent in there should be no question about its correctness in every detail. Unfortunately, however, some members of the trade still have to be applied to several times for the information and some of the blanks which are returned show that they have not been as carefully handled as they should have been. In spite of this handicap, however, the publishers endeavor to secure the desired information from delinquents or to detect inaccuracies in filling out the blanks and usually succeed, but it would be of advantage for some concerns who have not always done so in the past to make a special endeavor to be prompt and to be accurate.

Mills this year are specially requested to be sure not to list among their products varieties of paper which they do not make. As is well known numerous plants have in the past year or two changed their production considerably, but unfortunately they have not always been careful to strike the varieties of paper which they have discontinued making from the proof from last year's directory which has been sent them for correction. Of course, the publishers have no way of detecting inaccurate information of this kind and it can always be shown by the mill report that they are not responsible, but misunderstandings and inconveniences because of this carelessness have arisen so frequently of late that it has been deemed advisable to direct special attention to it.

The purpose of the list of special converters of paper continues to be misunderstood. This is intended to include only the manufacturers of paper specialties and not the agents or simple distributors who do not do their own manufacturing, the object of the list being to furnish the paper manufacturers new sources for their product and not to furnish probable buyers information as to where such goods may be bought. The names of the manufacturers of such specialties will be gladly included in the "Specialties Section." New concerns are constantly going into this line of business as the uses to which paper may be put expand and to have their names appear in the directory cannot fail to be of advantage to them as well as the paper manufacturers who are more than ever just now seeking new outlets for their productions.

It seems advisable also to call attention again to the restrictions that must be applied in the Section of Water Marks and Brands.

The section is restricted to papers of various kinds. Bags, envelopes and other paper products are excluded because of their multiplicity. The section is restricted also to actual owners of water marks and brands. Paper merchants may not list in this section the brands and water marks of mills, which they do not own but simply distribute, because this, obviously, would lead to much confusion.

In general it is suggested that the instructions on the blanks be read carefully and that they be filled out as accurately as possible and returned at the earliest possible convenience. Such co-operation will be greatly appreciated by the publishers and it will be sure to insure the printing of as absolutely correct data as it is possible to obtain.

Correspondence in Paper Making

The Joint Committee on Vocational Education in the Pulp and Paper Industry has been engaged during the past three years in preparing a set of textbooks, covering the manufacture of pulp and paper, designed for educational work as well as for reference. The funds to cover the expense has been contributed by the industry in the United States and Canada. The United States Committee is now engaged in raising about \$5,000 necessary to complete the undertaking.

The two preliminary volumes deal with mathematics, chemistry, etc., leading up to the actual manufacturing processes and are designed for study and instructional uses by students. The third volume, issued in April on the manufacture and treatment of wood pulp covers thoroughly each of the four pulp processes as well as the preparation of the wood and the treatment and testing of the pulp.

In addition there is a chapter on bleaching. Each section is prepared by men of ripe experience and has been checked and approved by a large number of pulp engineers.

With the publication of the third volume on the manufacture and treatment of wood pulp the Vocational Education Committee of the Pulp and Paper Industry has completed arrangements whereby correspondence courses on this volume will be available to any one in the United States and Canada. These correspondence courses will be given by the University of Wisconsin with the official co-operation of the Forest Products Laboratory at Madison, Wis.

Five courses have been decided upon. One covers the entire subject and the other four deal separately with each of the pulping processes together with wood preparation and pulp treatment that is common to all.

The University of Wisconsin and the Vocational Education Committee will shortly issue a bulletin that is being prepared outlining the courses and the details of arrangement and cost to the individual.

This arrangement cannot fail to be greatly appreciated by many workers in the mills and others interested in gaining a knowledge of pulp and paper making because it will furnish them competent instruction at a nominal cost and will enable them to cover the ground in a much quicker and more satisfactory manner than if the work were attempted without an instructor. The high standing of the University of Wisconsin as an educational institution, the prestige of the Forest Products Laboratory and the

conscientious and able manner in which the Vocational Education Committees of the Pulp and Paper Industry has carried out every step of its work thus far indicates that this correspondence course will be just about as good as it is possible to arrange. Manufacturers should not hesitate to recommend the course to their employees and others that they believe will profit by it.

Fresh Outbreak of Strike Trouble in Maine

[FROM OUR REGULAR CORRESPONDENT]

WEST ENFIELD, Me., June 13.—A fresh outbreak of strike trouble at West Enfield took place Saturday night, when Delta Wyman, pulpwood boss for the International Paper Company here, was murderously assaulted at the door of his home, receiving a slash in the thigh from a knife, the wound fortunately not being of a serious nature. As a result of the affair, James M. McGinn, aged 32, of Montague, was arrested at his home Sunday evening on a charge of assault with intent to kill.

Wyman is in charge of a crew of men which was about to begin loading upon cars 20,000 cords of pulpwood belonging to the International Paper Company for transportation to Orono, the company's mill at Montague having been closed since May, 1921, when the men went on strike. It is said that McGinn, with three companions, went to Wyman's house Saturday night and demanded that he call off the crew of men which was to load the pulpwood. It is also understood that threats were made to dynamite Wyman's boarding house where the crew was boarding. An argument ensued and it is alleged that McGinn slashed Wyman in the thigh with a knife. While the attack is understood to be the outcome of the ill feeling caused by the strike, it is said that the men concerned are not members of the union. Last summer one of the gates of the International Paper Company's dam at Montague was blown out with dynamite and suspicion was directed against the strikers although nothing was ever found to connect them definitely with the crime.

Will Be Glad to Confer On Paper for China

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 14, 1922.—Lynn W. Meekins, of the Bureau of Foreign and Domestic Commerce, formerly Trade Commissioner at Shanghai, China, has gone to the Boston district office of the bureau, where he will shortly assume the position of manager of that office.

Mr. Meekins is well versed in the subject of Chinese markets for American paper and will be glad to confer at the Boston office with any paper manufacturers or exporters who are interested in the subject of exporting paper to China.

Visit Kimberly Clark Mill

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 12, 1922.—More than 150 officers of Wisconsin cities, attending the annual convention of the league of Wisconsin Municipalities in Appleton, were guests of the Kimberly-Clark Company on Friday and were taken through the company's big mill at Kimberly. Most of the officers had never seen the process of papermaking. Other entertainment also was provided by the company.

Wilfred Wylde to Manage Liberty Paper Co.

BELLOWS FALLS, Vt., June 12, 1922.—Wilfred Wylde has been appointed manager of the Liberty Paper Company.

He is a graduate of the Massachusetts Institute of Technology, where he took a course in chemical engineering. For two years he lectured on chemistry at the University of Maine and for four years has been head of the chemical research department of the Eastern Manufacturing company of Bangor, Me.

Obituary

William R. Crump

At the age of fifty-eight, William R. Crump, manager of the New York office of the Martin-Cantine Company, Saugerties, manufacturers of surface coated paper, and with offices at 501 Fifth avenue, died suddenly this week in the office of Dr. Willis A. Wilder, No. 116 Nassau street. Mr. Crump succumbed while he was being treated by Dr. Wilder for indigestion, the cause of his death being given as sudden heart attack.

Acting in the capacity of New York representative of the Martin-Cantine Company since its founding, twenty-five years ago, Mr. Crump, by his tact and skillful qualities as a salesman, had a great deal to do with the success of that concern, whose capacity was increased from five tons a day to over a hundred during the period of his connection with them. Mr. Crump was formerly allied with the J. G. Preble Company at Saugerties, N. Y., manufacturers of blankbooks and ruled paper.

The esteem in which his business associates held him is evidenced by the following remarks made by one of the leading paper men in New York:

"When thirty-five busy executives and salesmen of leading New York jobbing houses will leave their active duties and spend the whole day in paying the last tribute to a man, such action shows in what high regard William R. Crump was held by his friends in New York. Possessed of great tact, he was able to meet the many difficulties that daily presented themselves, and besides getting the business for his company, to thoroughly satisfy the merchants to whom he sold.

"Many a young paper dealer is indebted to Mr. Crump for his start in business and for a fatherly interest in his welfare as he met his troubles. Salesmen out of jobs looked to "Crumpy" for positions and heads of concerns were interceded with to give a job to some erring but otherwise able salesman.

"His annual fishing trips were always productive of a line of new stories which, though at times enlarged, were always entertaining, the climax being reached when one year he brought back a diagram of the fish he had caught.

"As Mr. Crump for many years occupied a prominent position in the coated paper industry, he will be greatly missed for his fairness, ability, and a geniality of manner which was a delight to all that knew him."

Mr. Crump had made all arrangements to retire July first and rest after his many years of conscientious, hard work, and had planned a fishing excursion for this summer with his old friend and associate, Henry Dickout, of the Martin-Cantine Company, at Cape Vincent.

Interment was made at Mountain View cemetery, Saugerties, and the Catskill Mountains formed a beautiful background as the impressive rites of the Masonic order were rendered by his lodge. Pall-bearers attending the cortege were Frank Stone, Holly Cantine, Henry Dickout, Fred Countiss, A. W. Pohlman, Lewis Fellows, Samuel Stiles and Charles W. Knode. Mr. Crump is survived by his widow and two sons, and hundreds of friends and relatives mourn his loss.

Oscar Thilmany

APPLETON, Wis., June 13, 1922.—Oscar Thilmany, founder of the Thilmany Pulp and Paper Company of Kaukauna, died at his home in Frankfort-on-Main, Germany, Sunday, May 21, according to word received by friends here. Burial occurred at Frankfort-on-Main.

Mr. Thilmany was about 80 years old. He had been in ill health for some time. His survivors include his widow and one daughter. Decedent was one of the successful paper manufacturers of the Fox river valley, building up a large business at Kaukauna. He was active in the company until 1901 when the business was incorporated and Mr. Thilmany retired.

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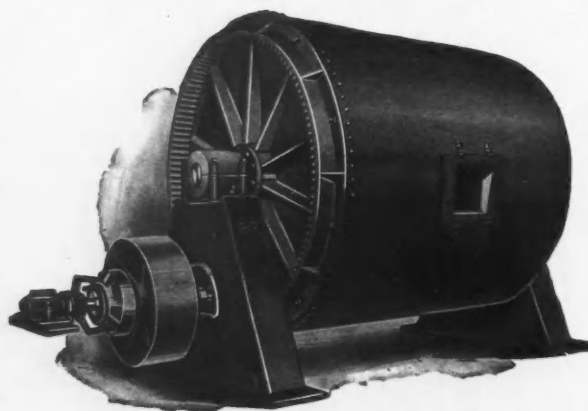
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Section of the

Technical Association of the Pulp and Paper Industry



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



Conducted by W.G. Mac NAUGHTON, Secretary

THE SULPHITE COMMITTEE IS PROBABLY REFERRED TO

FRIEND MACK:

I suppose you think its about time you saw my John Hancock so here goes.

I see what you are trying to do and thought I would drop you a line and tip you off how the land lay with me. I got a letter a spell ago from the chap that heads one of your committees wanting me to go onto it, a good letter too, and he's a good fellow, so I hear, though I never met him personally myself. I would have said O. K. if it hadn't been for the Big Chief. There's lots of things I have thought of that I would like to get the other fellow to try first—you know. And there's lots of things I could do here if the Old Man knew they were being done somewheres else, but when I talk about them he says, "Where are they doing it that way?" When I have to say "I just thought about it myself," he says "You run the mill and let the other fellow experiment." I guess before long if I stay I will have to be like the fellow I heard of, when the Big Chief came into the mill and asked him how many cooks he was going to get this week. He said "I don't know, the Old Man hasn't told me yet." Ha! Ha!

Well, I told the Old Man how the fellow wanted me to go onto his Committee and pretty soon the Big Chief sent me word he wanted to see me. He says, "We hired you to run your part of the mill for the Old Man and not to work for somebody else." I says "It is Jake with me but I thought maybe I would have the rest of them working for me on how I could lower my sulphur nearer to the 190 pounds that the swedes get." He kind of looked at me and said, well, he would see, maybe it would be all right at that. You see he had just got the figures for May and I had dropped the sulphur from 300 to 250 and made sure that the bin wasn't running behind either.

Another thing I would like to do is to raise the yield to about eleven hundred and when I get through with the wood room maybe I will. The wood is very fair though not A1.

We have a chemist here but actually he don't dare leave the Lab. I don't suppose there's many mills like this, but he is so busy making tests on every car of coal, alum, sulphur and limerock besides making paper tests that he has no time to look around the mill even if he dared to. He was telling me last night about checking up on the iron in the alum when the iron in the water we use amounts to far more. Worse than that, they are still using 40 lbs. of alum to the ton—on news too! After I was here a while I asked the Old Man if he had not read George Bearce's dope about alum and size in news. He said that George may have run wood rooms but he had not run a news machine with this crew. It made me think of what they used to say B. V., "No beer no work"—you know.

Well, I guess that's enough this time. So long.

HAS BEEN.

P. S.—When I first read this over I was afraid perhaps that I had written about things so plain that the Big Chief or the Old Man could tell I was writing about them. But, pshaw, they don't read your section. I guess nobody does but the real technical fellows, so I am safe enough.

H. B.

Co-operation Between the Forest Products Laboratory and the Paper Industry

Advices have been received from the Forest Service that the Forest Products Laboratory in its pulp and paper division will continue the fundamental studies of the chemical pulping processes on approximately the same scale as during the past year. An allotment has been made to permit the Laboratory to co-operate with the American Paper and Pulp Association in the study of pulp and paper mill waste. In order to facilitate the work J. D. Rue of the Laboratory has accepted membership on the Committee of the Technical Association, having this subject in charge and of which Robert B. Wolf is chairman.

One of the phases of pulp mill wastes is drum barker refuse and the makers of pressing machinery for the removal of water from this material preliminary to its use as a fuel have indicated a desire for official tests on their equipment.

Plans are being made by two of the concerns having equipment based on different principles to run such a test in the near future at Nekoosa, Wisconsin, where there are both the machines and also the material to work with. The tests will probably record the quantity of bark pressed per hour, the power required, the quantity of water removed and the initial as well as the final moisture content. The whole test will likely be made under commercial operating conditions and should therefore be of supreme value both to the makers and to the users of the machines.

Itasca Paper Co. Contributes Again

The Vocational Education Committee of the Pulp and Paper Industry acknowledges an additional contribution of \$50 from the Itasca Paper Company, Grand Rapids, Minn., to apply toward the completion of the textbooks on pulp and paper manufacture.

The Itasca Paper Company manufactures the paper used by the *St. Paul-Pioneer Press* and the *St. Paul Dispatch*, and like many other paper manufacturers in the United States and Canada this company realizes the permanent benefit to the industry to be secured by the use of the textbooks which are being prepared under the direction of the Vocational Education Committee.

THE USE AND ABUSE OF PAPER MAKING FELTS*

BY GEORGE H. HARVEY, CHAIRMAN OF THE JOINT COMMITTEE ON FELTS, T. A. P. P. I.

A Dutchman, once asked to talk on the labor question, began: "Ladies and Gentlemen: Let us go back to the beginning, or to the Fifteenth Cemetery, then there will be more to talk about."

In the discussion of "The Use and Abuse of Paper-making Felts," we too, had better go back to the beginning.

The beginning of trouble with felts in a paper mill, is often traced to the purchasing agent. You know there are several manufacturers of felts in the United States, and they all have salesmen, and they are every one jolly good fellows, and they ought to have our felt business, every one of them, but only after intelligent study of the conditions under which the felt is to operate.

Most Felt Manufacturers Know Their Business

I believe the felt manufacturers know more about the manufacture of felts than the paper makers. They have made wonderful improvements in their felt mills, and in the manufacture of paper making felts in the last decade, but it will take them several years yet of experimenting and research work, before they can make a felt that will satisfy the average machine tender. One that will never wrinkle, never need washing, will never mark the paper, and will never wear out until it is time for his mate to go on duty, so that his mate can change it and put on a new one.

I think it would be worth while if our machine tenders and the men who purchase felts, could take a trip occasionally through some of the modern felt mills, and see the care given in the manufacture of felts. They would then realize how some of the whims of mill superintendents and machine tenders increase the troubles and expense of felt manufacture. They would then, I believe, realize that the felt manufacturers know more about the manufacture of felts than paper makers, and would insist that the purchasing agent give the salesman as much information as possible as to the requirements of the felts, and then leave it up to the felt manufacturer to supply a felt best suited for the kind of paper that was being made.

Co-operative Study of Problems

Last year at the request of some of the manufacturers of felts, there was a Committee appointed from the Technical Society of the American Paper & Pulp Association to meet with a representative committee from the manufacturers of paper makers' felts. After several meetings, it was decided that if the paper makers or the felt manufacturers could agree on some uniform data sheet in ordering felts it would result in giving the paper manufacturer a better felt for his requirements, and eventually in working a great benefit to all the mills. If all the paper mills, when ordering felts, would give explicit information in regard to their machine, as to the different mechanical and chemical conditions under which the felts operated, these statistics going to the felt manufacturers could be tabulated, the results studied, and eventually we would know what effect the different appliances such as rubber rolls, suction boxes, suction rolls, suction presses, ball bearings and other means of relieving tension, have on the life of the felt.

To illustrate: Mr. Salesman from the Shuler Kenwood Co. comes to see me and I tell him his felts are all right, but I want to get something that will not mark the paper quite so much. He says: "I have just what you want, look at this sheet of board made on our Number Two Ninety Eleven style of felt. Let me make up a half dozen of these for you. I will ship one and hold the rest for your shipping instructions." So we give him an order. Perhaps when we get the first felt it stretches out so badly in the first few hours that we have to shut down the machine and put an extra hitch in the felt in order to run it. This is a loss of

time, probably the machine tender gets disgusted and the felt is condemned simply because the salesman did not know that the conditions in our plant were a great deal different from the conditions in the mill where the sample of board was made.

If the felt salesman had been receiving the proper data regarding the felts, he might have said: "Now I can give you a finer felt that would help you get what you want, but I am afraid you cannot run it unless you make certain changes on your machine." If the felt manufacturers were supplied with all the facts regarding the equipment of our machines, and would then tabulate them, they could probably gather a lot of valuable information from the paper manufacturer.

Standardization of Styles and Designs

There is also another side to this felt question, that would, I am sure, receive attention if the paper makers visited the felt mills oftener, and that is the number of odd styles and special weaves of felts that are being made by some of the manufacturers, and the expense involved in so doing.

We are all familiar with the great saving that was made during the war by the standardization of various products all over the country. I only have to mention two:—the automobile tire, and other auto equipment. The standardization of these things meant millions saved to the people in the automobile business, and now they will never go back to the old way of every man building many different designs of auto parts and different sizes of tires that no one wants.

We, as paper makers, know what changes mean in a paper mill, but we seldom think or realize that even as we, in changing a grade of paper have to go back to the stock from which we make it and study that, and wash up between changes, so the felt men likewise have to go back to the wool they use, changing the blends, and step by step in the manufacture of the felt, change their machinery all along the line.

To begin with, odd yarns increase the cost by not allowing them to run full batches, and even when a full batch is run, the card and mule have to be changed after the run, requiring a different setting, all of which interferes with production to a large extent.

Standardization of Sizes

Many of the operations in the manufacture of felts are guided by individual judgment. This judgment can be exercised to better advantage when the same size and design of felt is run through in quantity one after another, than when each felt is different from the last. By having fewer sizes and designs to make, the felt manufacturer would probably be able to concentrate on these and work out efficiencies and improvements more quickly than at present, when each mill, and even each machine, takes an individual clothing.

