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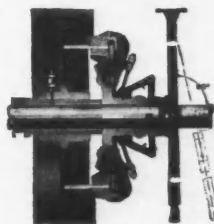
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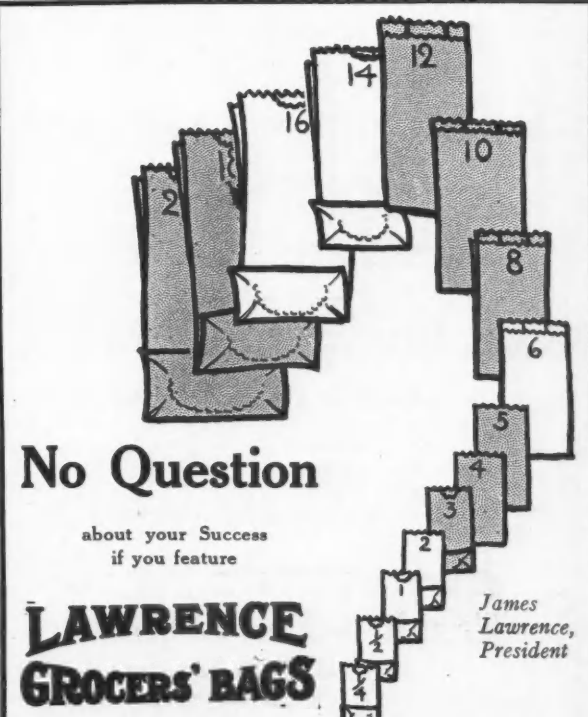
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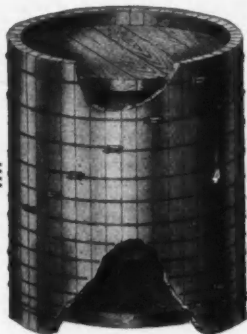
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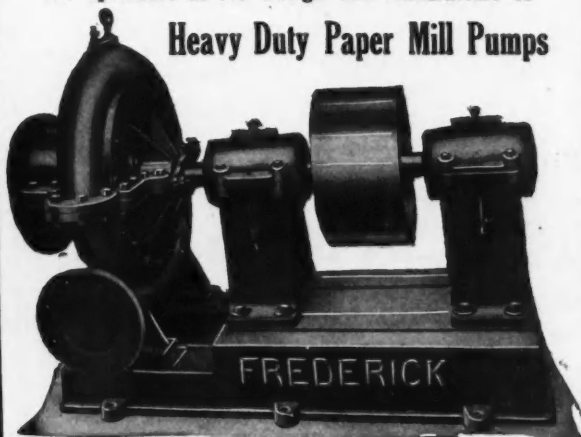
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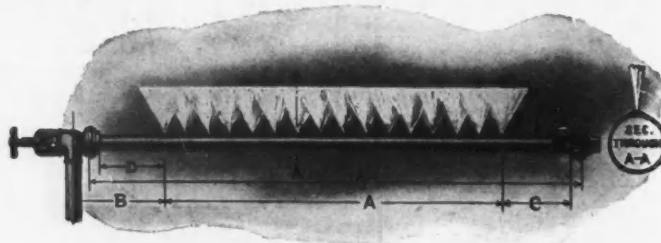