We feel that there could be a great deal done in the matter of standardization of felts and jackets, if the paper mill Superintendents gave this enough thought, and worked with the felt manufacturers. A great many mills could help even their own plants by standardizing the lengths of felts, especially where they have several machines of different widths, so that a felt used on one machine could be used on another in an emergency, and where an accident would happen to a felt, it could be used on a narrower machine. A good many mills are carrying all their press felts of the same length and it is sometimes an advantage to have a top and bottom felt on cylinder machines, of the same length.

After a felt is properly bought, so that it is best adapted to the particular requirements for the class of paper to be made on it, and to the position on the machine which it will occupy, then it is up to the mill men to get the most out of the felt.

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

Storage of Felts

Now, the first place it occupies in a paper mill is generally the store room, and it should be the duty of the receiving clerk to examine the felt very carefully when received from the railroad or express company, to see that upon receipt it is not damaged in any respect, and if it is damaged, to make proper claim on the express company or railroad company.

If the felt is to be stored for any length of time, particular care should be given as to the place and manner of storing the felt. Felts should be stored, especially during the summer months, in a cool and absolutely dry place. Moisture causes mildew and destruction of wool fibers. Felts and jackets should be kept in the original wrappers if possible, tied tightly, and care should be taken that there are no holes in the wrapping papers. Dirt injures felts and attracts moths. Never lay your felts against brick or stone walls. The felt room should be kept clean and in good order, and moth preventatives should be used freely and frequently. The best preventative is flake naphthaline, but it evaporates and must be renewed every few weeks. Felt stocks should be examined at least once a month in the summer months, for traces of moth or other injury.

Care in the Machine Room

When the felts are taken to the machine room to be put on the machine, they should be handled carefully, as they are bulky and heavy and can easily be torn by a nail or anything sharp, and they should be put down only in a clean place.

Now we are ready to put the felt on the machine, and it is up to the man in charge of this work to see that it is not only done speedily, but in the very best way, for very often the care exercised in putting a felt on the machine, will mean the difference between good and poor service. Many paper mill men are in such a hurry to start a machine, that they will not take time enough to put a felt on carefully, wet it thoroughly, and to allow it to become adjusted to the machine. They will begin to tighten up on the felt long before it has "found" itself.

The best place to save time in putting on a felt, is before you start to do it, by getting everything ready as far as possible, and so instruct the help that each man on the job understands just what he is to do. In this way, as many men as possible can be on the job without getting in the way of others, and be of real assistance to the boss.

Care of Machine Equipment

There are some things that should be constantly watched and kept in the best of condition; such as suction boxes and whippers. Where these are made of wood they need careful watching, or there will develop high and low places which would injure the felt. Felt rolls (especially worm rolls) cause great wear on the felt if allowed to get out of condition. I do not think it time lost to see that all journals and boxes are wiped clean of grease (*and not with the new felt*) for even if the grease is taken off a felt with kerosene, it will not filter the water from the sheet in those spots as well as if it had not been dirtied.

It is not economy to have a scarcity of men about the wet end of the machine when starting a new felt, especially on the big cylinder machines. Two men on either side to keep the felt smoothed out, a man at the lever to strike the machine in or out, and another at the jack to ease off the tension as the felt shrinks, are few enough. The boss machine tender, or the machine tender, supervise the entire work and his experienced eye may save many dollars by prompt and accurate directions to his associates.

While caution is required in starting fourdrinier felts, much more is required in starting the long cylinder felts on account of their greater length, many cylinders, and the baby press rolls that they have to contend with.

When necessary to rope up a fourdrinier wet felt for washing, care should be taken that the felt is not subjected to severe pressure and press rolls should be loosened up for that reason.

Breaking in a New Felt

In wetting a new felt, a water pipe is the best method. This gives a steady, even stream of water flowing across the full width of the felt, and causes uniform shrinkage. If a hose is used, a barrel of water will sometimes be dumped into one of the laps before the felt is smoothed out, and as a result, the felt does not run true, or has a slack space.

Every roll on the machine should turn freely and cylinder bearings should be watched carefully. All felts are subject to a great strain lengthwise, cylinder felts especially and the more friction and strain, the sooner the felt has to be removed. Don't stretch felts too tightly. A large percentage of felts are ruined by an absolutely unnecessary strain.

Hot water is detrimental to felts. Warm water injures them and causes them to stretch and sometimes fills up the pores. Use the coldest supply available.

Care During Shut-downs

Felts on idle machines deteriorate almost as fast as when running. When the machine is shut down, the felt should be raised from all rolls and care should be exercised to see that it does not come in contact with iron, as rust becoming embedded in a felt will fill up the pores at that point. When standing idle on the machine, the felts should be raised so that the air can reach them at every point, so they can dry quickly and thus prevent mildew.

Over the week-end shut-down, and even for shut-downs over night, the superintendent should insist upon the above precautions being carried out. A felt which dries out with all the weight of the rolls and couches on it, and the tension unrelieved, will stretch as it dries, and weaken between the points of contact. Under each roll will remain a wet streak and this portion of the felt may soon develop a slack spot after the machine has been started.

Care in Use of Acid in Cleaning

The scouring of felts with acid on the machine is a very important matter. Many times a felt will become filled up in a small area, and the machine help, to overcome their troubles quickly, will throw a dipper of raw acid on the spot. This may eat the yarns in a short time, or it may only weaken them so that they will not break for some time, but there is no doubt that such a procedure is injurious to the felt.

If the distribution of the acid can be made uniform, as for example, when it is applied through the shower pipe after being diluted, such a method will cleanse the felts and moulds while not materially weakening either, if it is not practiced too frequently. One quart of acid to a barrel of water should be about the right strength of such a solution.

One development has come out in this era of high speed machines which is rather surprising, and that is, the felt can be made shorter on the high speed machines than formerly was used at speeds of about 500 f.p.m., if the felt rolls are decreased in number. This shows that the tremendous strain caused by the felt reversing its course on a felt roll is a greater factor in shortening its life than is the washing of the felt on the machine.

When felts are taken off the machine to be washed in the felt washer, they should not be left in a pile on the floor where they can be injured, but should be hung up carefully until it is time to wash them.

Washing Felts

In connection with washing felts, the following suggestions are offered:

1. The temperature of the water should not exceed 120 degrees; that is, it should not be so hot but what a man could bear his hand in it. Higher temperatures injure the wool fibers.

2. The quantity of soap to be used varies with the amount of dirt to be removed from the felt, and with the size that has been used in the paper. It is safe to say, however, that enough soap should be used to give a good suds.

3. Use a good soap that rinses out readily, and keep away from strong alkalis, as alkalis will dissolve wool fiber. There are varieties of soaps that are specially prepared for this purpose and one of these should be used, but the ordinary soap used about the mill would not be satisfactory for felt washing purposes.

4. If felts are washed in warm water, it is much better to reduce the temperature of the water gradually, while the felts are being rinsed, until the natural temperature of the water is reached, as sudden changes in temperature change the original texture of the felt.

5. The felt should not be run in soap more than 20 minutes, and rinsed only long enough to wash out the soap, perhaps another 20 minutes.

Economy and good business management should make superintendents, foremen and machine tenders observe all these precautions.

In times during which there are strong demands for paper products, many things are sacrificed for greater production. This cannot be obtained, however, by being careless about the condition of the machines or in the use of felts and jackets.

CARE OF THE PULP GRINDSTONE SURFACE

BY RALPH K. PRATT, M. E.—WISCONSIN RIVER PULP AND PAPER CO., STEVENS POINT, WIS.

It is now generally admitted that the factor most largely affecting groundwood quality and production is the condition of the surface of the grindstone. Much has been done in the last few years toward obtaining better control of this factor, but the mill is rare in which it is not possible to make improvements along this line.

The proper grinding surface is, as near as possible, a perfectly cylindrical one, upon which the impression of the burr is made. All grindstones are not perfect. Some have holes in the surface or develop holes during use. Holes of themselves cause waste by making slivers from the wood instead of pulp. If they are of any size they also injure adjacent surface by causing the burr to jerk and chatter during the sharpening operation. Holes of any size should not be tolerated longer than necessary. If it is impracticable to turn the stone down to eliminate them, then the stone should be discarded.

The general operation of preparing the surface of a grindstone for producing pulp, in machine shop practice, would be considered a turning operation. The grinder bearings, grinder shaft and burr-holding device represent the essential parts of the simple engine lathe. In grinder room practice the burr-holding and moving device alone is called a lathe. The grinder bearings, shaft and flanges are the centers and work-holding mandrel of the engine lathe. The first essential in the preparation of the grinding surface is to have the bearings, shaft and flanges true and in good order, so that the grindstone will rotate on a fixed center without any sidewise or up and down movement.

Types of Apparatus

The next consideration is the burr-holding device. Not so many years ago the so-called grinder lathe was used only to turn the stone to cylindrical shape. Then the sharpening was done with a hand lever, and the lathe was not again used until the stone was so far out of round that it could no longer be safely run. It is now common practice to use the lathe for all turning and sharpening operations. There are several types of lathes available. The hydraulic power operated ones are convenient, save labor and speed up the turning and sharpening operations. Good work may be done with hand operated lathes. The essential things are that the lathe parts shall be rigid and that there shall be no looseness between the parts. Fair work can be done with a lightly constructed lathe if it is kept tight and the grindstone is run very slowly, but this is not possible in all installations and is seldom desirable on account of the time lost. The better practice is to replace light lathes with substantial ones as rapidly as possible. At least one grinder manufacturer is now building the regular grinder lathe with two and fifteen-sixteenths inch shafts for carriage ways and other parts in proportion.

The lathe carriage has two points to be watched for looseness, the carriage ways and the cross-feed ways. The carriage ways are either gibbed ways or shafts. The gibbed ways are usually provided with an adjustable shim for taking up looseness and wear. To take up looseness on shaft ways it is necessary to fit new bush-

ings in the carriage. The cross-feed ways are usually gibbed and provided with an adjustable shim. On the carriage there should be a fixed surface or stops against which the burr-holding fork may be always securely bolted in such a position that the burr surface is parallel to the grindstone surface.

Details of a Burr-Holder

The shell burr is held on a mandrel turning on a pin which is held in a fork. Here again are many opportunities for looseness which will cause an imperfect grinding surface. The burr should be mounted on an expanding mandrel which will hold the burr tightly, and which will not loosen its hold during the sharpening operation. Some kind of roller bearing is usually used between the mandrel and stationary pin. This bearing should fit closely and should not be used after it becomes worn enough to allow the burr to swing sideways. The pin should fit tightly in the fork and means should be provided for holding it tight. The fork should be of strong and rigid construction. As mentioned above, it should be securely fastened to the lathe carriage in such a position that the burr surface will always be parallel to the grindstone surface.

Now let us go back to the machine shop analogy for a few moments. A skilled machinist will sometimes do a remarkably fine piece of work on an old wornout lathe, especially if he is familiar with that machine through years of use. But the stone sharpener in the grinder room is not a skilled machinist, although he does attain a considerable degree of skill. But he has to use as many grinder lathes as there are grinders. Then too, several different men have to use these lathes. To obtain good results, therefore, it is especially important to have the equipment in good order.

The various points touched upon which are essential to the producing of the best surface on the grindstone will now be grouped together.

The grinder bearings, shafts and flanges should be in such condition that the grindstone will rotate on a fixed center.

The grinder parts should be rigid and tight, so that the edges of the pockets, or cells, can be made to maintain a small clearance without touching the stone surface.

The grinder lathe should be bolted securely to the grinder frame.

All stationary parts of the lathe and burr-holder should be rigid and tight. All moving parts should fit closely.

After a good grinding surface is once obtained, a constant observance of these rules will do much toward maintaining a surface on the grindstone which will at all times produce good pulp with the minimum amount of waste.

All of this may seem simple or fundamental, but it is a fact that much poor groundwood and waste in the form of slivers is being made in grinder rooms every day through laxity on these points, or a failure to appreciate their importance. When poor pulp or an abnormal amount of waste is being made in the grinder room, a careful checking up with these points in mind will often disclose the cause.

A DICTIONARY OF PAPER TERMS

(Continued from last week.)

Cuprammonium. A bluish solution of copper oxide in ammonia, which has the property of dissolving cellulose. This property is taken advantage of in the preparation of "Willesden" water-proof and other products.

Cutlery. Common wood pulp or jute paper, prepared so as to ensure freedom from acid compounds, or substances likely to produce hydrogen sulphide. Anti-tarnish papers.

Cutlery Ropes. A term applied to cutlery papers made from hemp or old rope.

Cutter. The machine used to trim paper to size in the flat. There are two kinds, one cutting sheets from rolls and the other cutting stacked sheets of paper of considerable thickness into smaller sizes.

Cyclostyle. Tissue waxed paper used for cyclostyle work.

Cylinder Mould. A cylinder covered with fine meshed wire, revolving in a vat of paper or pulp stock in such a way as to catch fibers on its surface and allowing the water to pass through the facing. See Couch.

In pulp mills used as a dewatering machine.

Cylinder Part. That portion of a board machine wherein one or more cylinders take the place of the wire of fourdrinier machine.

Cymene (Cymol $\text{CH}_2 \text{C}_6 \text{H}_4 \text{CH}_2 \text{CH}_2 \text{CH}_3$). A colorless, transparent liquid with a pervading aromatic odor. Spec. Gravity 0.862, Boiling Point 174 deg. C. It is the chief constituent of the so-called sulphite turpentine obtained as a by-product in the digestion of sulphite pulp. It is not a true turpentine. Physically it makes a good substitute for turpentine in paints as a thinner, but its use is prejudiced by odor.

McKee (J. Ind. & Eng. Chem. June, 1921) suggests the use of cymene in fat splitting.

D

Damping Rolls. Small perforated cylinders or pipes laid across the paper machine by which moist steam is brought to the web in its passage at calenders or elsewhere. Rolls cooled internally with water on the surface of which the moisture of the air is condensed. The web of paper in contact with such rolls are dampened ready for calendering.

Dandy. A hollow roll of proper diameter covered with wire cloth resting and revolving on the wire between the suction boxes. Any desired pattern may be woven into or applied to the covering and because it stands out on the face of the roll its outline is impressed on the wet paper which upon drying is slightly thinner and more transparent on the lines of the pattern. The pattern or design so produced is the true "watermark."

Dandy Mark. Defect in paper caused by a mesh or meshes of dandy roll becoming filled causing stock to be picked out leaving a hole or imperfection in the sheet of paper.

Decker. Apparatus for removing part of the water from paper or pulp stock, consisting of a vat, cylinder mould and a couch roll, but without a felt. The fiber adhering to the couch is scraped off by a doctor. So called from its designer.

Deckle-Edged. Paper made to simulate hand-made paper, by leaving untrimmed the rough edge produced by the deckle.

Deckle Strap. The endless rectangular rubber band which defines the edges of the paper being formed on the fourdrinier part and keeps the stock from running off the wire at the sides.

Deckle. (1) Movable wooden framing round the wire mould

in making paper by hand. (2) The ragged edge on hand made paper. (3) The distance between the deckle straps on a fourdrinier machine or the width of untrimmed paper being made, e. g., narrow deckle or 160 inch deckle.

Decorticate. To remove husks or linters from cotton or other seeds, from Cortex, the bark.

Defective. Incomplete, having some part missing, or badly made.

Degras. See Lanolin.

Deliquescent. Having the property of taking moisture from the air, hygroscopic. Bleaching powder, Salt and Calcium Chloride are examples of deliquescent materials.

Dcmly. See sizes of paper.

Devil. A machine for removing dust and dirt from rags.

De-Water. Taking water out, or reducing the water content of stock. Pulp thickener.

Dew Point. See Humidity. Temperature at which moisture is condensed from the air.

Dextrin. (Otherwise British Gum, Starch Gum.) An adhesive or sizing adjunct prepared by heating starch with or without a little nitric or hydrochlorine acid. Malt extract by virtue of the diastase it contains, acts thus on starch, which is then said to be converted.

Diaphragm. In flat screens, the vibrating floor under the plates. Sometimes of leather but usually composed of several layers of cotton impregnated with rubber and with a rubber surface. Any flexible supporting medium.

Diastase. A peculiar nitrogenous substance which is capable of acting upon starch, converting it into a sugar and rendering it soluble. Can be used for removing starch from rags.

Dicotyledon. A botanical term applied to plants whose seeds on sprouting produce two seed leaves in trees such as beech, ash, pine and conifers.

Diffuser. The steel tank commonly used in sulphate pulp mills in which the black liquor is separated from the pulp after digestion.

Digester. The container or autoclave in which chips are cooked under pressure in making chemical pulp.

Direct Current. A current in which the separate urges caused by cutting of the lines of magnetic force are compensated by others of the same interval.

Direction. In paper refers to the arrangement of the fibers in the sheet. Machine direction is the line of travel from wet end to reels, and cross direction at right angle thereto.

Dirt. In paper anything that mars the appearance of the sheet.

Disc Barker. A machine consisting essentially of a revolving disc with knives set in its face. In rotating the stick of wood against the disc the bark is shaved off. See Barker.

Disc Evaporator. See Evaporator.

Dissolver. The tank usually equipped with an agitating device in which soda ash, size, or other solid or semi-solid materials are treated with water to form solutions for use.

Doctor. A wood or metal plate of proper design applied horizontally to a revolving roll or cylinder to remove particles of paper or pulp, or other materials thereby maintaining a smooth surface on the roll as "calender doctor."

Dolomite. A natural carbonate of Magnesium and Calcium sometimes used for acid making in sulphite pulp mills. The

- source of magnesian lime generally used in milk of lime acid systems.
- Double Coated.** Coated both sides.
- Double Crown.** SEE SIZES OF PAPER.
- Double Demy.** SEE SIZES OF PAPER.
- Douglas Fir.** *Pseudotsuga Douglasi* (Oregon Pine). A coniferous tree growing on the Pacific Slope towards the North, free from branches to a considerable height. The tree itself is at times 300 feet high. The waste from the lumber is a source of pulp by the soda and sulphate processes.
- Drab-Sealing.** Drab colored sealing papers.
- Drapers' Caps.** Very thin brown papers, glazed on one side (M. G.) made of wood pulp, used in many trades for wrapping small articles.
- Draw.** The condition of having one part of paper machine travelling somewhat faster than the portion behind it, in order to compensate for the elongation of the web of paper.
- Drawing.** Paper of various qualities used by artists and draftsmen. Best qualities made of cotton or linen. Sulphite and mechanical pulp with china clay makes a good grade for school work. Finish and sizing depend on special requirements.
- Drum.** A rotatable cylinder. A metal cask used for bleach, sulphuric acid, etc. Cf. Barking Drum.
- Drum Washer.** A hollow, round or octagonal vessel consisting of a framework covered with wire cloth rotating on the surface of stock as in a beater or washer. It is equipped with tangential blades, running to its edge. Its lower edge is submerged. The water passes through the wire and is removed by the scooping action of the blades, being discharged through the axis. Sometimes a hollow cylinder inside of which the material is washed during rotation.
- Drum Winder.** Apparatus for forming rolls of paper from a web. May be either single or double drums. See Winders.
- Dry End.** That portion of a paper machine consisting of the dryers, calenders, reels and winder.
- Dryer.** The revolving iron cylinder, usually from 3 to 6 feet in diameter, internally heated with steam, over which paper is run to be dried. The dryer part may have a number of cylinders, usually in two tiers. On board machines without dryer felts the dryers are frequently arranged vertically as many as six in height or in three or four tiers. On a Yankee or M. G. machine a single dryer of large diameter is used.
- Dryer Felts.** Heavy cotton canvas cloth, (sometimes of wool), a little wider than the dryers, running the entire length of the dryer part and arranged to hold the paper against the face of the dryers. They are referred to as top and bottom dryer felts as there is usually at least one for each tier of dryers. On board machines usually no dryer felts are used.
- Dryer Part.** See Dryer and Dry end.
- Drying.** Strong tough rag or wood pulp papers, of medium thickness, used for letterpress, copying books, and similar purposes. Unsized and absorbent.
- Drying Royal.** See Drying.
- Dry Printings.** A term applied to common papers used for news, printed dry from the reels of the printing press which were formerly damped when the sheet was reeled off to the Hoe press.
- Duplex.** Paper having one color on one side and another on the other side. Produced by various methods of manufacture.
- Duplicating Papers.** Also called manifold. Unsized and half-sized papers used for taking copies on cyclo style, mimeograph, and similar duplicating machines. Best qualities are composed largely of sulphite or esparto, but the common varieties contain mechanical pulp.
- Duster.** A machine, containing revolving arms through which rags or old papers are passed to remove dirt, buttons, etc.