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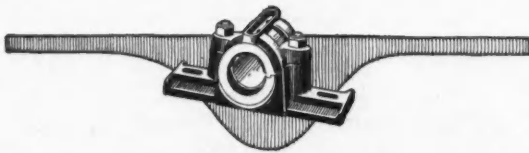
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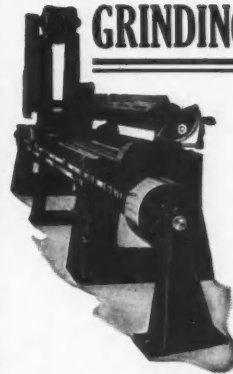
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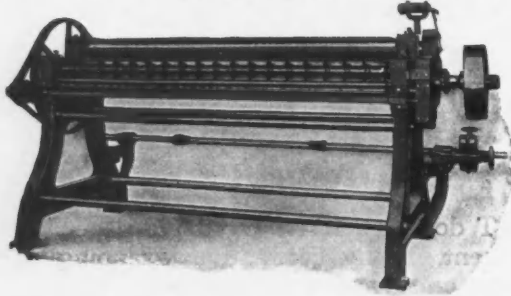
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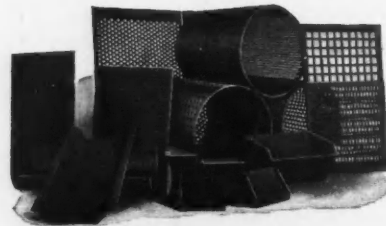
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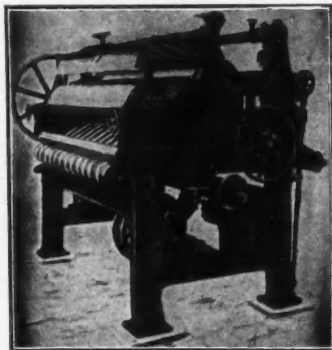
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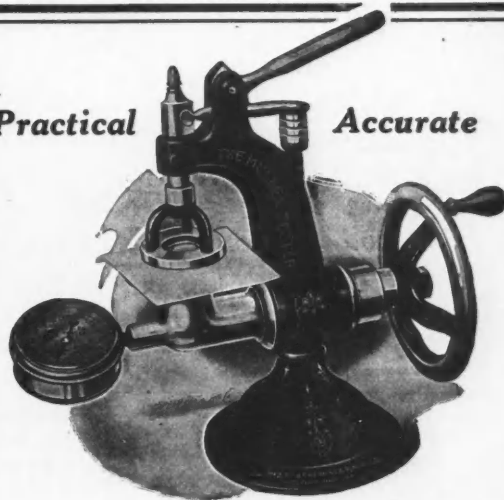
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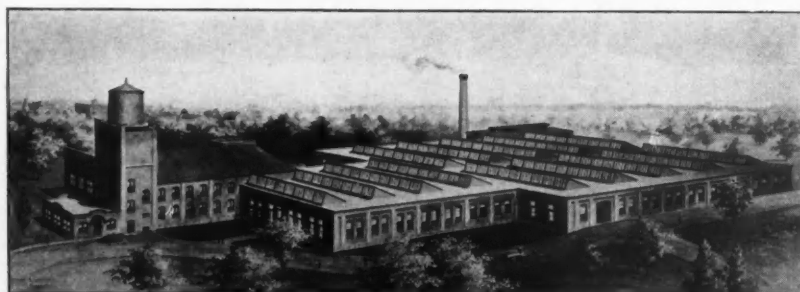
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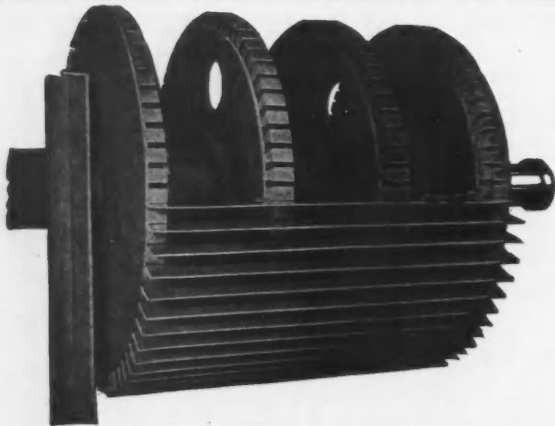
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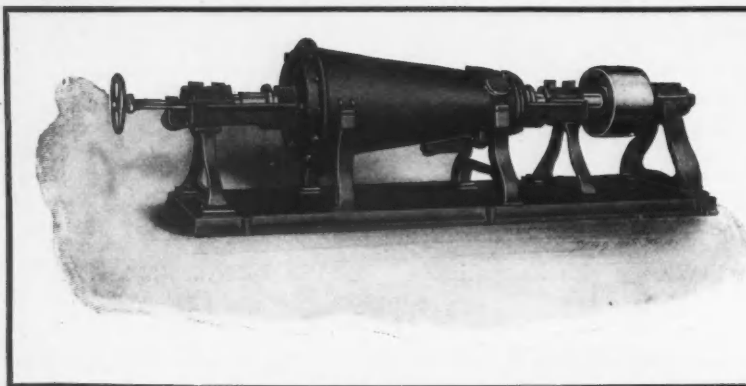
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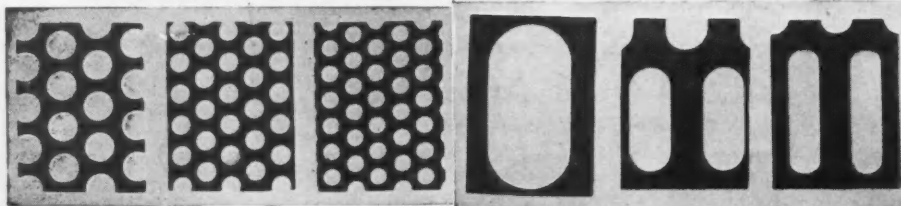
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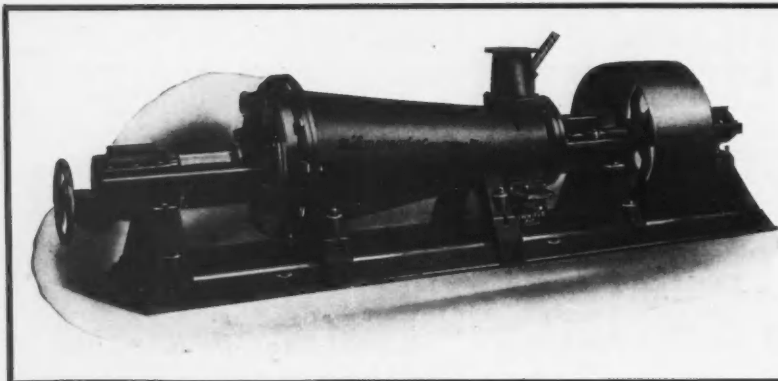
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PRODUCTION OF ALL PAPER DURING MONTH OF AUGUST

According to Figures Just Furnished By the Federal Trade Commission Mill Stocks at the End of the Month of News Print Equaled Five Days' Average Output, Book Paper Thirteen Days' Average Output, Paper Board Nine Days' Average Output, Wrapping Paper Twenty-Six Days' Average Output and Bag Paper Seven Days' Average Output—Stocks of Other Varieties.

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., October 4, 1922.—The attached tabulation is a summary of production, shipments, and stocks of paper mills in the United States, as reported to the Federal Trade Commission, for the month of August, 1922. This summary is compared with the month of August, 1918 to 1921, inclusive.

The average production for all grades, except boxboard, is based upon the production for the years 1917 to 1921, inclusive, and the average stocks are based upon the stocks carried for the years 1918 to 1921, inclusive.

Figures for boxboard prior to March, 1920, were included in paperboard. The average production and stocks for boxboard are based upon the figures tabulated during the period March, 1920, to December 31, 1921.

The production has been classified for convenience into 12 grades, according to the grades of paper manufactured by the reporting mills. Some mills making several grades appear in more than one group which causes duplication in the body of the tonnage tables in the number of mills.

For each grade the number of mills includes all mills commonly operating on that grade, regardless of whether they produced any tonnage of that particular grade during the month. In other words, it includes all mills reporting either production or merely stocks or shipments of that grade.

The stocks of paper carried by different mills depend not only upon the condition of the market but also upon the kind of paper made, trade customs, etc.

Tonnage Summary

Production, shipments and stocks of paper, by grades, for the month of August, 1922, compared with August, 1921, 1920, 1919, and 1918, together with average production and stocks.