E

Easy Bleaching. Slowly well cooked pulp, well washed, having as much non-fibrous matter removed as possible. Chemical pulp in bleaching requiring 15 per cent or less bleaching powder.

Edge Runner. A pulp grinding machine developed in Europe in which grinding stones in a substantially vertical position revolve in a circular stone trough. Originally used in treating ores. Used in Kraft paper and pulp mills for reducing the hard cooked stock. "Kollergang."

Edwards' Attachment. An arrangement whereby light weight papers are carried or led on an upper felt from the first to the second press, and from second press to dryers.

Effect. One of the stages or units in compound vacuum evaporators. There are usually three or four units or effects running in series. See Evaporator.

Efflorescence. The property of losing water of crystallization. Washing soda is an efflorescent salt.

Electrode. A conductor by which electricity enters or leaves any piece of apparatus.

Electrotype. A plate for printing illustrations, prepared by corroding a metal surface upon which a photographic impression has been made.

Elephant. See sizes of paper.

Elutriation. The washing out by means of water, of a light or finely divided material from a heavier or coarser one, as in examining clay.

Embossed. Papers upon which a raised or depressed design has been formed by means of special steel rollers, the surface of which has been cut to a particular pattern. Or by the metal roll carrying with the engraved pattern and the other of compressible material, such as paper or cotton.

Emerson. A form of refining engine. From the manufacturer's name. See Jordan.

Emery. A very hard abrasive. The crushed artificially prepared mineral corundum—Oxide of Aluminium.

Emery Papers. Prepared by coating a strong paper previously moistened with glue, with fine emery. Used for cleaning and brightening metal goods.

Enamel. A term applied in various ways to highly polished coated papers used for box covers, and to cards coated with a mixture of zinc white and glue.

End. See book end.

End Papers. Odd sheets placed by the binder at front and back of a book. Usually termed fly leaves.

Endogens. Plants that grow by developing new substance internally, e. g., grasses and palms.

Engine. See beater, refining engine.

Engine Sized. Paper sized in the beater or mixer. Usually refers to the use of rosin size. Called E. S. Papers.

Envelope. Papers having special qualities for folding, strength, durability, etc., to be used for envelopes.

Eosin. A coal tar dye-stuff obtained by the action of bromine on fluorescein dissolved in acetic acid. Gives a reddish shade but is very fugitive when exposed to sunlight.

Esparto. A grass (*Stipa Tenacissima*) growing chiefly in Spain and Northern Africa. Cooked with soda it yields about 45% of fiber very suitable for magazine papers. Much used for this purpose in Europe but not in America except as it occurs in old magazine papers.

Esparto Papers. Papers made of esparto per se, or mixed with small proportions of wood pulp, specially adapted for magazine and writing papers.

Ethyl Alcohol. Spirits of wine. Grain alcohol. C_2H_5O . Produced by the fermentation of sugars.

Evaporator. Apparatus to remove water by heat with or without vacuum. The principle is to expose as much surface of the liquid to be evaporated as possible to a counter current of heated air of low relative humidity or run it over heated surfaces. In vacuum evaporators the reduction of the boiling point at reduced pressure is the means of boiling the liquid several times with its own steam at reduced pressure, as in multi-effect evaporation. See Yaryan. Porion's disc evaporator consists of vertically rotatable discs half submerged in the liquid to be evaporated, all in an enclosed chamber through which heated air or furnace gases are passed.

Exogen. A plant that grows by developing new substance in external layers, showing concentric rings, as an ordinary tree.

F

Fahrenheit. See Thermometers.

Fast and Loose. Pulleys placed in pairs, one of which is keyed to, and revolves with the shaft, the other revolves on the shaft and carries the driving belt when a machine is not in use.

Featherweight. Very light weight, bulky papers used in books, etc., also thin opaque writing papers made from soda pulp, sometimes refers to tissues.

Feed Water. The water supplied to a boiler.

Feel. That characteristic of paper which concerns the sensation transferred to the fingers. A means of judging quality, but more particularly the finish.

Felt. A woven fabric composed of wool or cotton, acting as a carrier of the formed sheet. Wool felts are used on the wet end, and cotton felts customarily on the dryers.

Felt Rolls. Rolls of wood or any suitable metal carrying the wet or dry felts and usually arranged with apparatus for correcting tendencies to run out of line.

Ferric Chloride. A compound of iron ($FeCl_3 \cdot 6H_2O$), which with ferrocyanide of potash yields Prussian Blue. If a solution of ferric chloride is applied to one side of a sheet of paper and a solution of tannic acid to the other some idea of the extent of sizing can be had by observing the depth of the black color reaction between the two chemicals, which will be much more intense in slack sized papers.

Ferric Nitrate. A reddish colored iron salt, which, added to the pulp in the beater, produces many shades of cream printing papers when used in small quantities and buff colored papers when used in greater quantities.

Ferric Oxide. Oxide of iron (Fe_2O_3), iron rust. The coloring pigment in Venetian red, red ochre, etc., also called sesquioxide.

Ferricyanide of Potash. Red Prussiate of Potash. See Turnbull's Blue.

Ferricyanide of Potassium. See Potassium ferricyanide.

Ferrocyanide of Potash. Yellow Prussiate of Potash. See Berlin Blue.

Ferrous Oxide. Protoxide of iron (FeO).

Ferrous Sulphate, iron sulphate ($FeSO_4$). Usually in green

crystals $FeSO_4 \cdot 7H_2O$, used as an adjunct in dyeing paper—Copperas, Green Vitriol. To some extent used instead of alum in coarse papers.

Fiber. (1) A plant cell much longer than wide and composed essentially of cellulose. Fibers compose the framework of plants and trees. (2) Wrapping paper composed largely of chemical pulp.

Fiber Leather. See leather board.

Filler. China clay, pulverized talc, asbestine, or other water insoluble powder of proper color used for increasing the opacity or improving the surface effects of paper.

Filter. (1) To clear or purify a liquid by passing it through a strainer such as fine wire, cloth, other fabrics or sand.

(2) The apparatus used for filtering liquids in manufacturing plants, chemical factories and laboratories.

Filter Press. An apparatus for filtering under pressure or vacuum to save time as compared with gravity filters. The lime sludge from causticizers is frequently treated in a filter press.

Finishing Foom. That department of a paper mill containing calenders, cutters and packing arrangements.

Fir. A family of coniferous trees, (*Abies*) typified by the balsam.

Fireproof. Made of materials such as asbestos that do not burn or do not readily burn. Paper and board may be rendered partially fireproof by treatment with magnesium sulphate solution.

Fix. To cause to adhere as with dyes, or size. See Mordant.

Flat Screen. See Screens.

Flash Point. The temperature at which an oil gives off sufficient inflammable vapor to be ignited momentarily by a flame of standard size. See Oil Test.

Flax. The plant whose fibers are used for linen (*Linum usitatissimum*). These fibers occur in paper made from linen rags. Straw from flax cultivated for the seed is practically a waste material in Minnesota, North Dakota and some parts of Western Canada, several hundred thousand tons in quantity per year. A possible source of paper making material. See Bull. 322 U. S. Dept. Agr.

Flint. Papers, usually coated, to which an extra polish has been imparted by friction with a long flat stone moving quickly to and fro across the surface of the paper as it comes from the calenders.

Flow. Box. Sometimes called head box on a fourdrinier machine. A box or chest divided vertically into two or three compartments placed before the apron to receive the stock from the screws and break the rush so as to deliver an evenly flowing stream over the breast roll on to the fourdrinier wire.

Flowers of Sulphur. Volatilized sulphur, deposited on cooling as a fine dust, an acid plant trouble due to insufficient air supply or too rapid cooling of sulphur vapors. Sublimed sulphur.

Fly Bars. See Beater.

Fly Paper. Paper coated with oil and molasses, or other substance which renders it sticky, or impregnated with some chemical such as arsenic, quassia bark, etc., to render it poisonous.

Foam. See Froth.

Foil. Paper coated with aluminum, tin, copper, zinc, or lead used for packing or decorative purposes.

Folio. A book size in which a sheet folded once forms two leaves. The largest size of book. See sizes of paper.

Foolscap. See sizes of paper. A writing paper originally distinguished by the water-mark of a fool's cap.

- Foot Pound.** The energy required to raise one pound through a vertical height one foot.
- Foot Valve.** A valve at the bottom of a suction pipe.
- Formation.** The setting of the fibers into fixed position. This begins as soon as the stock leaves the flow box, and is influenced by the shake, speed and first suction boxes as well as by other factors.
- Formalin.** A disinfectant, properly formic aldehyde or formaldehyde.
- Fourdrinier.** See Paper Machine.
- Fourdrinier Part.** That part of a paper machine, containing the endless horizontal traveling wire screen on which the sheet is formed. The portion carrying the breast roll and table rolls is usually kept in motion by a horizontal lateral shake, in addition to the forward motion of the wire and at right angles to it.
- Fourth Hand.** The junior member of the paper machine crew. He assists the third hand in operating the winder in forming the rolls.
- Free.** Referring to stock largely of long fibers little beaten, which readily parts with water on wire and suction bones, leaving sheet with a "wild" blotchy appearance if too free.
- Free Rosin.** The rosin present in rosin size in excess of that required to combine with the soda to form the rosin soap.
- French Chalk.** See talc.
- Friction.** Glazed paper having a high surface due to passing between rolls running at different speeds.
- Front.** The operating or tending side of a paper machine.
- Froth.** Accumulation of tiny bubbles caused by mechanical or chemical action in paper stock which cause defects in the finished paper, due to the bubbles breaking while the sheet is being formed on the wire.
- Fruit Papers.** Thin papers, mostly of sulphite or sulphate pulp similar to tissues in texture, used for wrapping fruits before packing. Some may contain a small amount of paraffin wax.
- Fuchsine.** A red aniline dye also called magenta and rosaniline.
- Fumigating Paper.** Paper soaked in potassium nitrate, dried and then steeped in an alcoholic solution of some fragrant balsam, such as tolu or storax.
- Fungus.** A plant of low order. There is a wide range of fungi from fine molds to mushrooms. Some are very destructive of wood and wood pulp.
- Furfural.** A compound obtained by treating oxycellulose with hydrochloric acid. When this is done quantitatively, the amount of furfural obtained is a measure of certain properties of the fiber.
- Fustic.** A vegetable coloring matter derived from the heartwood of some varieties of West Indian and South American trees.
- G**
- Galvanized Iron.** Sheet iron coated with zinc.
- Gas.** Matter in a state wherein it tends to expand in all directions, Sulphur dioxide and chlorine are examples. Water becomes a gas above 100 deg. C. at atmospheric pressure.
- Gasket.** A sheet or ring of a compressible material used as a means of making connections water or gas tight.
- Gate.** The movable partition in a flow box or vat to admit stock to paper machines. In pipe fittings a form of valve having such a movable partition. In foundry work, holes in the mould by which to introduce the molten metal in and relieve the over-flow, also the metal left in the holes when cooled.
- Gages.** Instruments by which to measure the pressure of steam or water, depths of liquid in containers, or amount of vacuum in such apparatus such as evaporators and condensers.
- Gelatine.** A substance extracted from hoofs or skins of animals. Used as a sizing material for paper and as a surface coating for photographic papers. See Glue.
- German Silver.** An alloy containing zinc, nickel and copper, also called packfong, victory silver and new silver.
- Glass Paper.** Paper coated with glue and sprinkled with finely powdered glass, used in cabinet working.
- Glass, water.** See Sodium Silicate.
- Glazed.** (1) Fitted with glass as a window. (2) Having a highly polished surface as certain forms of coated paper and board.
- Glazed Boards.** Box boards glazed by any process.
- Glucose C₆H₁₂O₆.** Grape sugar, a carbohydrate obtained usually by action of acids on starch. Is also the final product of the action of acids upon cellulose, and it is this reaction that leads by fermentation to the production of alcohol from wood waste, and waste lyes from pulp mills.
- Glue.** A substance obtained from hoofs, horns, and bones of animals by boiling with water and drying the product. Gelatine is the chief constituent of glue.
- Glycerine.** A syrupy liquid with a sweetish taste C₃H₅(OH)₃. Specific gravity 1,260, obtained as a by-product in the soap industry, derived from fats. Used with litharge as cements for sulphite digester linings, and as a constituent of printers' ink rolls. Hygroscopic and therefore used as an ingredient to prevent drying of inks, etc.
- Gommeline.** See Dextrine.
- "Good."** A ream or package containing no "outs" sheets.
- Grain.** A small unit of weight (originally the weight of a grain of corn). One gram weighs 15.432 grains. In paper the direction of manufacture on the machine as "across the grain."
- Gram.** The basic weight unit of the metric system. The weight of a cubic centimeter of water at 4° C. 28.31 grams = one ounce avoirdupois.
- Granite.** A mottled paper, imitating granite. Composed of fibers of two or more contrasting colors.
- Grass Bleached Tissue.** Thin tissues of special white, used for wrapping stationery goods, the name is intended to indicate the open air bleaching of the sun on linen or cotton cloth.
- Gravity.** Properly in this connection, specific gravity. The weight of a substance compared with the weight of an equal volume of water. In mills it usually refers to the reading on the stem of a hydrometer according to the scale used.
- Grease Proof.** A class of wrapping papers rendered impervious to oily materials by hydrolysis in the course of long beating. Imitation parchment. See vegetable parchment. Waxed papers are not grease proof.
- Great Eagle.** See sizes of paper.
- Green Vitriol.** Sulphate of iron. See Ferrous Sulphate.
- Griffith's White.** See Lithopone.
- Grinder—Grinding.** The machine and the process whereby wood is held by hydraulic pressure against the face of a revolving grindstone in the presence of water in the preparation of mechanical pulp or groundwood.

(To be Continued.)

CURRENT PAPER TRADE LITERATURE

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

Fractional Boiling of Esparto.—J. Edington Aitken.—*Pulp and Paper*, xxix, 1260-1262 (Dec. 15, 1921).—The non-cellulose constituents of esparto consist of (1) starches and similar compounds, (2) pectoses, and (3) lignins. The author proposes first boiling the grass for about one hour with a weak solution of caustic soda (1.5 per cent sodium hydroxide on the dry weight of the grass) either at or above atmospheric pressure, draining off the liquor, and boiling for about 3 hours at 35 to 40 pounds pressure (gauge) in liquor containing 14 per cent sodium hydroxide on the weight of the grass. The advantages claimed for this process are: (1) Early removal of the highly colored products of starch and pectose resolutions; (2) A much cleaner and more easily washed pulp; (3) Greater economy in bleach, a better color, and better permanence of color; (4) Reduction in cost of recovery. The only disadvantage is that the digester is more difficult to furnish.—A. P.-C.

The Manufacture of Straw, Pulp and Paper in France.—A. Le Chatelier.—*Papier*, xxiv, 547-548 (Dec., 1921); *Monit. Papeterie Française*, lii, 781 (Dec. 15, 1921).—The author suggests that the manufacture of straw pulp be undertaken on a small scale by the French farmers, as a co-operative undertaking. The process is well known and does not require any unduly expensive or complicated equipment. It would have the double advantage of giving the farmers an outlet for their straw and of reducing very considerably the importation of paper pulps into France.—A. P.-C.

Safeguarding Shipments of Pulp to Foreign Ports.—C. R. Hazen, Milton Hersey Co., Montreal.—*Pulp and Paper*, xx, 68-70 (Jan. 26, 1922); *Paper Mill*, xlv, No. 9, 2, 42, 44 (March 11, 1922).—The following recommendations are made, applicable to the case of hydraulic pressed pulp. The system of sampling and testing, preferably the wedge-system, should be explicitly detailed for the protection of the mill and the guidance of the tester. The proportion of bales to be taken should be stated more fully than has been done so that if there are several lots of pulp included in the shipment a proportional number shall be taken from each lot and the air dry weight of each estimated separately. The provision that only intact bales of normal weight should be taken for test should be rigidly enforced. The method of cutting the wedges and selecting the laps should be to cut them always to a template and to cut one wedge from the top layer of every fourth bale. The author recommends for discussion the establishment of a bureau for settling disputes, the bureau to nominate their expert and pay him. The bureau would consist of three men, one nominated by pulp and paper manufacturers, one by pulp buyers, and the third to be chosen by these two.—A. P.-C.

Determination of the "Bromine Figure" or "Chlorine Factor" of Pulp and Utilization of these Quantities in Bleaching.—Alfred Tingle, E. B. Eddy Co., Ltd., Hull, Que., Canada.—*J. Ind. Eng. Chem.*, xiv, 40-42 (Jan. 1, 1922; *Paper*, xxix, No. 18, 7-10 (Jan. 4, 1922).—The extent to which bromine solutions, approximately decinormal, act on cellulose and on unbleached sulphite spruce pulp has been investigated. It is found that accurate measurements are possible only when the material is brought into solution, e. g., by certain mineral acids, before treatment with bromine. Under these conditions there is no reaction between bromine and cellulose within 30 minutes. The reaction between bromine and pulp (containing lignin) seems to proceed in definite steps, one of which is completed in 30 minutes. The determination is carried out as follows. A decinormal bromine solution is prepared by adding 8 g. of bromine to 100 cc. of normal sodium hydroxide solution, diluting to 1 liter, and standardizing

by adding excess of potassium iodide, acidifying with hydrochloric acid, and titrating against decinormal sodium thiosulphate solution. The "acid solvent" is prepared by adding 50 cc. of sulphuric acid (sp. gr. 1.84) to 450 cc. of hydrochloric acid (sp. gr. 1.19) and allowing to cool. Sometimes the pulp is better dissolved by adding the acids separately and successively in the reaction vessel, allowing the hydrochloric acid to disintegrate the pulp before adding the sulphuric acid. A 0.6-0.75 g. portion of the pulp is weighed into a 200-cc. flask having a well ground glass stopper. Add 30 cc. of "acid solvent" and agitate till solution is complete (or add 27 cc. hydrochloric acid, shake till the pulp is disintegrated, add 3 cc. of sulphuric acid, and shake again.) To the uniform solution, free from hard, unchanged pulp, add 20 to 25 cc. of bromine solution, shake well, allow to stand for 30 minutes with occasional gentle agitation, add 2 g. of potassium iodide dissolved in 25 cc. of water, shake well, dilute as largely as the capacity of the reaction vessel allows, and titrate with decinormal thiosulphate solution. The thiosulphate should be added very slowly towards the end and each addition should be followed by prolonged and very vigorous shaking. The end point is taken at the disappearance of the red tint of the cellulose precipitate, leaving a cream colored or white suspension. The results obtained on unbleached sulphite pulp have been calculated to what is called the "bromine figure," which is defined as the weight in grams of pulp which reacts with 1 cc. of decinormal bromine solution. A more convenient figure is the "chlorine factor" which is defined as the weight of chlorine equivalent to the bromine reacting with 100 parts of pulp in 30 minutes. In the case of the pulp experimented upon, it was found that the weight of chlorine required to bleach 100 pounds dry weight is equal to the chlorine factor multiplied by 3; and it is suggested that the factor 3 might vary from mill to mill according to the nature and quality of the pulp and the method of carrying out the bleaching.—A. P.-C.

Determining the Quality of Loading Materials for Paper.—F. M. Bouvier.—*Monit. Papeterie Française*, liii, 13 (Jan. 1, 1922).—To determine the quality of loading materials for paper making, the following determinations should be carried out: moisture (drying at 100 to 105 degrees C.) whiteness (working up with water and glycerin and comparing with a standard sample), fineness (noting the time of settling in water as compared with standard samples, or microscopically), grit (working up with water and passing through a 150 mesh screen), and chemical analysis.—A. P.-C.

The Analysis of Cardboard—Tensile Strength and Composition.—Raymond Isnard.—*Papeterie*, xlv, 50-57 (Jan. 25, 1922).—Isnard describes a home-made apparatus for testing the tensile strength, which may also be used to indicate the elongation if desired. It is not as accurate as the instruments at present on the market, but is sufficiently accurate for the purpose, and is cheap and simple. The microscopic determination of the composition may give either the nature of the fibers used, or else the nature and grade of the raw materials, the latter being much harder to determine and requiring considerable experience. The usual reagent used is chloro-iodide of zinc.—A. P.-C.

Chemical Hydration of Pulp.—Alfred MacKay, Meigs, Bassett & Slaughter, Inc., Philadelphia. *Paper*, xxix, No. 16, 7-10 (Dec. 21, 1921).—Hydration of paper stock in the beater is a chemical change, the energy spent in operating the beater merely hastening chemical action. Experiments were carried out with a view to obtaining the hydration effects of chemical means in a

much shorter time and with a smaller expenditure of power. The main difficulty in working with such a method is to control it so that excessive hydration does not take place, which would impair or destroy the paper making qualities of the stock. A satisfactory method of control of hydration was evolved, which consists in forming a colloidal solution of cellulose and determining its viscosity, which is a measure of the hydration (details of the method not given). Tables are given showing the results of tests on the chemical hydration of various fibrous materials (second cut cotton linters, hull fiber, sulphite and linters, old thirds and blues, No. 1 new white shirting, No. 1 new linen). The following results were obtained as compared with untreated stock: no reduction in good paper making qualities with any grade of stock; increase in strength of finished sheet; decrease in beating time; stock that will mix in all proportions with sulphite and soda pulps; improved physical properties of the finished sheet (including perfect sheet formation and reduction in the amount of size required); a stock that will reach a certain degree of slowness and result in a longer fiber with better felting qualities, which produces a stronger sheet; a reduction in caustic, time of digestion, amount and time required for bleaching with every grade of stock.—A. P.-C.

Natural Regeneration of Scotch Pine.—Biehler.—*Allg. Forst. u. Jagdzeit.*, xcvi, 2-15 (1920); *Botan. Abs.*, ix, 18 (Aug. 1921).—Foresters generally believe that Scotch pine cannot be successfully regenerated by natural reproduction methods. The author, by citing numerous experiments and results therefrom, makes the claim that natural regeneration is not only possible, but also practicable and to be recommended from an economic standpoint. The two principal factors for success are soil condition and stand composition.—A. P.-C.

Increasing Wood Production without Increasing Forest Area.—Arndt. *Zeitschr. Forst. u. Jagdw.*, lii, 89-94 (1920); *Botan. Abs.*, ix, 18 (Aug. 1921).—Compulsory co-operation of small woodland owners is recommended as a means of increasing wood production without increasing the area of forest land.—A. P.-C.

Experiments in Forest Fertilizing in a Heath Plantation of Norway Spruce.—Ludwig.—*Zeitschr. Forst. u. Jagdw.*, lii, 42-51 (1920); *Botan. Abs.*, ix, 27 (Aug., 1921).—The preliminary results of an experiment established in 1914 in a 15-year old stand of Norway spruce show that the application of fertilizer neither stimulates growth nor suppresses heath. An acceleration of growth was noted only where the physical condition of the soil was improved simultaneously with the application of the fertilizer.—A. P.-C.

Uniformity in Sylviculture.—Martin.—*Tharander Forst. Jahrb.*, lxxii, 45-61 (1920); *Botan. Abs.*, ix, 28 (Aug., 1921).—A comparative discussion of the methods of regeneration, both artificial and natural, used in Germany. The basic principles and objectives of many standard methods are given, and the actual results attained by each method are cited. Large-unit management and small-unit management, and even-aged and uneven-aged stands are compared. Some foresters favor uniformity within stands and differences between stands, while others prefer a mixed condition within stands. The author believes there is good in both principles, that unnecessary variety should be avoided, and that undue effort should not be put forth to attain uniformity in stands.—A. P.-C.

De-Inking of Waste Newspapers.—Z. *angew. Chem.*, xxxiv, 558 (1921); *Rev. Prod. Chim.*, xxv, 22 (Jan. 15, 1922).—The author recalls that in 1903 the German chemist Otto N. Witt published an article on the de-inking of old newspapers, in which he recommended the use of aniline dyes for printing newspapers and other publications having but a transient interest. These inks would be of the same nature as those used for typewriter ribbons, stamping pads, etc., and a mere bleaching would be sufficient to recover the fibers.—A. P.-C.

De-Inking of Waste Newspapers.—Löffel. *Chem. Zeitg.*, xlv, 286 (1921); *Rev. Prod. Chim.*, xxv, 22 (Jan. 15, 1922).—According to the author attempts to separate printing ink from the pulp in waste papers have so far given negative results. To the reasons given by Haas (*Chem. Ztg.*, xlv, 913, 1921) he adds the following: (1) owing to their rough surface the particles of lamp black adhere to the fibers; (2) the lubrication of the particles can be obtained only by the use of a large excess of reagents; (3) repeated washing causes considerable loss of short fibers; (4) a considerable proportion of old newspapers are used as such for household purposes. If a method were found for recovering the cellulose from the waste newspapers, the difference in price between the recovered paper and new paper would be so small that the collection of waste paper would be dropped as being too little profitable. But as the problem has a great economic significance attempts should be made to find a printing ink which can be easily destroyed by some reagent. Linseed oil, tar, and its distillation products, should also be replaced by products more easily separated from the pulp.—A. P.-C.

De-Inking of Waste Papers.—W. Schrauth. *Chem. Ztg.*, xlv, 1090-1091 (1921); *Rev. Prod. Chim.*, xxv, 22 (Jan. 15, 1921).—A reply to Löffel and Haas (see preceding abstract). The author claims that the use of aniline colors instead of lamp black in the manufacture of printers' ink could not be successfully carried out, as their use could not be made compulsory by law. Lamp black inks are too firmly established to be supplanted. The fact that de-inking is difficult does not mean that there is no solution to the problem. The solution must be found by scientific research. Spring's work has shown that lamp black is strongly absorbed by soap, in the presence of which it readily passes through filter paper. The most suitable soap solution must be determined by further research. For the removal of the vehicle, the solvent should be added in the form of emulsion, which penetrates better into the interstices between the fibers.—A. P.-C.

Paper Mill Equipment: Beaters and Paper Machines.—E. Arnould. *Papier*, xxv, 30-33 (Jan. 1922).—Brief and general discussion of various details in the design of beaters and paper machines.—A. P.-C.

Sizing Paper with Paraffin.—Fr. Patent No. 524,574, C. A. E. Poulat, May 16, 1921. *Papier*, xxiv, 543 (Dec. 1921).—One hundred parts of kaolin are worked up with 20 parts of hot paraffin, and allowed to cool while still working the mixture. When almost cold, water is added in a fine jet, sufficient being added to form a homogeneous plastic mass. It is then diluted with water to a volume of 500 and is added to 500 parts of bleached chemical pulp at a consistency of about 3 per cent. The paper thus obtained is sized and is entirely different from what is generally known as "paraffined paper".—A. P.-C.

Processes for Sizing Paper.—*Papeterie*, xliii, 1022-1025 (Nov. 25, 1921).—A brief description of various methods of sizing: rosin, gelatin, casein, wax, stearin, fat or paraffin, sodium aluminate, waterglass, sulphite waste liquor, and viscose sizing.—A. P.-C.

The Paper Machine Table. Felting of the Fibers.—F. Benne-man. *Monit. Papeterie Belge*, i, No. 2, 1, 3, 5 (Nov. 1921).—The making of the sheet of paper on the machine depends practically entirely on the wet end; and yet since the invention of the paper machine there has been no fundamental change in this part of the machine. The removal of the water is still effected by natural drainage of the water through the wire, action of the table rolls, and suction at the boxes (or rolls). The continual increase in speed and width of the machines has necessitated a corresponding increase in the length and weight of the table so as to give the same amount of draining before the couch roll. This has influenced the snake of the machine, which in turn has affected the felting of the fibers. The fibers are felted especially at the moment when the direction of motion of the table changes, and hence the sharper the changes the better the felting action. With a relatively light

machine the shake can still be made to act in this manner; but with modern monster machines it is questionable if such is the case. A new method of felting the fibers has recently been tried out, namely, jets of air which are given a rapid to and fro motion and which strike the stock just as it leaves the slice. It has been shown that this does not cause the formation of permanent air bubbles in the sheet, and that it has a decided effect in helping the draining of the water from the sheet.—A. P.-C.

Calculation of the Power Requirement of Beaters.—F. M. Bouvier.—*Monit. Papeterie Fran aise*, lii, 788-790 (Dec. 15, 1921); Translation by A. Papineau-Couture in *PAPER TRADE J.*, lxxiv, No. 13, 45-47 (March 30, 1922).—The power supplied to a beater is entirely used up in (1) raising the stock to the height of the backfall (W_1), (2) tritulating the fibers (W_2), (3) circulating the stock (W_3), (4) friction between the shaft and bearings (W_4). The following formulas are worked out: $W_1=0.222. A. B. U. H.$, in which A is the width of the trough in meters, B the height of stock in front of the roll, in meters, U the velocity of circulation of the stock in meters per minute, H the height of the backfall in meters. $W_2=0.0007. p. S. f. D. n.$, in which p is the pressure of the roll against the bedplate, in kilos per sq. cm., S the area of contact of the roll and bedplate in sq. cm., f the coefficient of friction between the roll and bedplate, D the diameter of the roll, n the number of revolutions per minute of the cylinder. $W_3=1.35. A. B. v_0 (v^2-v_0^2)$, in which A and B have the same meaning as above, v is the velocity of the stock as it leaves the roll, v_0 the velocity of the stock in the trough, both expressed in meters per second. For a given value of v , W_3 is a minimum when $v_0 = \frac{v\sqrt{v}}{T. \mu. d. \pi. n}$, in which T is the total

load on a bearing, d the diameter of the shaft in meters, μ the coefficient of friction, which can be taken equal to 0.02 or 0.03. W_1, W_2, W_3, W_4 are all given in h. p. It is shown that the greater the density of the stock the less the value of W_3 .—A. P.-C.

Improvement to Defibering Engines.—Fr. Patent No. 523,872, V. Bernot and Raymond Fournier *Papier*, xxiv, 503 (Nov. 1921).—The improvement consists in placing a rotary cylindrical screen back of the roll of a beater, the mesh of which is chosen so that the fibers which have been completely separated from one another are allowed to go through while bundles of fibers are held back and remain in the beater. Material is continually fed to the beater to replace that which is removed through the screen. The advantages claimed are: (1) the fibers are subjected to the action of the engine only so long as they are in bundles, (2) the separated fibers are continually removed as soon as they are separated, (3) the material is fed to the apparatus regularly and continuously, (4) the separated fibers remain but a very short time in the apparatus and they are therefore hydrolyzed to a minimum extent. The process is applicable to beating as well as to defibering.—A. P.-C.

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

Botan. Abs.	Botanical Abstracts. Williams & Wilkins, Mount Royal and Guilford Aves., Baltimore, Md.
Chem. Ztg.	Chemiker Zeitung. Walter Roth, Cöthen, Germany.
Monit. Papeterie Belge.	Le Moniteur de la Papeterie Belge. Jean Lecluselle, 68 rue Edmond Van Cauwenbergh, Bruxelles, Belgium.
Monit. Papeterie Française.	Le Moniteur de la Papeterie Française. 154 Boulevard Haussmann, Paris (8 ^e), France.
Paper	Paper. 251 West Nineteenth street, New York City.
Paper Mill	The Paper Mill and Wood Pulp News. L. D. Post. Tribune Bldg., 154 Nassau street, New York City.
Papeterie	La Papeterie. 9 Rue Lagrange, Paris (5 ^e), France.
Papier	Le Papier. 16 Rue du Rocher, Paris (8 ^e), France.
Pulp and Paper	Pulp and Paper Magazine of Canada. Gardenvale, Que., Canada.

Rev. Prod. Chim.....Le Revue des Produits Chimiques. 54 Rue de Turbigo, Paris (3^e), France.
Z. angew. Chem.....Zeitschrift für angewandte Chemie. Verlag für angewandte Chemie, G.m.b.H., Nürnberger Str. 48, Leipzig, Germany.

Technical Photographic Society Meets at Astor

A luncheon meeting of the Technical Photographic and Microscopical Association, with headquarters at 251 West 19th Street, was held at the Hotel Astor, Wednesday, June 14, at 12:30 p. m. The meeting was attended by nearly a hundred representative men who are interested in the work of the society and speeches at the luncheon pledged the whole-hearted support of those in attendance to the work which the society plans to carry on.

The meeting was called to order by the president of the society, James McDowell, of the Sharp & Hamilton Manufacturing Company, Boston, Mass. The president called the attention of his audience that the society is in reality still in the formation stage and that the meeting was called largely to complete the organization.

The draft of a proposed constitution and by-laws was presented and the discussion of these occupied the attention of the assemblage for some time. A committee was then appointed in connection with a proposed exhibit in which the society will participate, and other important committees were also named to carry on the work of the association.

Representatives from many industries were present at the luncheon, and most of the large film manufacturing concerns sent delegates. Dr. C. E. K. Meese represented the Eastman Kodak Company, Alfred B. Hitchins, the Ansco Company, D. A. Smith, the District of Columbia Paper Manufacturing Company, of which he is vice-president, secretary, treasurer and general manager, John H. Graff, the Brown Company of Berlin, N. H., and first vice-president of the society, Bennett Grotta, the Atlas Powder Company of Tamaqua, Pa., second vice-president of the society, Thomas J. Keenan, editor of Paper and secretary-treasurer of the society, and many others including representatives of Bausch & Lomb, Western Electric Company, General Electric Company, etc.

New Flying Boat for Forest Service

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 12, 1922.—The first of a fleet of four flying boats being organized by the Laurentide Aid Service, left Lake St. Louis, Montreal, this week on its way to Northern Ontario, where it will be used in forest reconnaissance and the carrying of supplies for the Ontario Government. The machine was built in England, and was assembled at the Laurentide plant at Lac La Tortue. It was flown from that place to Montreal, a distance of 140 miles in one hour and a quarter, and the maiden trip was successful in every way. The machine is fitted with a 450 h. p. Napier Lion motor, and can carry a one-ton load. Captain W. R. Maxwell, chief pilot of the Laurentide Company, was in charge, and the passengers included Thomas Hall, president of the Laurentide Aid Service; H. Davis, engineer of Vickers, Ltd., and I. M. Dachon and J. Hyde, engineers in the employ of the company.

To Publish Abstract Bulletin

A development of the co-operative effort of the committee on abstracts for the Technical Association and the Technical Section of the Canadian Pulp and Paper Association, is the arrangement whereby the abstracts are to be published in the form of a bulletin with an index. A bulletin of sixteen pages will appear ten or twelve times a year and will be indexed annually. The committee has arranged for an initial rate on this service at \$2.00 per year. Orders should be sent with remittance to the Technical Association office, 18 East 41st street, New York.

PAPER CHEMISTRY AND TECHNOLOGY AT U. OF MAINE

During the period of six weeks, beginning with June 26, the Chemistry Department of the University of Maine at Orono will again conduct a summer school course in pulp and paper chemistry and technology. The University of Maine was the first institution to offer such a course in the Americas and now has over ten years' experience in determining the nature of the courses offered and the content of each. During the past six years young men have graduated yearly in Chemical Engineering, entered the paper industry as chemists, chemical engineers, assistants to superintendents, etc. They have succeeded and attained rapid promotion. Paper mills have also sent qualified men to study the scientific phases of their work, and some graduates of Maine and other institutions have pursued work in pulp and paper chemistry for the M. S. Degree.

The course was started in response to the request of pulp and paper organizations and also popular demand, both in Maine and from other states. It is designed to benefit mill men who have had little or no technical training but sufficient mill experience and such chemistry or chemical engineering students who have a knowledge of analytical and organic chemistry and engineering fundamentals. Experience has proven that the scientific foundation of some of the important factors in pulp and paper manufacture and testing can be given in an intensive course of six weeks. During the summer, it is also possible for many ambitious and qualified mill men and also chemistry and chemical engineering students from other institutions can come to Maine. Quality, quantity and economy, as foundation stones of the industry will be given in lectures as one means of broadening the student's viewpoint.

In Maine, today, there is more capital invested in pulp and paper mills than in any other industry, and this fact alone means ever increasing co-operation between the pulp and paper courses of the University and the mills. Within a short distance of Orono are to be found pulp and paper mills of all kinds, soda sulphite, sulphate and mechanical pulp mills, news print, bag, wrapping, tissue, novelty and writing paper mills.

for determining the quality of papers. Some topics included in this course, are ream weight by different methods, equivalent weights, thickness, surface errors, bursting strength, strength factor, tensile strength, breaking length, temporary and permanent stretch, folding endurance, tearing test, volume, characteristics of rag, sulphite, soda, sulphate and mechanical pulps, degree of sizing,



PAPER STUDENTS AT WORK

special tests, quantitative rosin, stock estimation and identification of unknown samples. Two university credits are given upon satisfactory completion of this course. The laboratory fee is \$4.00 and breakage.

67 s. Pulp Manufacture, Soda Process

Chips are sorted and inspected, liquors prepared, charges calcu-



VIEW IN BEATER ROOM

Some of the summer courses offered are as follows:

67 s. Paper Testing and Analysis

This course includes sixty to eighty hours of lectures and laboratory work devoted to a scientific study of the theory and practice of the important chemical, physical and microscopic methods



VIEW IN PULP LABORATORY

lated and several cooks made under varying conditions at commercial pressures. Speed of cooking, steam condensation, caustic consumption, screening character, yield of fibre, bleach required and fibre strength by standard ball mill procedure will be studied.

Sulphite Process. At least four cooks using a 200 gallon, brick lined digester will be made. Studies will be made on size and

moisture content of the chips and preparation of sulphite liquor using tank and tower. The acid will be analyzed by different methods, the charge calculated, and cooking carried out with use of recording temperature and pressure instruments. Charts and graphs will be prepared, determinations made of relief, gas recovery washing and screening quality, yield of pulp, materials consumed, bleach required, strength by ball mill, etc. Sixty to eighty class hours will be devoted to this work yielding two credits. The laboratory fee is \$8.00 and breakage.

112 s. Advanced Sulphite Process

(Only students who have completed course Ch. 67 or had equivalent training or experience and demonstrated chemical ability will be considered eligible.) Detailed studies will be made of the chemical changes in the acid and stock during the relieve-down period. Material will be removed from the digester at intervals up to the blow and chemical determinations made of free sulphur dioxide, sulphur as esters, sulphur as sulphonic acids, sulphur as sulphate lime and organic acids. Stock will be examined for bleach required, strength, corrected copper number, alpha cellulose, beta cellulose, lignin and furfural. Tabulations, graphs and reports will be made and the relevant literature discussed. Time and credit will be arranged. Laboratory fee will be \$4.00 and breakage.