Grade	Number of mills	Stocks on hand 1st of month, Net tons	Production, Net tons	Shipments, Net tons	Stocks on hand end of month, Net tons
News Print (Standard and Special Grades of News):					
August, 1922	83	21,156	433,236	134,490	19,902
August, 1921	92	25,519	102,277	100,668	27,128
August, 1920	86	22,022	128,818	126,129	24,711
August, 1919	73	28,225	113,413	116,054	25,584
August, 1918	65	24,912	113,731	116,970	21,673
Average	..	..	118,800	..	25,307
Standard News (Included in News print):					
August, 1922	68	16,366	123,481	123,830	16,017
August, 1921	74	20,964	95,105	93,341	22,728
August, 1920	69	19,127	117,356	114,546	21,937
August, 1919	53	23,325	101,875	103,817	21,383
August, 1918	50	18,635	102,566	104,694	16,507
Average	..	..	107,676	..	20,900
Book (M. F., S. S. C. and Coated):					
August, 1922	91	38,520	87,922	88,969	37,473
August, 1921	89	27,569	59,711	62,120	35,160
August, 1920	95	22,549	94,424	94,287	22,686
August, 1919	87	34,012	82,737	83,771	32,978
August, 1918	90	31,505	76,330	78,287	29,548
Average	..	..	79,191	..	30,305
Paperboard—Total (Straw, Fiber, Leather, Chip, Box, Etc.):					
August, 1922	227	64,033	195,115	199,521	59,627
August, 1921	233	64,720	138,530	139,974	63,276
August, 1920	251	39,097	215,633	216,425	38,305
August, 1919	250	57,560	189,782	194,478	52,864
August, 1918	236	40,238	178,725	179,788	39,175
Average	..	..	170,478	..	49,989

Boxboard (Included in Paperboard):					
August, 1922	127	29,593	146,248	148,479	27,362
August, 1921	138	30,903	108,661	107,404	32,160
August, 1920	150	17,219	158,524	158,375	17,368
Average	..	..	120,339	..	26,048
Wrapping (Kraft, Manila, Fiber, Etc.):					
August, 1922	149	69,368	74,315	81,239	62,444
August, 1921	146	61,710	56,167	55,066	62,811
August, 1920	147	22,365	75,226	74,250	23,341
August, 1919	160	58,651	64,861	71,837	51,675
August, 1918	154	38,790	61,861	67,297	33,354
Average	..	..	63,882	..	43,482
Bag (All Kinds):					
August, 1922	49	3,815	18,994	19,004	3,805
August, 1921	41	3,194	10,499	10,808	2,885
August, 1920	41	2,101	19,843	19,752	2,192
August, 1919	45	4,056	18,782	19,032	3,806
August, 1918	37	3,463	16,018	16,070	3,411
Average	..	..	14,337	..	3,362
Fine (Writing, Bonds, Ledgers, Etc.):					
August, 1922	105	37,621	33,081	32,813	37,889
August, 1921	107	39,385	18,833	20,315	37,903
August, 1920	111	27,439	33,122	33,434	27,127
August, 1919	111	40,331	33,122	36,582	36,871
August, 1918	106	28,074	34,735	34,999	27,810
Average	..	..	28,809	..	33,192
Tissue (Toilet, Crepe, Fruit Wrappers, Etc.):					
August, 1922	98	9,793	17,971	19,313	8,451
August, 1921	94	8,085	13,734	14,368	7,451
August, 1920	100	5,367	17,159	17,289	5,237
August, 1919	90	8,741	14,508	16,079	7,170
August, 1918	83	5,416	12,338	13,039	4,715
Average	..	..	13,257	..	6,737
Hanging (No. 2 Blank, Oatmeal, Tile, Etc.):					
August, 1922	28	6,835	6,302	7,032	6,105
August, 1921	22	9,001	5,476	4,809	9,668
August, 1920	27	1,381	9,554	9,425	1,510
August, 1919	21	6,509	6,343	6,303	6,549
August, 1918	20	3,462	6,349	7,163	2,648
Average	..	..	7,506	..	4,693
Felts and Building (Roofing, Sheathing, Etc.):					
August, 1922	47	9,103	41,220	41,764	8,559
August, 1921	48	10,435	20,051	21,532	8,954
August, 1920	52	12,523	31,961	33,365	11,119
August, 1919	52	8,574	28,081	29,804	6,851
August, 1918	46	5,986	25,637	22,894	8,729
Average	..	..	27,027	..	8,853
Other Grades (Specialties Not Otherwise Classified):					
August, 1922	105	20,416	26,951	27,142	20,225
August, 1921	100	19,926	17,241	18,394	18,773
August, 1920	98	14,613	28,418	28,642	14,389
August, 1919	80	14,262	22,027	20,674	15,615
August, 1918	60	6,042	21,747	18,040	9,749
Average	..	..	21,222	..	14,466
Total—All Grades:					
August, 1922	..	280,660	635,107	651,287	264,480
August, 1921	..	279,544	442,519	448,054	274,009
August, 1920	..	169,457	654,158	652,998	170,617
August, 1919	..	260,921	573,656	594,614	230,963
August, 1918	..	187,888	547,471	554,547	180,812
Average	..	..	544,509	..	220,386