Ch. 86 s. Pulp Bleaching

Studies will be made as to bleach required for standard color, fibre loss on bleaching, rate of bleaching under varying temperature conditions, stock concentration, acid and alkaline reaction, etc. Sixty to eighty class hours will be devoted to this course which yields two credits. The laboratory fee will be \$4.00 and breakage.

Other courses may be given on pulp and paper subjects if sufficient demand exists. Examinations for students desiring credit are held on August 3 and 4. Mechanical, sulphite, sulphate and soda pulp mills, and writing, news, mixed stock, bag, wrapping and tissue mills will be visited.

Other Courses

The instruction in paper courses will be given by Prof. J. L. Merrill, paper specialist, and other members of the Chemistry Department. Ten or more lectures will be given by men who have demonstrated ability in the industry.

Courses in general, organic, physical and analytical chemistry will also be given.

At or before the time of registration, (June 26), each candidate must present evidence of qualification to pursue the work outlined. As some of the courses must be limited to workable sections and by equipment, applications must be made as early as possible to insure acceptance.

The University Library with its large collection of foreign and domestic pulp and paper journals, books and theses will be open daily. The paper and chemical work will be carried on in Aubert Hall.

Although some evenings will be needed for study and reading, sufficient time will be available for recreation, including tennis, campus life, swimming in the Stillwater River, which borders the campus, canoeing, tramping the Maine Woods, and fishing, week end trips to Bar Harbor and Moosehead Lake, etc.

Bankruptcy Petition Against Miller Paper Co.

FREEMONT, Ill., June 12, 1922.—A petition of involuntary bankruptcy has been filed in the federal court against Homer W. Miller, of Rockford, Ill., doing business as the Miller Paper Company. The petitioning creditors are: Island Paper, Menasha, Wis., \$3,297.53; Wolf River Paper and Fibre Company, Shawano, Wis., \$273.79; Rockford Auto Parts Company, Rockford, Ill., \$44.50. His schedules show liabilities of \$9,340.44 and assets of \$5,579.96.

Bids and Awards for Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 14, 1922.—The Bureau of Supplies and Accounts, Navy Department, will open bids on June 22 for 210,000 rolls of toilet paper for delivery at various Navy Yards.

The purchasing officer of the Government Printing Office will open bids on June 16 for the following: 72,000 lbs. (2,000 reams) 21 x 32—36, No. 20 white glazed bond paper; 3,920 lbs. (20 reams) 22 x 28—196, red cardboard; 17,500 lbs. (350 reams) 20½ x 29—50, white antique printing paper; 5,000 lbs. green calendered tag board in 24" rolls; 4,800 lbs. (100 reams) 20 x 25", smooth pink cover paper.

Dobler & Madge have been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 1,150 pounds (50 reams) of 17 x 22—23, white non curling gummed paper at 15½ cents per pound, bids for which were opened on May 31.

Dobler & Madge have been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 5,150 pounds (100 reams) of 30 x 40—51½, No. 16 lithograph finished map paper at \$.1649 per pound and the Whitaker Paper Company will furnish 2,400 pounds (50 reams) of 20 x 25—48, rough moss green cover paper at \$.0909. Bids for these items were opened on June 2.

May Demonstrate Rubber Latex for Paper Making Here

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 14, 1922.—Frederick Kaye, inventor of the new process for the use of rubber latex in paper manufacture, has expressed his willingness to visit the United States in the near future to consult with manufacturers, in case they are interested in learning more about his process, or experimenting with it.

The Paper Division of the Bureau of Foreign and Domestic Commerce, Constant Southworth, Acting Chief, will be glad to hear from any manufacturers interested in the matter. It is desirable to let Mr. Kaye know as soon as possible whether there is enough interest in his process in the United States to warrant his coming here.

Mr. Kaye will be glad to furnish such quantities of rubber latex for experimental purposes as may be desired by substantial firms. He has just received at London a good sized shipment of latex and will furnish American manufacturers with several hundred gallons of it if it is desired for experimental use in the United States. Manufacturers in other countries are clamoring for supplies of the latex up to the full amount of the supply he has received; hence it is necessary to take immediate action if American manufacturers are to receive any part of the present consignment at London.

To Represent Peerless Mfg. Co.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, June 12, 1922.—Alfred M. Watts, 214 Chancellor street is now acting as the representative in the Philadelphia territory of the Peerless Manufacturing Company, of Norristown, Pa.

Mr. Watts has represented paper manufacturers in this city for the past ten years and now, in addition to selling a complete line of toilet papers manufactured by the Peerless Manufacturing Company, his lines include wrapping papers, paper bags, napkins and paper cutters, being the Philadelphia representative of the Foley Paper Mills, Trinity Bag and Paper Company and the Champion Cutter Company. Mr. Watts phone numbers are Bell, Lombard 1036 and Keytone, Maine 8119.

New York Trade Jottings

R. M. Porter, secretary of the Woodlands Section of the Paper Industry will leave New York next Saturday for a two-weeks' vacation trip.

C. W. Whitehouse, of the Abitibi Pulp and Paper Company, Ltd., Iroquois Falls, Ontario, was one of the New York trade visitors during the past week.

T. J. Burke, secretary-treasurer of the Cost Association has returned from Kalamazoo after a visit to many paper mills in the lake states following the convention.

Carl Weidemann, representing twenty German paper mills, with headquarters in Berlin, is spending several weeks in New York city as a part of his study of market conditions in this country.

The S. D. Warren Company has recently announced that Henry Lindenmeyr & Sons, for many years the sole distributor of Warren's Standard Printing Papers in the Metropolitan District, will be assisted by Lasher & Lathrop, Inc., and The Alling & Cory Co. in serving the New York market.

M. L. Macauley, for the past three years manager of the New York office of Aver & Twitchell, of 342 Madison avenue, has resigned his position. He is to enter the field of mill representatives, having already established connections, and this week opens new offices at room 726, 30 East 42nd street, New York.

Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association, together with George W. Sisson, Jr., president of the Racquette River Paper Company, sailed for Europe last Saturday. Dr. Baker is making a summer tour of investigation of the paper situation in the Scandinavian countries and Germany.

Shippers of Waste Paper and Rags from Trunk Line points to G. F. A. territory will be interested in knowing that the carriers will cancel the present commodity rates and after July 1st will apply the 6th class rates with a minimum of 20,000 lbs., subject to Rule 34 as provided in the Exceptions to the Classification, which is strictly in accordance with the Commission's decision in the reduced rate case.

W. M. Pringle & Co., Inc., 27 Howard street, paper jobbers, announce the appointment of Al. Miller as general sales manager, to succeed Leonard H. Bogart. Mr. Miller has been connected with the company for several years and will be solely in charge of marketing their well-known watermarked brands—Old Abbey Bond, Torchon Bond, Justice Linen Bond, Mercury Linen Bond, Fleur de Lyncen Bond and Penmans Linen Ledger.

The Kolb Carton Company, Inc., of 474 West Broadway, filed schedules in bankruptcy Tuesday, listing liabilities of \$254,608 and assets of \$150,136, main items of which are fixtures, \$83,263, and stock, \$61,139. Principal creditors listed are Thames National Bank of Norwich, Conn., \$100,000; Ironsides Board Corporation, \$44,365; N. E. Oil Refining Company, \$9,327; Harry G. Jones & Co., \$6,651; Fischer Machine Co., \$4,636; M. S. Alper & Sons, \$4,689.

The business formerly operated under the name, C. K. MacAlpine, representing Fengersfors Bruk, Swedish Kraft Paper Mill and other Swedish interests, has been changed, and is now C. K. Mac-

Alpine & Co. E. W. Page has become associated with Mr. MacAlpine in the new firm which will continue to represent the same interests and has moved to new quarters at 268 Hudson Terminal Building, 50 Church street, New York city, telephone number, Cortlandt 1256.

Peabody Houghteling & Co., Inc., of New York, are offering \$750,000 first mortgage serial gold bonds of the Hamersley Manufacturing Company, manufacturers of waxed paper. The issue bears interest at the rate of 7 per cent, and is being made at par, redeemable at 107½ during the first year and at a premium of one-half of one per cent less each year following at the option of the company. An elaborate program of expansion will be put into effect by the company as the result of the sale of these bonds which are secured to the extent of \$4.60 for every \$1 issued and interest on them is earned over five times.

New England Salesmen Have Outing

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 12, 1922.—Twenty-five paper manufacturers' salesmen, members of the New England Division of the Salesmen's Association of the Paper Industry left the Copley Plaza Hotel at ten o'clock Friday morning, June 9 in automobiles bound for Scituate where they enjoyed golf and other sports at Scituate Country Club after a luncheon at the Club House.

The group of salesmen left Scituate about five o'clock and in spite of a hard shower while passing through Marshfield they arrived at Plymouth and paid a visit to the historic Plymouth Rock and other interesting places. A dinner was served at the Samoset Inn, Plymouth, and the delegation returned to Boston, enjoying one of the best moonlight nights of the season. A delightful time was the way several of the men expressed themselves on their return to Boston.

Among those in charge of the affair were John E. A. Hussey of the Boston office of the International Paper Company, vice-president of the New England Division; and Mr. Thomas Walsh of the Hollingsworth & Vose Company on Milk street, chairman of the executive committee.

Howard H. Reynolds of the B. D. Rising Paper Company of Hoositanic, Mass., president of the Salesmen's Association of the Paper Industry, made the trip as did O. M. Porter of the American Pulp and Paper Association. The occasion was the second annual outing of New England Division of the Association.

The trip down to Scituate was made along Jerusalem Road thus giving the members a chance to view the ocean and see the many palatial residences along the shore drive. The party went through Cohasset to Egypt where the men had a chance to view Thomas W. Lawson's establishment, "Dreamworld." At the country club the men were allowed to play with the handicap ratings of their respective clubs and suitable prizes were awarded.

Advertising Leads to Success

"Follow the sign post of sound advertising if you are seeking the highway of business success," is the advice of F. M. Feiker, representative of the Department of Commerce.

Speaking at the first national industrial advertising conference of the Associated Advertising Clubs of the World, in Milwaukee, Mr. Feiker said: "Advertising can bring government and business together, because advertising brings business and the public together, and the government's relation to business is the public's relation to business.

"Commerce Department program for a better understanding of statistics in industry, advancement of our foreign trade and elimination of millions of dollars of waste through simplified practice, offers many copy ideas for industrial and general advertising."

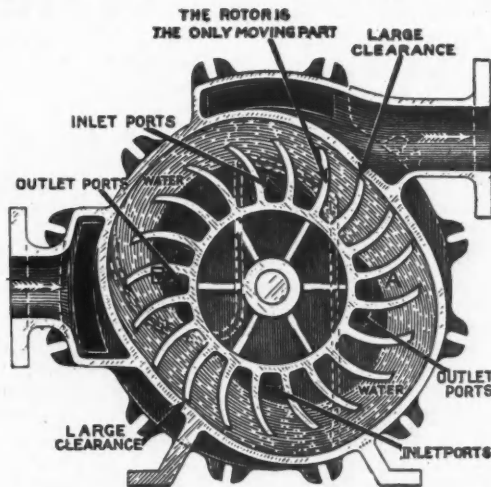
THE HYTOR VACUUM PUMP

FOR FLAT BOX SERVICE

Vacuum
Produced
Absolutely
Without
Pulsation

—
No Vibration

—
Saves Wires



Only One
Moving Part

—
No Rods, Pistons,
Crank Shafts
Loose Moving Parts
and No Gears

—
No Expert Attendance

Western Representative
T. H. SAVERY, Jr.
1718 Republic Bldg.,
Chicago, Ill.

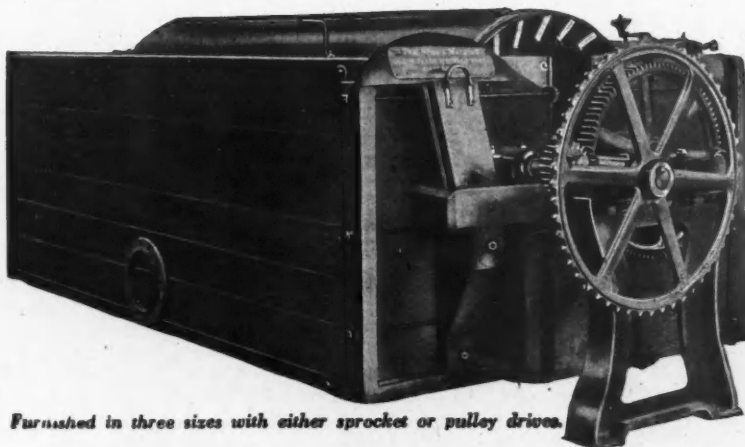
THE NASH ENGINEERING CO.
WILSON POINT ROAD
SOUTH NORWALK, CONN.

New England Representative
G. H. GLEASON
185 Devonshire Street
Boston, Mass.

THE WOOD'S MACHINE

Distinctive performance and intensified confidence in this machine as a Pulp Thickener, Save-All, Washer or Water Filter insure success in its building.

On the market but a few years, our installations number more than **Eighty-five**. Twenty-nine sold the past year.



Furnished in three sizes with either sprocket or pulley drives.

MADE BY
GLENS FALLS MACHINE WORKS
GLENS FALLS, N. Y.

Try our Split Cams for your Flat Screens

SIMPLICITY, in cylinder and vat construction, operation automatic, and without couch roll, doctor or any complicated moving parts.

DEPENDABILITY, in its simple revolving cylinder only, with nothing to get out of order, requiring little attention, and having a patented principle of maintaining wires always clean, insuring continuous performance.

PRODUCTIVENESS, enormous, through clean wires, large screening surface, patented unique method of discharge and freedom from shut-downs.

DURABILITY, by rigid construction, ample bearing surfaces, nothing to injure wires and highest grade materials.

All these enhance its value and involve upon you the duty of investigation.

PAPER DEMAND IN BOSTON REPORTED RATHER QUIET

H. H. Reynolds, President of the Salesmen's Association of the Paper Industry Says the Noticeable Betterment That Is Taking Place in News Print Is Bound to Extend to All Branches of the Industry Soon—New England Paper Manufacturers Largely Represented Among Signers of Protest Against Proposed Duty on Casein—Other Boston Trade News of General Interest.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 12, 1922.—Paper merchants in this city report a quiet week last week with the outings of the Boston Paper Trade Association at the Vesper Country Club in Lowell, Wednesday, June 7, and the New England Division of the Salesmen's Association of the Paper Industry at Scituate and Plymouth Friday, June 9, as the two bright spots of the week.

Better Times at Hand

Harold H. Reynolds, of the B. D. Rising Paper Company, of Housatonic, Mass., president of the Salesmen's Association of the Paper Industry when he was in Boston Friday told the paper salesmen that the demands for news print paper throughout the country would soon equal if not exceed the pre-war level and that this harbinger of returning business was reflected in other branches of the paper industry.

Mr. Reynolds said that the upward trend in business which was slowly manifesting itself today meant that advertising was also increasing and that in turn meant that results were forthcoming because people did not advertise today for nothing. According to his viewpoint the enormous increase in advertising during the past six months pointed to a much better business outlook in general with ample evidence that every paper mill in New England and in the entire United States would be in full swing by the month of September.

He added that his statement was born out by facts which the United States Steel Corporation had just released showing that there was a 25 per cent increase in the steel industry production in spite of the fact that no mills are running on full capacity as yet.

Mr. Reynolds claimed that the pessimist was still shouting hard times because he was still thinking and acting in terms of war time production and he made the prediction that the steel mills and other industries in the country would be back on a normal pre-war basis in another six months because the mills operated on a pre-war basis on about 75 per cent and during the war were artificially stimulated to about 200 per cent capacity.

"With the settlement of the difficulties of the International Paper Company and the establishment of the open shop on a firm basis as well as the rapid depletion of mill stocks and merchants' and jobbers' reserves, the paper industry today is indeed in a fair way to resume a normal profitable business," Mr. Reynolds said.

General News of the Trade

Several New England manufacturers are among those who have vigorously opposed the removal of casein from the free list in the new tariff and were included in the 75 signers of the protest against the proposed action by the Senate which was sent last week to the Senate Committee on Finance. The proposed rate on casein was four cents a pound.

Increased sales of sugar and other commodities which are packed in cardboard boxes and shipped in box board material are still bringing in welcome orders to the manufacturers of the

heavier paper products in Greater Boston and throughout New England, but there has been very little change in prices of these products thus far.

Boston paper men are interested in the new machines of the Salada Tea Company of Berkeley and Stuart streets which embodies cleanliness and economy in making paper bags, fills and labels them at the plant of the company. The machine is invented by an English firm, Job Day & Sons, Ltd., of Leeds, and in its process of packing, pasting and labeling revolutionizes the work, thus making it entirely automatic now.

Mayor James M. Curley, of Boston, will go to Washington, D. C., on June 18 to invite President Warren G. Harding to visit Boston during the second annual educational Graphic Arts Exposition in Mechanics Building, August 28 to September 2, conducted by the Boston Club of Printing House Craftsmen in connection with the third annual convention of the International Association of Printing House Craftsmen.

Carter, Rice & Co., of Devonshire street, are featuring Harmermill Bond, "An Example of the Work We Can Do" and Strathmore Stationery for Men which has proved very popular with the Boston and New England trade as reported by several Boston paper firms.

Business houses at Bahia, Brazil, dealing in paper have sent through Thomas Bevan, American Consul in that city, an appeal to Boston and New England merchants to deal direct with them rather than through New York agencies. A list of those firms doing export and import business and the lists of commodities handled has been sent to Mayor James M. Curley, of Boston. One of the arguments for direct purchase is the saving in freight rates and commissions.

The Andrews Paper Company of India street, has added several new members to its selling organization among them, W. W. Binford, formerly with the Providence Paper Company, of Providence, R. I., who will be in charge of its new twine department and "Bunny" Miner formerly with D. F. Munroe & Co.

Joseph A. Borden in Texas

FORT WORTH, Tex., June 12, 1922.—Joseph A. Borden, director of General Service of the American Writing Paper Company, addressed a gathering of Master Printers' at Fort Worth, Texas, on the evening of May 15, and was accorded a splendid reception.

His talk on the educational campaign among Typothetae printers which the big paper organization is conducting was unanimously endorsed by those present and adopted.

At the same meeting the members of this independent local printers' association, who some time ago had withdrawn their application from the United Typothetae of America, decided by unanimous vote to rejoin the Typothetae body.

The newly reorganized Fort Worth Typothetae immediately appropriated a large sum of money to cover the local expenses of the printed salesmanship educational campaign, and arrangements were made to supply the Fort Worth printers and their customers with ample educational literature. Mr. Borden appeared before the Kiwanis Club of Fort Worth at its luncheon on the same day, and delivered his message of business stimulation to 200 of the prominent business men of the city, who expressed warm appreciation for his address.

The visit of Joseph A. Borden, director of General Service of the American Writing Paper Company, to Waco, Tex., on the evening of May 16, was the means of unifying the master printers of that city. For several months the printing plant owners had refused to unite in any association, but after the splendid address made by Mr. Borden, a new attitude supervened, and before the meeting closed the entire company present voted for a reorganization and application with the United Typothetae of America, at the same time adopting the educational booklet campaign for which the large fine papermaking organization is sponsor.

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280 Broadway

Chicago Office
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Howard Bond



Howard Ledger

"The Paper of Many Uses"

Manufactured by

THE HOWARD PAPER COMPANY, Urbana, Ohio

FORGE LAP-WELDED

SOFT STEEL

DIGESTERS

ALL SEAMS LAP-WELDED

AMERICAN WELDING COMPANY

CARBONDALE, PA.

VERTICAL
SEAMS
HEATED WITH
FURNACES
AND WELDED
WITH
HYDRAULIC
POWER

CIRCUMFEREN-
TIAL SEAMS
HEATED WITH
FURNACES
AND HAMMER
WELDED

Felt Test—Lowest Cost per Ton

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

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

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

WILLIAM A. HARDY & SONS COMPANY, Fitchburg, Mass., U.S.A.



SLIGHT GAIN IN BUSINESS IN TORONTO PAPER MARKET

Some Improvement in the Demand for Pulp Also Is Reported Although Prices Continue Low—Mattagami Pulp & Paper Co.'s Plant at Smooth Rock Falls, Ont., Operating to Sixty to Seventy Per Cent Capacity—Cameron & Fraser Occupy Larger Quarters—Report of Riddell-Latchford Commission Which Has Been Investigating Timber and Pulpwood Administration Is Expected Soon.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 12, 1922.—There are reports in the paper market of increases in some lines and a falling off in others. On the whole, however, the volume for the first two weeks in June shows a slight gain with most of the large handlers. Envelope manufacturers report a better trade and so do manufacturing stationers. News print continues in active demand and is by far the best item of merchandise on the list while kraft paper probably comes second. Book and writings show a fair amount of strength. There is some improvement in the demand for pulp and mills are getting busier but prices are still low.

In the rag and paper stock market there has been some increase in quotations on white blank news, old flat magazine and book stock, ledgers and writings and solid ledgers, as well as soft white shavings. There is a good call for soft white shirt cuttings and also for rope, with prices increasing. It is said that one mill, which is a large user of mixed papers, is closing down for about four weeks and dealers declare a large quantity of mixed papers will have to be shipped elsewhere, probably getting a lower figure. The Don Valley Paper Mills, Toronto, which suffered from a fire in the beater room, stock room and the boiler house, expect to get under way again in a month's time. The work of reconstruction is now going ahead rapidly.

Mattagami Plant Operating

The plant of the Mattagami Pulp and Paper Company of Toronto, which is located at Smooth Rock Falls, Ont., is being operated to about sixty to seventy per cent capacity. G. T. Clarkson, Toronto, as official receiver, says there has been some increase in demand recently for easy bleaching pulp and it is hoped that this increase in sales, will continue to a point where, taken in conjunction with final liquidation of foreign stocks, the market price will show some improvement. Many economies in the management of the Mattagami Company's property have been instituted and the organization has been materially improved. Manufacturing costs are also steadily being reduced. Mr. Clarkson says that bond and debenture holders may rest assured that every possible action is being taken to safeguard the assets of the company for the holders of the mortgage securities. In the meantime, liquidation of inventories and their replacement at lower costs will permit of refinancing of the business of the firm completed to the satisfaction of all concerned.

Pacific-Burt Co.'s Annual Report

The annual report of the Pacific-Burt Company, Toronto, for the year ending March 31, 1922, which will be presented to the annual meeting of the shareholders to be held this week, shows profits of \$115,446. This compares with \$149,397 a year ago. As the company brought forward \$50,705 from the previous year the amount available for the various appropriations was \$166,152.

Abitibi Power Rights Unsettled

The question of the allotting rights of power development on the Abitibi river is still unsettled, according to advice received officially up north from the provincial government authorities. A

number of conferences have been held recently between representatives of the mining interests and the Abitibi Power and Paper Company of Iroquois Falls as well as the officials of the Temiskaming and Northern Ontario railway and the Ontario government.

Enterprising Publicity Campaign Launched

Fred W. Halls Paper Company, 257-261 Adelaide street, west, Toronto, has been doing some original advertising and has recently put on the market a durable, folder, superfine coated paper, which will take half screen tone cuts with the best results, folds well and holds the stitches securely. The new paper, which comes in various weights from 70 to 220 pounds, does not have to be scored before folding. The company reports a large demand for this new sheet and have made known its superior qualities by some unique publicity.

Cameron & Fraser in Larger Quarters

Cameron & Fraser, 112 Bay street, Toronto, who have been in business since 1919, have recently taken over larger quarters and greatly increased their stock. They report that business is steadily improving and that there is an exceptionally good demand for kraft. The firm deal principally in wrapping papers and twines and now occupy the space formerly used by the Lincoln Paper Mills Company, Limited.

Timber Report Soon to Come Down

The report of the Riddell-Latchford Timber Commission, which for the past two years, has been conducting an exhaustive inquiry into the timber and pulpwood administration of Ontario, will be brought down in a few days. It is said that the report will contain a number of radical recommendations in the handling of licenses and cutting rights of the province.

New Concern Begins Business

The Rapid Carton and Label Company has begun business at 456 Richmond street, west, Toronto, and is turning out folding cartons and labels. The new organization starts off with bright prospects. The members of the company are William Fox, superintendent, Mr. Smart, accountant, and Victor Hodder, sales manager. They were all formerly connected with A. E. Long & Co., manufacturers of paper boxes, Toronto, and are well known to the trade.

Notes and Jottings of the Trade

J. T. Moynihan, who for some time past has been superintendent of the Mattagami Power and Paper Company at Smooth Rock Falls, Ont., has resigned and has been succeeded by A. R. Grunwald, who has entered upon his new duties.

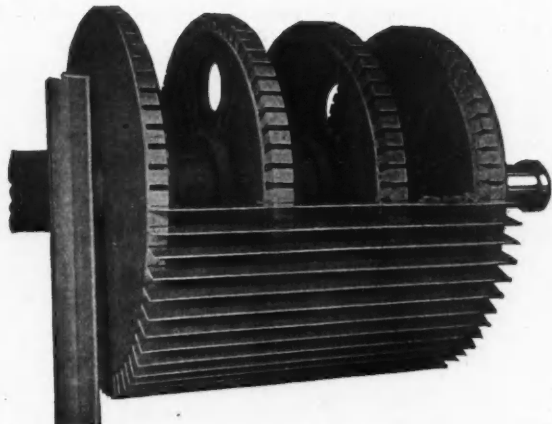
Among the callers on the trade in Toronto during the past week were G. Falkenburg, of Price Bros. & Co., Quebec, and DeForest Coutts of the Whiting Paper Company, Holyoke, Mass.

George C. Winlow, sales manager of the Lincoln Paper Mills, Toronto, was in Chicago last week attending the funeral of Mrs. McEnery, wife of F. T. McEnery of the McEnery Paper Company, who has many friends in the Canadian trade.

H. F. E. Kent, of Toronto, president of the Kinleith Paper Mills Company, who is vice-president of the Canadian Pulp and Paper Association, and W. A. Anderson, superintendent of the mill, attended the annual gathering of the American Pulp and Paper Mill Superintendents' Association in Kalamazoo.

The Wilkinson Paper Company, 76 Bay street, Toronto, has been appointed Canadian representative for the Vandome, Titford & Co., London, Eng., manufacturers of quadrant paper scales.

Mrs. Moore, wife of O. H. Moore, manager of the Hinde and Dauch Paper Company of Canada, Toronto, who recently underwent an operation is rapidly improving. Mr. Moore had intended attending the big Rotary convention in Los Angeles but was prevented owing to Mrs. Moore's illness.



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Manufacturers of

**BEATING and WASHING ENGINES
FLY BARS—BED PLATES—
MACHINE KNIVES**

Our new **KEYED TYPE BANDLESS ROLL** is the final result of Many Years of Experience.

May we not tell you about its many advantages?

PAPER MAKERS CHEMICAL CO. WESTERN PAPER MAKERS CHEMICAL CO.

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FELT SOAP and OTHER SPECIALTIES

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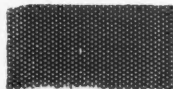
**PAPER MAKERS' and FILTER
ALUM**

Perforated Metal Screens For Pulp and Paper Mills

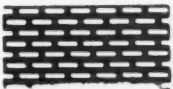
STEEL, COPPER, BRASS, BRONZE
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.965 Inch Round



3/4 x 1/2 Inch Slots

The Union Sulphur Company

Producers of the Highest Grade
Brimstone on the market . . .

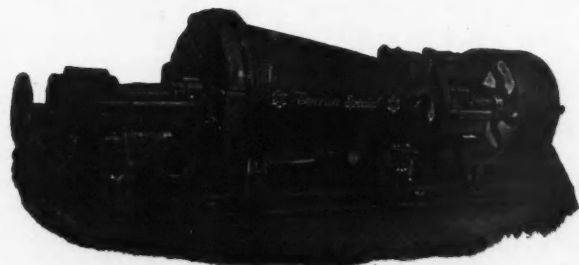
ABSOLUTELY FREE FROM ARSENIC OR SELENIUM

The Largest Sulphur Mine in the World

CALCASIEU PARISH, LOUISIANA

Main Offices: Frasch Building, 33 Rector Street, New York

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They seldom wear out and are never thrown out.
PERFECT CIRCULATION. NO "PADDLING."

The "EMERSON" JORDAN

does its work with half the power required by others of no
greater capacity.

WRITE FOR DETAILS

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, JUNE 14, 1922.

Developments during the past week in the paper market have given both manufacturers and merchants good cause to be optimistic. Recent statistics show that the consumption of news print paper alone for the first four months of this year increased over ten per cent above that period in 1920, the year of abnormal consumption. The approaching coal shortage combined with the rapidly nearing "dry season," July and August, should have a slight stiffening tendency in the prices of many grades of paper. That consumers are aware of this fact is evidenced by their willingness to sign contracts over long periods of time at present price levels.

Figures covering 122 daily newspapers in twenty-seven cities show that the volume of advertising has increased steadily since 1919, one-third more being run in the first four months of 1922 than in 1919. This, together with augmented circulations has made for the present boom in news print consumption. Publishers continue to absorb the commodity in large tonnage and prices appear to be firm at the contract basis of 3.50 cents a pound on standard rolls, f. o. b. mill. The fact that West Virginia coal has risen from \$6.25 to \$8.00 for New England shipment is merely an indication of what may develop in the situation if the strike continues through the fall months.

Book paper has seen another week of increasing prosperity, although prices are still too low to admit of much profit. The increased demand from magazine and trade periodical buyers, many of whom have signed long time contracts, has done much to enliven the market for book after its many months of comparative quietude.

The market for fine papers is steadily improving, the demand from both domestic printers and business concerns and those of Latin America remaining constant. Ledger and bond quotations are generally conceded to be firm, and dealers are satisfied that business is returning in normal volume. A factor which has probably contributed largely to the rebuilding of sales throughout the past year is the extensive campaign of advertisement which fine paper mills have conducted through the medium of nationally known publications.

Tissue mills have been confronted with one difficulty after another during the past few months, and a general recuperation of business may hardly be expected to occur in the short space of any one week. Dealers report, however, that the volume of orders is picking up in a gratifying manner and that quantities of stock which have been lying in warehouses during the textile and shoe strikes are now entering active consumption. Mills are not yet in a position to resume normal production, but it is anticipated that by the close of the summer months the surplus of tissue will have been depleted to such an extent that capacity production will again be possible. Prices of the finished product scarcely warrant its manufacture under existing conditions, and mill representatives are generally reluctant to contract for large tonnages into the future except upon a sliding price basis.

Domestic producers of kraft paper are still confronted with a serious problem in the increasingly large imports of wrappings from Germany and Sweden. This foreign paper is entering the market in such quantities that severe price cutting on American kraft has often been the unfortunate expedient of the domestic manufacturer, and this has protracted the unhealthy condition in the home market. There is no doubt but that kraft is in much better demand, and signs of activity are in evidence for all grades, but the fact that May imports of kraft from Sweden and Germany were higher than those of any previous month this year would make it appear as though this country were being used as a dumping ground for European over-production.

Paper box manufacturers have regained a great deal of confidence in the board market and are again placing orders for considerable

tonnages. Competition in this market is still acute, however, and although prices are too low, a normal rise is anticipated when larger tonnages are turned over. Many board mills have postponed their reopening until the early fall months in the hope that a sufficient demand will be prevalent at that time to warrant full-blast production.

Mechanical Pulp

Groundwood prices are practically at a standstill at the present time, but the demand from paper and board mills has enlivened noticeably during the past week, and a decided improvement has been noted in the condition of the market. Surplus stocks of the commodity are being held by many mills in view of the season of the year, in anticipation of a more eager market toward the close of the summer. Mechanical pulp is quoted at prices which range from \$4 to \$5 a ton cheaper than domestic prices, f. o. b. Canadian mills, but the additional freight involved in shipments even to points in New England brings the ultimate prices to practically the same level.

Chemical Pulp

Mitscherlich pulp appears to be in good demand, and domestic dealers report that a satisfying volume of business is being handled in many other grades. The fact that there is an oversupply of chemical pulp on the ground in this country and that Europe continues to import large tonnages every week has done much to keep prices from rising naturally as the demand increased. Buyers are regaining confidence in the market, however, and are satisfied that prices will not go any lower. It has been predicted that the chemical pulp market is due for a rise in the near future despite the volume of foreign imports at cut prices.

Old Rope and Bagging

Old rope continued to be in good demand for the past week, and it is reported that mills find considerable difficulty in securing sizeable quantities of manila and several other grades of which stocks have become depleted. Bagging is still in the rut, but dealers look for a change in market conditions within the next sixty days as a logical sequence to the improvement which is common to the other kindred markets.

Waste Paper

The general price stiffening which occurred over a week ago in this market has brought the cost of such commodities as No. 1 soft white shavings up to the level of soda pulp. The fact that there is a marked scarcity of many grades of old papers and over-issue stock has, in itself done much to bring the prices up to the present level, although dealers report a satisfying volume of business and steady demand.

Rags

This market continues to be active, and with the general price stiffening in many grades of new and old rags, and a firmer tone in evidence, buyers are placing orders for considerable tonnages in advance. While no decided boom is looked for in the rag market in the near future, the fact that roofing has exhibited a tendency to increase in price and is in much better demand, may be taken as indicative of a decided strengthening of the market.

Twine

Recent issues of the PAPER TRADE JOURNAL have forecasted a boost in prices in this market to correspond with the enhanced cost of raw jute fiber which went into effect about a month ago. During the past week dealers reported that all grades of twine had advanced on an average of a cent a pound, and that further increases were expected in the immediate future. Demand for twine has increased slightly but the price alterations may be traced directly to the diminishing available supplies of the commodity.

Market Quotations

Paper Company Securities

New York Exchange closing quotations June 13, 1922:

STOCKS.	BID.	ASKED.
American Writing Paper Company, pref.	28	30
International Paper Company, com.	47½	48
International Paper Company, pref.; stamped.	68	68½
Union Bag & Paper Corporation.	63½	65

Because of the unusual conditions prevailing in the various markets quotations are more or less nominal.

Paper

F. o. b. Mill.		
Ledgers	10.50	@ 30.00
Bonds	8.50	@ 55.00
Writings		
Extra Superfine	14	@ 25
Superfine	13	@ 20
Tub Sized	10	@ 16
Engine Sized	9.00	@ 15.00
News-f. o. b. Mill		
Rolls, contract	3.50	@ 3.75
Rolls, transit	3.50	@
Sheets	4.00	@
Side Runs	3.25	@ 3.50
Book, Casd-f. o. b. Mill		
S. & S. C.	6.25	@ 7.25
M. F.	6.00	@ 7.00
Coated and Enamel	8.00	@ 10.00
Lithograph	8.00	@ 10.00
Tissues-f. o. b. Mill		
White, No. 1	.75	@ .80
Colored	1.00	@ 2.00
Anti-Tarnish	.75	@ .80
Silver Tissue	1.50	@ 2.70
Manila	.75	@ .80
Kraft-f. o. b. Mill		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	5.75	@ 6.25
Imported	6.00	@ 6.25
Screenings	2.50	@ 3.50
Manila		
No. 1 Jute	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.50	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75
Fiber Papers		
No. 1 Fiber	6.00	@ 6.25
No. 2 Fiber	5.00	@ 5.25
Common Bogus	1.75	@ 2.25
Card Middies	4.00	@ 5.00
Boards-per ton		
News	35.00	@ 45.00
Straw	40.00	@ 45.00
Chip	32.50	@ 40.00
Binder Board	60.00	@ 70.00
Spl. Ma. L.Chip	52.50	@ 62.50
Wood Pulp	75.00	@ 90.00
Container	60.00	@ 70.00
Wax Paper		
Self Sealing White		
28 and 30 lb.		
basis	10.00	@ 11.00
Waxed Tissue	1.40	@ 1.60
Glassine		
Bleached, basis 25		
lbs.	12.75	@ 13.25
Bleached, basis 20		
lbs.	13.75	@ 15.25
Mechanical Pulp		
(Ex-Dock.)		
No. 1 Imported	32.00	@ 38.00
(F. o. b. Pulp Mills.)		
No. 1 Domestic	28.00	@ 34.00
Chemical Pulp		
(Ex-Dock, Atlantic Ports.)		
Sulphite (Imported)		
Bleached	4.00	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
No. 2 Strong unbleached	2.25	@ 2.50
No. 1 Kraft	2.50	@ 3.00
Sulphate		
Bleached	3.90	@ 4.00
(F. o. b. Pulp Mill.)		
Sulphite (Domestic)		
Bleached	4.00	@ 4.50
Strong unbleached	2.60	@ 2.80
Easy Bleaching	2.60	@ 3.10
Sulphite	2.50	@ 2.80
News Sulphite	2.80	@ 3.10
Mitscherlich	2.80	@ 3.10
Kraft (Domestic)	2.50	@ 3.00
Soda Bleached	3.50	@ 3.75

Domestic Rags

Prices to Mill, f. o. b. N. Y.		
Shirt Cuttings		
New White, No. 1	10.25	@ 10.75
New White, No. 2	6.00	@ 6.50
Silesias, No. 1	6.00	@ 6.50
New Unbleached	8.50	@ 9.00
Washables	3.30	@ 3.60
Fancy	4.85	@ 5.25
Cotton-according to Grades		
Blue Overall	5.50	@ 6.00
New Blue	4.00	@ 4.50
New Black Soft	3.00	@ 3.25
New Light Sections	2.75	@ 3.00
O. D. Khaki Cuttings	3.25	@ 3.60
Men's Corduroy	2.50	@ 2.75
New Canvas	6.50	@ 7.00
New Black Mixed	2.25	@ 2.75
Old		
White, No. 1	5.60	@ 6.10
Repacked	4.50	@ 5.00
Miscellaneous		
White, No. 2	2.75	@ 3.00
Miscellaneous	2.10	@ 2.35
St. Soiled White	1.15	@ 1.25
Thirds and Blues		
Repacked	1.60	@ 1.75
Miscellaneous	1.15	@ 1.25
Black stockings	2.25	@ 2.50
Cloth Strippings	.95	@ 1.00
No. 1	.95	@ 1.00
No. 2	.85	@ .95
No. 3	.60	@ .70
No. 4	.60	@ .70
No. 5A	.90	nominal
Foreign Rags		
New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbleached Cottons	7.50	nominal
New White Cuttings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings	2.90	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	9.00	@ 11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cottons	1.50	nominal
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.00	@ 1.10
Shoppery	.90	@ .95
French Blues	2.00	nominal
Bagging		
Prices to Mill f. o. b. N. Y.		
Gunny No. 1		
Foreign	.80	@ .85
Domestic	.80	@ .85
Wool, Tares, light	1.00	@ 1.10
Wool, Tares, heavy	1.10	@ 1.15
Bright Bagging	.90	@ 1.00
No. 1 Scrap	.80	@ .90
Sound Bagging	.75	@ .85
Manila Rope		
Foreign	4.60	@ 4.85
Domestic	4.75	@ 5.00
New Bu. Cut	1.80	@ 1.90
Hessian Jute Threads		
Foreign	4.25	@ 4.50
Domestic	4.00	@ 4.25
Mixed Strings	.75	@ .85
Twines		
Cotton-(F. o. b. Mill)		
No. 1	.33	@ .35
No. 2	.31	@ .33
No. 3	.27	@ .29