The following stocks were reported on hand at terminal and delivery points on August 31, in addition to the mill stocks shown in the tabulation: Newsprint, 520 tons; book paper, 2,874 tons; fine, 20 tons; paper board, 100 tons; and "other grades," 292 tons; totaling, 3,806 tons.

Stocks of all grades excepting fine decreased during the month. Stocks of all grades reported by manufacturers at the end of August amounted to 268,286 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported news print stocks and tonnage in transit aggregating 240,209 tons.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic mills on August 31, with their average daily production, based upon the combined production for 1918 to 1921, inclusive, the figures show that:

- News print paper mill stocks equal 5 days' average output.
- Book paper mill stocks equal 13 days' average output.
- Paper board mill stocks equal 9 days' average output.
- Wrapping paper mill stocks equal 26 days' average output.
- Bag paper mill stocks equal 7 days' average output.
- Fine paper mill stocks equal 36 days' average output.
- Tissue paper mill stocks equal 17 days' average output.
- Hanging paper mill stocks equal 22 days' average output.
- Felts and building paper mill stocks equal 9 days' average output.
- Miscellaneous paper mill stocks equal 26 days' average output.

DEC 4 1923

Total paper mill stocks of all grades equal about 13 days' average output.

Imports and Exports

The imports and exports of all grades of paper for July, 1922, compared with July, 1921, as shown by the records of the Department of Commerce, were as follows:

	July, 1922		July, 1921	
	Pounds	Value	Pounds	Value
Imports:				
News print	160,673,783	\$5,608,152	132,235,265	\$6,496,094
Book paper	146,671	26,125	33,136	6,960
Wrapping	7,071,568	273,323	872,553	36,515
Hanging		62,664		42,749
All other grades (a)		226,889		239,931
Exports:				
News print	4,277,144	190,527	2,118,542	119,286
Book paper	3,066,183	288,461	1,684,547	205,861
Paperboard		208,767		136,900
Wrapping	3,234,501	206,712	2,056,412	140,351
Bag		89,961		36,384
Fine		95,281		163,696
Tissue		128,127		55,827
Hanging		15,163		12,171
All other grades (a)		348,929		287,493
Total imports		6,197,153		6,822,249
Total exports		1,571,928		1,157,969

(a) Includes some paper already converted into commercial articles.

News print is the only grade of which the United States is a heavy importer. The bulk of this tonnage is imported from Canada.

The value of the exports of news print for July, 1922, was about 3 per cent of the imports.

The value of the total imports of all grades was about 5 per cent less than for June.

The value of the total exports for July, 1922, was less than the imports by \$4,625,225, and was \$413,959 more than the exports for July, 1921.

News print, book, paper board and wrapping were principal grades exported, as to value.

Loss of Production

The idle machine time reported to the Commission for August, 1922, is shown by grades in the attached tabulation.

The number of machines includes only those machines for which idle time was reported during the month. It does not include the

machines in 44 mills that were closed down completely for the month.

The total number of machines may include duplications because the reports may count the same machine twice, if idle for different reasons during different parts of the month, or if idle part of the time on one grade and part of the time on another.

The reasons tabulated for lost time are "lack of orders" and repairs." "Other reasons" include "lack of material," "lack of water power," etc.

The time lost in August, 1921, is given by grades and reasons, for purposes of comparison.