India, No. 6 basis		
Light	.18	@ .19
Dark	.18	@ .19
B. C. 18 Basis	.39	@ .41
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute		
Light, 18 basis	.26	@ .27
Dark, 18 basis	.27	@ .29
Jute Wrapping, 3-6 Ply		
No. 1	.23	@ .24
No. 2	.31	@ .32
Tube Rope		
4-ply and larger	.15	@ .17
Fine Tube Yarn		
5-ply and larger	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India		
Basis	.16	@ .17
Paper Makers Twine		
Balls	.13	@ .15
Box Twine, 2-3 ply	.17	@ .18
Jute Rope	.13	@ .15
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings		
Hard, White, No. 1	3.85	@ 4.10
Hard, White, No. 2	3.40	@ 3.60
Soft, White, No. 1	3.40	@ 3.50
Flat Stock		
Stitchless	1.70	@ 1.80
Over Issue Mag.	1.70	@ 1.80
Solid Flat Book	1.60	@ 1.70
Crumpled No. 1	1.20	@ 1.30
Solid Book Ledger	2.00	@ 2.25
Ledger Stock	1.70	@ 1.85
No. 1 White News	1.65	@ 1.75
New B. B. Chips	.50	@ .55
Manilas		
New Env. Cut.	2.50	@ 2.75
New Cut No. 1	1.60	@ 1.75
Extra No. 1, Old	1.50	@ 1.60
Print	.85	@ .95
Container Board	.60	@ .70
Bogus Wrapper	.55	@ .60
Old Krafts, machine compressed		
Bales	1.70	@ 1.80
News		
Strictly Overissue	.70	@ .80
Strictly Folded	.55	@ .60
No. 1 Mixed Paper	.45	@ .50
Common Paper	.32½	@ .37½

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill		
All Rag Bond	35	@ 40
No. 1 Rag Bond	30	@ 35
No. 2 Rag Bond	18	@ 20
Water Marked Sulphite	10	@ 14
Sulphite Bond	9	@ 12
Sulphite Ledger	12	@ 13
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 22
No. 2 Fine Writing	12	@ 20
No. 3 Fine Writing	8	@ 12
No. 1 M. F. Book	6½	@ 7
No. 1 S. & S. C. Book	6¼	@ 7½
Coated Book	8¼	@ 10¼
Coated Label	8¼	@ 10¼
News-Rolls, mill	3¼	@ 4½
News-Sheets, mill	3¼	@ 4¼
No. 1 Manila	5¼	@ 6
No. 1 Fiber	5	@
No. 2 Manila	4¼	@
Butchers' Manila	4	@
No. 1 Kraft	7	@
No. 2 Kraft	6	@
Wood Tag Boards	4	@
Screenings	2¼	@
Boards, per ton		
Plain Chip	35.00	@ 40.00
Solid News	40.00	@ 45.00
Manila Lined	45.00	@ 52.50
Chip	45.00	@ 52.50
Container Line		
85 Test	60.00	@ 68.00
100 Test	65.00	@ 70.00

Old Papers

Shavings		
No. 1 hard White	3.25	@ 3.50
No. 1 Soft Shav.	3.00	@ 3.10
No. 1 Mixed	1.10	@ 1.25
No. 2 Mixed	1.00	@ 1.10
White Envel. Cuttings	3.25	@ 3.50
Ledgers and Writings		
No. 1	1.50	@ 1.75
Solid Books	1.35	@ 1.50
No. 1 Books, light	.90	@ 1.00
Blanks	1.75	@ 2.00
Ex. No. 1 Manila	1.90	@ 2.00
Manila Envelope		
Cuttings	2.00	@ 2.10
No. 1 Manilas	.90	@ 1.00
Folders News (over issue)	.80	@ .85
Old Newspaper	.70	@ .75
Mixed Papers	.65	@ .70
Straw Clippings	.70	@ .75
Binders Clippings	.70	@ .75
Kraft	1.75	@ 2.00
New Kraft Cuts	2.00	@ 2.10
Roofing Stock, f.o.b. Chicago, Net Cash		
No. 1	22.00	@
No. 2	20.00	@
No. 3	18.00	@
No. 4	18.00	@

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.10	@ .60
Ledgers	.15	@ .40
Writings		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F.	.06	@ .09
Book, S. S. & C.	.08	@ .15
Book, Coated	.08	@ .15
Coated Lithograph	.10	@ .15
Label	.08	@ .15
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul., No. 1	.08	@ .08½
Manila No. 2	.07½	@ .08
No. 2 Kraft	—	@ .08½
No. 1 Kraft	—	@ .09½
Common Bogus	.02½	@ .03
Straw Board	35.00	@ 45.00
News Board	32.50	@ 35.00
Chip Board	27.50	@ 32.00
Wood Pulp Board	90.00	@ 100.00
(Carload Lots)		
Binder Boards		
Per ton	\$65.00	@ 75.00
Carload lots	60.00	@ 65.00
Tarred Felts		
Regular	48.00	@ 50.00
Slaters	54.00	@ 56.00

Best Tarred, 1-ply (per roll)	1.35	@ 1.50
Best Tarred, 2-ply (per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.		
Gunny No. 1		
Foreign	.75	@
Domestic	.70	@
Manila Rope	4.00	@ 4.50
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Burlap	.75	@ .80
New Burlap Cuttings	1.75	@ 2.10

Old Papers

F. o. b. Phila.		
Shavings		
No. 1, Hard		
White	4.00	@ 4.25
No. 2, Hard		
White	3.50	@ 3.75
No. 1 Soft White	3.35	@ 3.50
No. 2 Soft White	2.00	@ 2.25
No. 1 Mixed	1.50	@ 1.75
No. 2 Mixed	1.00	@ 1.25

(Continued on page 66)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JUNE 10, 1922

SUMMARY

News print	1,918 rolls
Wrapping	309 bls., 79 rolls
Printing paper	104 cs.
Cigarette paper	2,019 cs.
Wall paper	1,328 rolls, 2,452 bls., 2 cs.
Hangings	26 bls., 1 cs.
Photo paper	9 cs.
Tissue paper	10 bls., 7 cs.
Filter paper	13 cs.
Drawing paper	12 cs.
Blue print paper	97 rolls
Letter paper	4 cs.
Writing paper	37 cs.
Miscellaneous paper	352 bls., 55 pgs., 6,968 rolls

CIGARETTE PAPER

R. J. Reynolds Tobacco Company, Collamer, Bordeaux, 760 cs.
American Tobacco Company, by same, 1,000 cs.
American Tobacco Company, Collamer, St. Nazaire, 50 cs.
The Surbrug Company, Paris, Havre, 28 cs.
De Mauduit Paper Corp., Providence, Marseilles, 60 cs.
De Mauduit Paper Corp., Bankdale, Marseilles, 50 cs.
British-American Tobacco Company, Carmania, Liverpool, 49 cs.
British-American Tobacco Company, Cedric, Liverpool, 22 cs.

WALL PAPER

F. G. Prager Company, Lapland, Antwerp, 1,328 rolls.
R. F. Lang, Pres. Fillmore, Bremen, 2,452 bls.
R. F. Downing & Co., Kroonland, Antwerp, 2 cs.

PAPER HANGINGS

A. C. Dodman, Jr., Baltic, Liverpool, 5 bls.
W. H. S. Lloyd & Co., Montauk, London, 7 bls., 1 cs.
A. C. Dodman, Jr., Cedric, Liverpool, 14 bls.

PHOTO PAPER

Gevaert Company of America, Lapland, Antwerp, 9 cs.

TISSUE PAPER

F. C. Strype, Baltic, Liverpool, 1 bl.
Meadows, Wye & Co., by same, 7 cs.
R. Hoe, Montauk, London, 7 bls.
Meadows, Wye & Co., Carmania, Liverpool, 2 bls.

FILTER PAPER

E. H. Sergeant & Co., Eastern Breeze, Gothenburg, 10 cs.
H. Reeve-Angel & Co., Montauk, London, 8 cs.

DRAWING PAPER

H. Reeve-Angel & Co., Montauk, London, 8 cs.
Keuffel & Esser, Reliance, Hamburg, 4 cs.

BLUEPRINT PAPER

Keuffel & Esser, Reliance, Hamburg, 97 rolls.

LETTER PAPER

L. Bamberger & Co., Chicago, Havre, 4 cs.

WRITING PAPER

L. Dejonge & Co., Providence, Marseilles, 37 cs.
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PRINTING PAPER

Oxford University Press, Cedric, Liverpool, 7 cs.
B. F. Drakenfeld & Co., Carmania, Liverpool, 13 cs.
Perkins, Goodwin & Co., G. Verdi, Genoa, 9 cs.
Perkins, Goodwin & Co., Algeria, Glasgaw, 5 cs.
W. F. Ethrington, by same, 70 cs.

NEWS PRINT

Parsons & Whittemore, Natirar, Hango, 280 rolls.
Irving National Bank, by same, 381 rolls.
Chemical National Bank, Riol, Hamburg, 114 rolls.
Parsons & Whittemore, Eastern Star, Kotka, 1,143 rolls.

WRAPPING PAPER

Hudson Trading Company, Drottningholm, Gothenburg, 57 bls., 4 rolls.
Wilkinson Brothers & Co., Inc., Sarcoxie, Rotterdam, 75 rolls, 152 bls.
Southern Pacific Company, Ville de Djiboute, Genoa, 100 bls.

PAPER.

Meyer & Marks Company, Baltic, Liverpool, 4 bls.
A. Murphy & Co., La Savoie, Havre, 11 bls.
Windowphanie Company, by same, 55 pgs.
H. Reeve-Angel & Co., Natirar, Hango, 9 cs.
Republic Bag & Paper Company, Riol, Hamburg, 913 rolls.
Irving National Bank, Eastern Breeze, Gothenburg, 102 bls., 878 rolls.
Wilkinson Brothers & Co., Inc., by same, 166 bls., 4,760 rolls.
M. O'Meara Company, by same, 8 bls., 363 rolls.
C. L. Robinson, by same, 61 bls., 54 rolls.
A. E. MacAdams Company, by same, 18 rolls.

RAGS, BAGGINGS, ETC.

Ladenburg, Thalman & Co., Kroonland, Antwerp, 370 bls. flax waste.
Ladenburg, Thalman & Co., Baltic, Liverpool, 172 bls., thread waste.
Ayres Lane Company, East Cape, Bombay, 200 bls. cotton waste.
National City Bank, Alness, Liverpool, 248 bls. bagging.
S. Birkenstein & Son, Montauk, London, 63 bls. bagging.
R. F. Downing & Co., by same, 55 bls. rags.
Irving National Bank, Riol, Hamburg, 13 bls. rags, 42 bls. linen thread.
Castle, Gottheil & Overton, by same, 89 bls. rags.
National City Bank, by same, 86 bls. rags.
D. M. Hicks, Inc., Chicago, Havre, 23 bls. new cuttings.
E. J. Keller Company, Inc., by same, 132 bls. bagging.
Castle, Gottheil & Overton, by same, 251 bls. rags.
National City Bank, Cedric, Liverpool, 84 bls. thread waste.
Brown Brothers & Co., by same, 7 bls. thread waste.
Hanover National Bank, by same, 28 bls. rags.

OLD ROPE

Brown Brothers & Co., Graciana, Newcastle, 85 coils.
Mechanics & Metals National Bank, Graciana, Leith, 106 coils.
Mechanics & Metals National Bank, Montauk, London, 141 coils.
Ellerman Wilson Lines, Idaho, Hull, 50 coils, 10 bls.
Brown Brothers & Co., by same, 256 coils, 14 bags.
International Purchasing Company, Paris, Havre, 115 coils.
First National Bank of Boston, Ville de Djiboute, Genoa, 248 bls.
First National Bank of Boston, Kroonland, Antwerp, 40 bls., 55 coils.
Ladenburg, Thalman & Co., by same, 117 coils.

CHINA CLAY

National City Bank, Chicago City, Bristol, 120 casks.

WOOD PULP

M. Gottesman & Co., Inc., Eastern Breeze, Gothenburg, 750 bls., 152 tons.
Mechanics & Metals National Bank, by same, 500 bls., 101 tons.
Scandinavian-American Trading Company, by same, 1,250 bls., 254 tons.
Irving National Bank, Eastern Star, Hango, 4,244 bls., 674 tons.
F. Euders & Co., Caronia, Hamburg, 250 bls.
Tidewater Papermills Company, Nova Queen, Liverpool, N. S., 8,224 bls., 822 tons.
Lagerloef Trading Company, Natirar, Hango, 4,517 bls., 520 tons wood pulp boards.
Irving National Bank, by same, 547 bls., 83 tons pulp.

WOOD FLOUR

Alkar Chemical Company, Dropsa, Hamburg, 852 bags.
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BOSTON IMPORTS

WEEK ENDING JUNE 10, 1922

J. A. & W. Bird & Co., Halizones, Buenos Aires, 819 bags. casing.
G. H. Sweetman, Natirar, Hango, 73 bls. news print.
H. Reeve-Angel & Co., by same, 153 bls. news print.
Irving National Bank, by same, 6,021 bls., 1,050 tons wood pulp.
Lagerloef Trading Company, by same, 2,963 bls., 502 tons wood pulp.
Lagerloef Trading Company, Eastern Star, Hango, 640 bls., 107 tons wood pulp.
Irving National Bank, by same, 2,862 bls., 478 tons wood pulp.
Price & Pierce, Ltd., by same, 305 bls. wood pulp.
R. F. Hammond, Louisiana, Gothenburg, 1,000 bls., 200 tons wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JUNE 10, 1922

Irving National Bank, Eastern Breeze, Helsingfors, 8,507 bls., 1,447 tons wood pulp.
Lagerloef Trading Company, Eastern Breeze, Helsingfors, 2,500 bls., 471 tons wood pulp.
Lagerloef Trading Company, Eastern Breeze, Gothenburg, 2,750 bls., 558 tons wood pulp.
Mechanics & Metals National Bank, by same, 750 bls., 152 tons wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 10, 1922

Lagerloef Trading Company, Eastern Breeze, Helsingfors, 1,200 bls., 203 tons wood pulp.
Irving National Bank, by same, 2,795 bls., 432 tons wood pulp.
Ichansan, Wales & Spare, Inc., Eastern Breeze, Gothenburg, 175 bls., 35 tons wood pulp.
Lagerloef Trading Company, Eastern Star, Hango, 3,928 bls., 437 tons wood pulp.
Parsons & Whittemore, by same, 219 bls. news print.
Parsons & Whittemore, Eastern Star, Kotka, 221 reels news print.
Hudson Trading Company, Carlshelm, Gothenburg, 1,116 rolls wrapping paper.
Castle, Gottheil & Overton, Slavic Prince, London, 112 bls. rags.
Dill & Collins, by same, 309 bls. waste paper.

Provincial Forests Closed by Government

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., June 12, 1922.—The Provincial Government has passed an Order-in-Council for the closing of all the forests in the province, both public and private, except to those holding a special permit for entering them. This has been done as a precaution against fire being started by fishermen, campers, and others. The

Order allows the Government to take the most drastic action in the interests of forest protection that has ever been applied on this continent.

This will be appreciated when the vast forest area included in the province is remembered, and shows that the Government is determined to stop at nothing to protect what is regarded as the province's most valuable asset.

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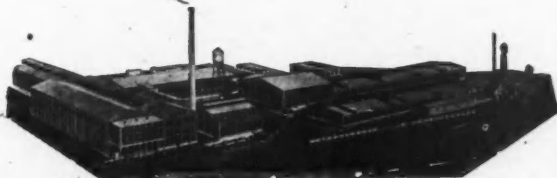
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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, JUNE 14, 1922.

ALUM.—With demand still slack, alum continues to be quoted at 3.50 cents a pound for the lump, 3.65 for the ground and 3.90 for the powdered. Mills have no difficulty in securing adequate supplies, and no change is expected in this market before fall.

BLEACHING POWDER.—At 1.60 cents a pound, bleach fails to register any pronounced activity. This is attributed by dealers to the beginning of summer, and it is expected that the curtailment of production during this period will make for a firmer market within the next ninety days.

BLANC FIXE.—Demand has not dropped off much for wither blanc fixe or satin white during the past week. There has been a light activity in evidence and the quoted price of \$40 to \$50 a ton for blanc fixe pulp has held. The dry is still listed at 3.50 to 3.75 cents a pound.

CASEIN.—Owing to a lack of supplies an adequate market for casein has hardly been demonstrated. Because of this fact and because of the Senate's endorsement of the tariff bill to place a duty of 4.00 cents a pound on casein, dealers' views have been noticeably higher than the 10.00 cents per pound recently quoted.

CAUSTIC SODA.—Caustic is easy at 3.26 a pound and the increased export consumption serves to balance the slightly diminished domestic use of the product.

CHINA CLAY.—Dealers in this commodity say that despite the quantities of China clay on the ground in England, a decided change in the market is expected within the next thirty to sixty days. Unwashed is quoted at \$6 to \$8 a ton, washed \$8 to \$10 and English clay \$13 to \$18.

LIQUID CHLORINE.—This market is spotty, quotations ranging from 4.50 cents a pound in tank cars to 7.00 cents a pound in the 100-lb cylinders. The over supply of chlorine is gradually being depleted, however, due to the fact that there is much less production than existed in the earlier months of the year.

ROSIN.—Despite the season of the year, rosin merchants have, during the past week enjoyed a normal business. The product is quoted at the firm price of \$5.20 per 280-lb. barrel on grades E, F and G. Foreign demand is still strong.

SALTCAKE.—Several weeks ago it was predicted in this column that the slack production of acids would have a strengthening effect on the saltcake market. This condition now holds and supplies are being taken up faster than they can be made. Chrome cake is listed a \$18 a ton and acid cake at \$20 to \$21.

SATIN WHITE.—With a steady demand from the mills, satin white has been holding its own at 1.50 cents a pound, contract. This price is considered fairly firm and is not apt to alter appreciably before August.

SULPHUR.—The sulphur market shows a very gradual week-by-week improvement in tone, but prices have held firm for many months. The New York price of \$18 to \$20 still holds, while brimstone on the ground is quoted at \$15 to \$17. Lowered navigation rates have slightly stimulated consumption during recent weeks.

STARCH.—The paper maker's grade of starch is now listed at 2.47 and 2.75 cents a pound for bag and barrel quantities, respectively, while pearl starch is quoted at 2.37 and 2.65. The market is firm, and while prices show a strengthening tendency, they are not expected to fluctuate materially in either direction.

SULPHATE OF ALUMINA.—Since the West has entered the aluminum sulphate market, local dealers have not realized much profit at the quoted of 1.40 to 1.50 cents a pound, works. Iron free has been selling for 2.15 to 2.35 cents a pound, and the irregular demand for both grades has held the market in somewhat of a rut.