Bryant Paper Co. Authorizes Bond Issue

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, September 30, 1922.—By unanimous vote, stockholders of the Bryant Paper Company, have authorized the proposed \$5,000,000 bond issue and the immense building, expansion and improvement program to be carried out. This action was taken at a special meeting, held Tuesday, September 26.

Felix Pagenstecher, president of the company, states that V. D. Simons, of Chicago, who conducted the exhaustive survey leading to the proposed program, will be engineer in charge of the work to be done. He will establish a complete organization in Kalamazoo immediately as plans provide for hurrying the improvements as rapidly as possible.

Program "A," which includes the erection of a new power plant of four 800 horsepower boilers and the wrecking of four power houses, the rebuilding of the machinery and equipment of the Superior division, the erection of a new machine shop and an immense salvage plant, will be undertaken at once. This program will require fully a year and an outlay of \$1,500,000.

The work contemplated is considered one of the most important expansion moves ever undertaken by a mill in the Kalamazoo valley district. While a great deal of controversy has been aroused among various mill managers and engineers, there is strong opinion that when all contemplated improvements are completed the Bryant Paper Company's output will be expanded fully 50 to 60 per cent in all departments, with a corresponding reduction in operating expenses.

LOSS OF PRODUCTION

MONTH OF AUGUST, 1922 (WITH AUGUST, 1921, FOR COMPARISON)

	Lack of Orders		Repairs		Other Reasons		Total	
	1922	1921	1922	1921	1922	1921	1922	1921
News Print:								
Number of machines.....	8	11	5	17	3	50	16	78
Total hours idle.....	1,976	2,398	605	3,209	146	1,893	2,727	7,500
Book Paper:								
Number of machines.....	30	140	19	20	60	32	109	192
Total hours idle.....	1,762	32,859	496	2,994	1,158	6,609	3,416	42,462
Paperboard:								
Number of machines.....	90	179	71	35	124	107	285	321
Total hours idle.....	16,715	42,128	4,917	4,327	21,179	26,611	42,811	73,066
Wrapping:								
Number of machines.....	14	67	88	43	39	23	75	133
Total hours idle.....	1,775	13,824	2,692	4,939	3,107	3,060	7,574	21,823
Bag:								
Number of machines.....	5	14	5	2	12	5	22	21
Total hours idle.....	40	2,137	122	73	847	429	1,009	2,639
Fine:								
Number of machines.....	61	95	48	22	74	29	183	146
Total hours idle.....	6,768	26,649	4,859	2,323	7,161	9,199	18,788	38,171
Tissue:								
Number of machines.....	33	46	67	50	27	17	127	113
Total hours idle.....	3,440	8,804	7,600	8,694	4,649	2,725	15,689	20,223
Hanging:								
Number of machines.....	1	6	0	3	5	5	6	14
Total hours idle.....	24	1,668	0	213	823	502	847	2,383
Felts and Building:								
Number of machines.....	7	25	12	9	13	15	32	49
Total hours idle.....	1,608	5,010	1,028	1,127	1,012	2,540	3,648	8,677
Other Grades:								
Number of machines.....	25	44	18	15	34	26	77	85
Total hours idle.....	1,996	10,295	1,073	1,653	4,298	5,565	7,367	17,513
Total number of machines.....	274	627	267	216	391	309	932	1,152
Total hours idle.....	36,104	145,772	23,392	29,552	44,380	59,133	103,886	234,457

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CANADIAN SULPHITE PRICES ARE INCREASED \$10 PER TON

Riordon Co. and Brown Corp. Take Initial Steps in Advancing Prices of Bleached Sulphite—Ground Wood Quotations Are Also Stiffening—Believe \$75 News Print Will Prevail in 1923—Abitibi Co. Will Resume Dividend on October 20—British Producers Are Opposed to Humber Valley Development Scheme—Another Forestry Plane Is Wrecked—Describes New Electric Steam Generator.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 2, 1922.—A demonstration of the marked recovery in the market for pulp and paper is the action of the Riordon Company in advancing the price of bleached sulphite \$10 per ton for all other than contract business. It is also reported that the Brown Corporation, of La Tuque, has made a similar advance. The ground wood market has also shown a stiffening tendency. A month ago quotations were \$27 to \$28 per ton, while now business is being done at \$32 to \$34 per ton for Canadian ground wood. The board mills, which withdrew their prices early in the month, have re-entered the market with new quotations which are up from \$10 to \$15 per ton on the various grades. The stronger tendency is perhaps not quite so pronounced in the case of book and fine papers, but in the case of these also there is a firming demand.

This most recent development in the market for Canadian pulp and paper products means more to the Riordon Company than to any other in the Dominion, this company having an output of about 345 tons daily of bleached sulphite. The new prices which have been put into effect mean \$90 per ton for the 120-ton output of the Hawkesbury mill, and \$100 per ton for the higher-grade, 180 tons output of the Kipawa mill. The output of the mill at Merritton, Ont., about 45 tons daily, may be included with that of the Kipawa mill. The increase, if it were applicable to the entire output of the mills, and if the mills are operating to capacity as reported, would mean about one million dollars additional profits per year for the company. As there is no way of telling what percentage of the company's business is under contract for the remainder of the year, the actual gain of the company cannot be estimated, but that it will be substantial, seems obvious.

News Print Producers Non-Committal

On the subject of future news print prices, Canadian manufacturers and those most intimate with the production end are rather non-committal. There seems to be a strong inclination in this quarter to try to effect a stabilization of prices which will eliminate the danger of curtailment of consumption. If present conditions affecting the market for news print continue, it is admitted by the most conservative that next year will see at least \$75 news print. All mills are reported as being increasingly busy and board mills are in particularly good shape.

Abitibi Co. Resumes Dividend

At a meeting of the directors of the Abitibi Power and Paper Company, held in Montreal, it was decided to resume dividend payments on the common stock at the rate of 4 per cent per annum, payable October 20, to shareholders of record October 10. This dividend will be the first distribution on common which the company has made since that for the quarter ended March 31, 1921, over eighteen months. The declaration of the dividend is an indication of the present earning position of the company. The dividend charge for twelve months on the present basis will be \$1,000,000; preferred dividends required \$70,000, while interest charges amount to about \$1,441,500. It would therefore appear that the

executive is confident of being able to earn well over two and one-half million annually.

British Papermakers Oppose Newfoundland Scheme

Denial is given her to the news recently sent out from Washington that Canadian financiers will oppose the proposed scheme for the development of the Humber Valley in Newfoundland, and Premier Sir Richard Squires' negotiations in London for British support for a 234,000 horsepower electric plant for the Humber River with pulp and paper mills attached. It is stated that Canadians would be glad to see the British Government sending money to build up a great industry and relieve unemployment, either in Newfoundland or Canada, where any influx of capital is welcomed.

On the other hand, advices have been received here to the effect that the Paper Manufacturers' Association of Great Britain and Ireland has protested to the Trade Facilities Advisory Committee against the making of any Government grant, subsidy or guarantee intended to develop competitive news print mills in Newfoundland. The protest is based upon the ground of the present conditions and prospects of the British paper trade, with which the association holds the new overseas mills, would compete. As a matter of fact, say the advices received here, it is not considered likely that the British Government will take any steps to assist the Humber Valley project until the Newfoundland railway situation is settled on a permanent basis.

Forestry Plane Wrecked

The Forestry Branch of the Department of Lands and Forests for Quebec Province has been advised that for the third time this season an accident has occurred to hydroplanes operated by the Dominion Air Board on the North Shore, and utilized by the Provincial Forest Service for surveying purposes and observation. The machine was completely wrecked but the only one of the occupants injured was Henri Methot, Provincial Forestry Engineer on duty as observer aboard the plane. He suffered a cut near the left eye. The machine fell into the water near Godbout through engine trouble. The hydroplane was attached to the air station in Roberval, and had reached its post only a few weeks ago. It had made the trip from Halifax to the North Coast with many difficulties, among which were a forced landing place in the gulf, and the pilot having trouble in reaching Anticosti Island, and then the North Shore. Another hydroplane fell in the forest near Roberval during August, and was reported to have been a complete loss.