Market Quotations

(Continued from page 63)

Solid Ledger Stock. 2.25 @ 2.50	New Black Soft. .03 @ .03 1/4
Writing Paper. 1.80 @ 2.00	New Light Sec- onds02 @ .02 1/4
No. 1 Books, heavy. 1.60 @ 1.75	Khaki Cuttings.02 1/4 @ .03 1/4
No. 2 Books, light. 1.40 @ 1.50	Corduroy02 @ .02 1/2
No. 1 New Manila. 2.75 @ 3.00	New Canvas.07 @ .07 1/2
No. 1 Old Manila. 1.50 @ 1.75	New Black Mixed 2.75 @ 3.00
Container Manila. 1.00 @ 1.10	Old
Old Kraft. 2.00 @ 2.25	White, No. 1—
Overissue News.75 @ .80	Repacked06 @ .06 1/4
Old Newspaper.50 @ .60	Miscellaneous04 1/4 @ .04 1/4
No. 1 Mixed Paper.45 @ .50	White, No. 2—
Common Paper.40 @ .50	Repacked03 @ .03 1/4
Straw Board, Chip.40 @ .45	Miscellaneous02 1/4 @ .02 1/4
Binders' Bd. Chip.40 @ .45	Thirds and Blues—
Domestic Rags—New.	Repacked 1.65 @ 1.80
Price to Mill, f. o. b. Phila.	Miscellaneous 1.40 @ 1.55
Shirt Cuttings—	Black Stockings. 1.75 @ 2.25
New White, No. 1 .09 1/4 @ .09 1/4	Roofing Stock—
New White, No. 2 .05 @ .06	No. 190 @ 1.00
Silesias, No. 1.04 1/4 @ .05	No. 280 @ .90
New Unbleached. .08 1/4 @ .08 1/4	No. 370 @ .80
Washables03 @ .03 1/4	No. 470 @ .80
Fancy04 1/4 @ .05	No. 5A. nominal
Cottons—according to grades—	C. nominal
Blue Overall.04 @ .04 1/4	
New Blue.02 @ .02 1/4	

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper	Wood, Vat Lined. .47.25 @
Bonds09 1/4 @ .40	Filled News Board. .37.50 @
Ledgers11 1/4 @ .12 1/4	Solid News Board. .42.00 @ 45.00
Writings13 @ .05	S. Manila Chip. 52.50 @
Superfine13 @ .18	Pat. Coated. 70.00 @ 75.00
Fine08 @ .09 1/4	
Books, S. & S. C.07 1/4 @ .08 1/4	Old Papers
Books, M. F.07 @ .07 1/4	Shavings—
Books, coated.10 1/4 @ .12 1/4	No. 1 Hard White 3.50 @ 3.75
Label10 1/4 @ .12 1/4	No. 1 Soft White 3.00 @ 3.25
News sheets. 3.05 @ —	No. 1 Mixed. 1.50 @ 1.75
News, rolls. 3.75 @ 4.00	Ledgers & Writings .03 1/4 @ —
Manila—	Solid Books 1.75 @ 2.00
No. 1 Manila \$6.75 @	Blanks 1.30 @ 1.45
No. 1 Fibre. 6.00 @ 6.25	No. 2 Books Light. .60 @ .70
No. 1 Jute. 8.50 @ 8.75	Folded News, over- issues \$11.25 @ 12.50
Kraft Wrapping. 7.00 @ —	Mixed paper. 47.50 @ 50.00
Common Bogus. 3.00 @ —	Gunny Bagging.70 @ .75
Boards	Manila Rope. 4.25 @ 4.50
(Per Ton Destination)	Common Paper.35 @ .40
Chip \$33.50 @ 37.00	Old News.80 @ —
News, Vat Lined. .35.00 @ 37.00	Old Kraft. 1.75 @ 1.80

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper	Sulphite, bleached. 90.00 @ 95.00
(Mill Prices to Jobbers f. o. b. Mill)	Sulphate 70.00 @
Bond—	Old Waste Papers
Sulphite11 @ .12 1/4	(In carload lots, f. o. b. Toronto)
Light tinted.12 @ .13 1/4	Shavings—
Dark tinted.13 1/4 @ .15	White Env. Cut. 3.75 @ —
Ledgers (sulphite).13 @ .13	Soft White Book
Writing10 1/4 @ .13 1/4	Shavings 3.40 @ —
News, f. o. b. Mills—	White Bl'k News 1.70 @ —
Rolls (carloads). 3.50 @ —	Book and Ledger—
Sheets (carloads). @ 4.25	Flat Magazine and
Sheets (2 tons or over) @ 4.50	Book Stock (old) 1.70 @ —
Book—	Light and Crum- pled Book Stock 1.55 @ —
No. 1 M. F. (car- loads) 9.50 @ —	Ledgers and Writ- ings 1.95 @ —
No. 2 M. F. (car- loads) 8.50 @ —	Solid Ledgers. 1.95 @ —
No. 3 M. F. (car- loads) 8.00 @ —	Manila—
No. 1 S. C. (car- loads) 10.00 @ —	New Manila Cut. 1.70 @ —
No. 2 S. C. (car- loads) 9.00 @ —	Printed Manilas.90 @ —
No. 1 Coated and litho. 14.00 @ —	Kraft 2.25 @ —
No. 2 Coated and litho. 13.00 @ —	News and Scrap—
No. 3 Coated and litho. 12.25 @ —	Strictly Overissue .90 @ —
Coated and litho., colored 14.25 @ —	Folded News.80 @ —
Grey 4.50 @ —	No. 1 Mixed Pa- pers60 @ —
White Wrap 5.00 @ —	Domestic Rags—
"B" Manila 5.50 @ —	Price to mills, f. o. b. Toronto.
No. 1 Manila 6.75 @ —	Per lb.
Fibre 6.75 @ —	No. 1 White shirt cuttings09 1/4 @ .10
Kraft, M. F. 8.00 @ —	No. 2 White shirt cuttings05 1/4 @ .05 1/4
M. G. 8.15 @ —	Fancy shirt cut- tings04 1/4 @ .04 1/4
Pulp	No. 1 Old whites .04 @ .02 1/4
(F. o. b. Mill)	Thirds and blues02 @ .02 1/4
Ground wood. \$27.50 @ 35.00	Per cwt.
Sulphite easy bleach- ing. 60.00 @ 65.00	Black stockings. 2.00 @ 2.25
Sulphite news grade. 50.00 @ 60.00	Roofing stock:
	No. 1 1.35 @ —
	No. 2 1.20 @ —
	Roofing stock:
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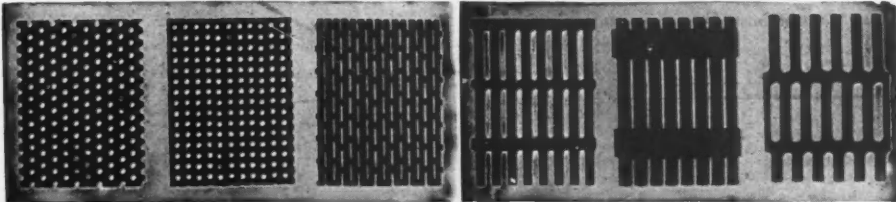
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WANTED: One calender man on glassine and book papers. Good pay to right party. State whether married or single. Previous employment. All correspondence treated confidentially. Address, Box 5126, care Paper Trade Journal. Je-15

WANTED: Boss Machine Tender and Beater Engineer for Mill making container board. Must be A-1 man, strictly sober and reliable. None other need apply. State wages and references in first letter. Address, Box 5136, care Paper Trade Journal. Je-15

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

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

YOUNG MAN with experience to direct manufacture and sales of Duplex Coffee Bag. Address, Box 5165, care Paper Trade Journal. Je-15

WANTED—Experienced Beaterman for Kraft and Manila Wrapping Papers. Apply with full particulars to Box 5149, care Paper Trade Journal. Je-15

WANTED—Capable and reliable Beater Engineer for Mill well located in middle west. Manufacturers of sulphite papers and specialties. Experience necessary on colors. Good wages. Three tour day. Address, Box 5150, care Paper Trade Journal. Je-15

WANTED—By large manufacturers with New York office and warehouse, young man about 25, who is sufficiently ambitious and progressive to make himself useful in every capacity from the ground up with the ultimate intention of being of service in the sales and executive end of the business. State salary and experience. Address, Box 5151, care Paper Trade Journal. Je-15

WANTED—An energetic experienced Sulphite Superintendent for 50-ton mill making bleached and unbleached pulp. Tower system. Good opportunity for the right man. Give references. State salary. Address, Box 5152, care Paper Trade Journal. Je-15

WANTED: First class machine tender and back-tender, experienced on felt and asbestos papers. Sober, industrious men. References, age, married or single in first letter. Address, Box 5169, care Paper Trade Journal. Je-29

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

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

A REAL GOOD ONE: If you are a Mill Agent or Salesman calling on the fine paper houses. We have a good proposition to offer you to take our line on in conjunction with your own. We do not want to interfere with your present connection in any way, but offer you a wonderful chance to increase your salary or profits by adding a very necessary and essential line, which sells itself, to your present line. No financing. No stock to carry. We want only one man on every territory. Write for particulars. Address, Box 5172, care Paper Trade Journal. Je-15

WANTED: Superintendent to take charge of a mill making tissues and crepe paper. In replying state age and experience. Address, Box 5173, care Paper Trade Journal. Je-15

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

HELP WANTED

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

PAPER BAGS: Experienced Adjuster on Satchel Bottom Bag and Sack Machines also machine tender. Miller, Tompkins & Co., 485 Washington St., New York, N. Y. Je-15

HAVE POSITIONS OPEN for Machine Tenders and Back Tenders on Book Papers; two shifts. State age and experience. Address, Box 5184, care Paper Trade Journal. Je-15

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in the East making the highest class of Whites and Colors. Good position for right man. Address, Box 5186, care Paper Trade Journal. Je-15

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

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

MASTER MECHANIC desires position. Twenty years' experience in mills of all grades of paper and pulp, also on steam, water and electric power. Best references. Address, Box 5014, care Paper Trade Journal. Je-15

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

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

SUPERINTENDENT now employed as such work who had practical experience on Cylinder, Harper, Fourdrinier and Combination machines, well posted on nearly all grades of paper, also practical experience on ground wood and sulphite, also mill construction and upkeep of same. Past records show good results. Would prefer commission proposition, also invest capital with reputable company. Address, Box 5122, care Paper Trade Journal. Jy-6

SITUATIONS WANTED

WANTED—Position as Superintendent or Assistant Superintendent. Fifteen years' experience, used to box board, container board, color and straw. Knows how to handle help and keep up repairs. Good references. Address, Box 5157, care Paper Trade Journal. Je-22

YOUNG MAN, 25, married, wishes to connect with Paper Mill. Has had experience in Paper Mill cost accounting, pay-rolls and mill systems; also selling experience. At present calling on printers and publishers. Feels qualified to fill almost any inside position or be useful in sales Department. Address, Box 5145, care Paper Trade Journal. Je-15

PRACTICAL PAPER MAKER wants position as Boss Beater Engineer or Assistant Superintendent. Up to date on most all grades wood, rag and old papers. Fourdrinier and Cylinder experience on machine as well as beaters. Married and can give best references from best mills in the country. Address, Box 5155, care Paper Trade Journal. Je-15

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

GRADUATE MECHANICAL ENGINEER, aged 35, desires position as Plant Engineer or Assistant Superintendent, where maintenance and improvements, relating to plant as well as production, would be chief duties. Thoroughly familiar with paper working and printing machinery. Address, Box 5159, care Paper Trade Journal. Je-22

MANUFACTURER of a novel paper specialty suitable for shopping bags and kindred lines, for shipping tags, for files and book covers, etc., desires to correspond with able distributors. Address, Box 5160, care Paper Trade Journal. Je-22

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

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

SALESMAN, 34 years of age, well acquainted with New York Jobbing and Boxboard Trade, wishes to make connection with Mill in New York Office. Have exceptional knowledge of Book Papers and Boards. Address, Box 5164, care Paper Trade Journal. Je-15

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

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

SITUATIONS WANTED

UNIVERSITY GRADUATE, executive ability, extensive experience in mills and wholesale paper trade, seeks position of trust and responsibility. Highest references. Address, Box 5168, care Paper Trade Journal. Je-15

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

POSITION WANTED by Beaterman, one who is experienced in the making of nearly all good grades of paper. Address, Box 5176, care Paper Trade Journal. Je-15

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

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

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

ACCOUNTANT: Systems installed for 2,500 accounts, \$300,000 sales; jobber in city of \$5,000; seven years. Can handle double this volume of accounts with accuracy. Efficient supervision of expenses, sales and credits. Expert buyer paper products, twine, stationery, toys, general merchandise and store fixtures. Address, Box 5180, care Paper Trade Journal. Je-29

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

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

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Je-15

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FOR SALE: 14 Calender Rolls, 58" face, 3' to 14" diameter. 2 No. 1 Claffin Engines. 1 small Jordan Engine. 1 6" Horizontal Water Pump. 2 Air Fans. Complete triple-deck frames for 4 Drvers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

FOR SALE: One Dietz Toilet Machine, will handle 76" Jumbo Rolls, cut sheets 4 1/2 x 5. Machine has no slitter bars, but have slitters. Address, Box 5135, care Paper Trade Journal. Je-22

FOR SALE

FOR SALE—One 36 x 48" Kidder, 2 color, rotary, roll product press. Never used. Address, Box 5161, care Paper Trade Journal. Je-15

FOR SALE: 86" Fourdrinier Tissue Paper machine consisting of Packer Screen Fourdrinier, two Presses, twelve dryers, stack of calenders, reel and rewinder. This machine now running, but delivery could be made early in July. Address, Box 5181, care Paper Trade Journal. Je-29

PAPER MILL MACHINERY FOR SALE:
1—Morris Pump No. 4, Single Horizontal, Centrifugal Pump, 5" suction, 4" discharge.
1—Ball Engine 12" x 15", horizontal 36" x 12".
1—Ingersoll-Rand Compressor 10" x 10".
1—Stilwell-Pierce-Smith Compressor 10" x 10".
1—Beggs Engine 11" x 15" horizontal.
3—Morton Poole iron tub Beaters, 1,000 lb. Umphertons 64" x 16".
3—Rice, Burton & Falls, wood tube Beaters, 511 lb.
1—Mills Beater, wood tub, 1,600 lb. Universal with 2 70 x 14" pulleys, direct power.
1—Clark rewinder, 44".
1—Waldron ribbing machine, 36".
1—Steel Tank 48" diameter.
1—Mixer 54" x 48" with agitator.
1—Century Motor, 5 HP, Single Phase, 60 Cycle.
1—Eric City Engine 18" x 22". Apply to French Process Cigarette Paper Mills, 170 Cornelison Avenue, Jersey City, New Jersey. Je-29

FOR SALE: Kaukauna 72" Paper Slitter and rewinder with 30 knives. Will sell with or without motor. Any reasonable offer will be accepted. Machine guaranteed to be in first class condition. The F. C. Traver Paper Company, Chicago, Illinois. Je-15

FOR SALE: Monitor Multiplex Power Punch with 220-volt direct-current motor attached. 25" Monitor Extra Heavy Hard Die Power Perforator with feed Gauge. Back roll delivery and attached motor. Both were purchased new and have not been used. Low prices will be made for quick sale. Wm. B. Livermore, 290 Franklin street, Boston, Mass. Je-15

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MISCELLANEOUS

SWIFT, GEORGE W., JR., Designer and Manufacturer of Special Machinery for Manufacturing and Printing Paper Goods. Bordentown, N. J. 8-24-22

WANTED: Paper sheeter, Hamblet preferred, about 64" wide with roll stands and layboy; new or second-hand provided up to date and operation guaranteed. Advise full details and price. Address, Box 5182, care Paper Trade Journal. Je-22

AN EXCELLENT OPPORTUNITY is offered for some one to acquire an active as well as financial interest in important Paper Stock company on the Pacific Coast, headquarters San Francisco, five branches. Principal requirements unimpeachable character and business experience. State amount available for investment. Address, Box 5183, care Paper Trade Journal. Je-15

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For further information, pamphlet, etc., address Chemistry Department, University of Maine, Orono, Me.

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REAM CUTTER—One 48" Acme.
SUPER CALENDERS—One 45", one 42", one 36" Holyoke.
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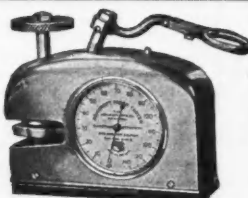

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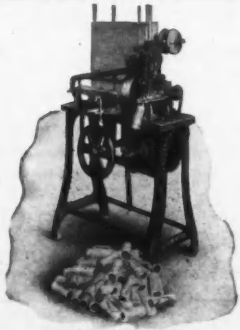
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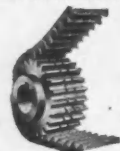
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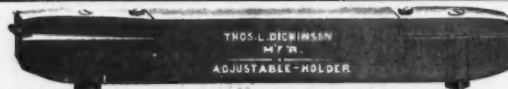
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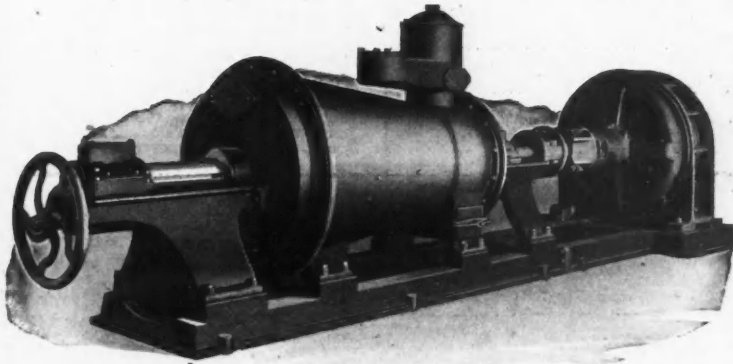
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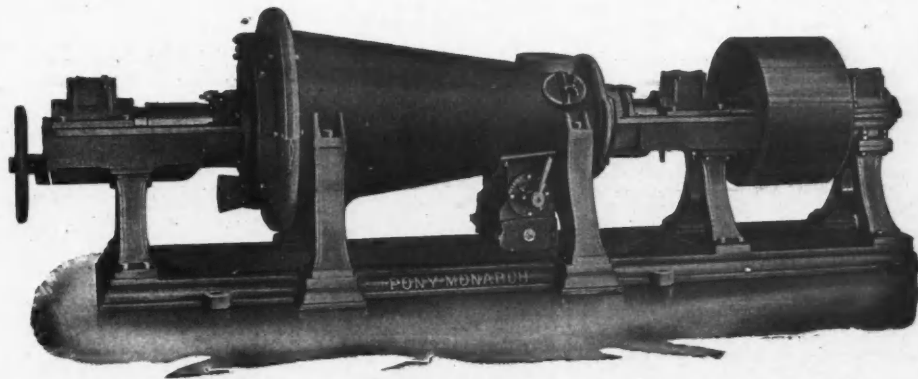
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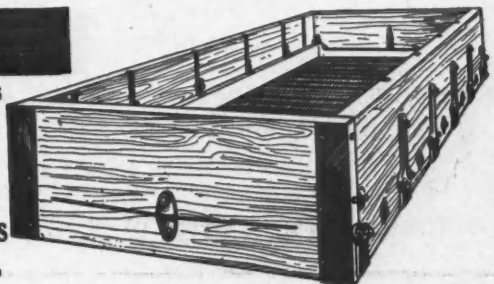
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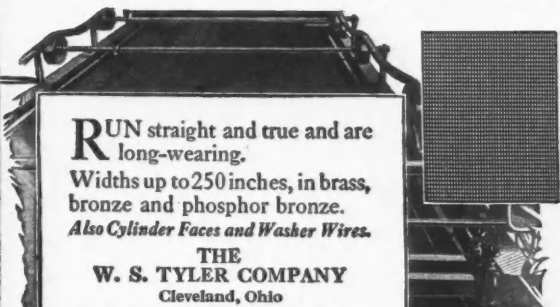


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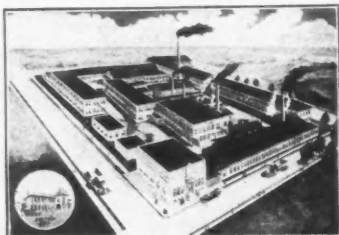


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