Inventory of Forests

Out of the 45,000,000 acres of leased timber limits in Quebec Province, 1,200,000 acres were cruised in the course of the season by forestry engineers, and reports were submitted. This inventory is proving advantageous. In due course, provision will be made to make a complete inventory of the timber limits, which will contain the value and description of the timber on licensed territories. The cruise is first made by the holders' employees, and then controlled by the engineers of the Department of Lands, and Forests.

Laurentide's Electric Steam Generators

P. S. Gregory, of the Shawinigan Water and Power Company, in an address before the American Electric-Chemical Society here, gave some particulars as to methods by which four hundred tons of coal are saved daily in the St. Maurice Valley through the adoption of electric steam generators in two large industrial plants of the Laurentide Pulp and Paper Company and the Belgo-Canadian Pulp and Paper Company.

Although the method of generating steam by electricity is most advantageous for certain purposes and for certain industries, it is by no means generally applicable, and the day has not come when general utilization of electricity for generating or heating purposes is possible.

(Continued on page 22)

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PRICES STEADILY ADVANCE IN CHICAGO PAPER MARKET

Buyers, However, Apparently Continue to Hold Off Placing Orders for Goods That Are Badly Needed in the Hope That Prices Will Decline—Railroad Situation Said to Be Very Unsatisfactory—While There Are More Cars in Good Condition Than in Some Time Past, the Number Is Said Not to Be Sufficient to Handle the Business That Is Being Offered—Other News of the Trade.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, October 2, 1922.—Officials in the Chicago district are considering the probability of whether or not buyers realize that prices are steadily advancing. The belief has manifested itself that the buyers are waiting until prices have lowered before purchasing merchandise that is badly needed at the present time. Inquiries and sales have been considered fair but their volume is not as great as merchants have been expecting. The steadily rising market has caused conservative buying and big orders for the future cannot be found in the inquiries at the different branch offices in the city.

The railroad situation is becoming much more acute. During the last week buyers have kept the wires busy trying to locate cars that have been shipped but not received. Several officials in Chicago have announced that railroad conditions are much worse than they ever have been since the strike. The possibility of such a situation was predicted several weeks ago, that is, the opening up of general business would mean a shortage of cars. At the present time there are more cars on the tracks in good working order than there were during the crises in 1920 but still not an adequate number to handle the business offered.

Box Manufacturers Play Golf

Close to twenty paper box manufacturers and supply trade members held a golf tournament at Olympia Fields, September 27. The golfers left the city shortly before noon and started to play about one o'clock. It was an ideal day for such an outing and all attending said they had an enjoyable time. Eighteen holes were played, David Lyons, of the Chicago Tube and Can Company, taking the honors with a score of 79. Arthur Kroeck, of the Kroeck Paper Box Company, took second position with a score of 80. E. E. Pinkerton, of the Pinkerton Folding Box Company, made third with a score of 82. Among some of the other players were: S. T. Knox, of the LaFayette Box Board and Paper Company, the Alton Box Board and Paper Company, and Chicago Division of the Robert Gair Company; W. C. Ross, of the Mid-States Gunned Company and H. G. Williams, of the C. L. La Boiteaux Company.

General News of the Chicago Trade

The Seaman Paper Company has increased its capital stock from \$3,000,000 to \$4,000,000.

Laurance Smith, of the Laurance Smith Envelope Company, Detroit, Mich., transacted several days business in Chicago.

Howard Brothers, 10 South LaSalle street, announce that business is very good. The mills are running to full capacity manufacturing the best products obtainable. The Howard Company has not as yet announced who the general manager for the Chicago office will be. Since the resignation of Mr. Harris, who has accepted a position with the Graham Paper Company of St. Louis, Miss., no successor has been appointed.

The Forsythe Paper Company, 10 South LaSalle street, states that business is running very smoothly. Sales have been satisfactory but the company is having difficulty with shipping facilities.

Hugh Strange, manager of the John Strange paper mill at Menasha, Wis., spent September 26 in Chicago. Conditions at the

mills are very favorable and the future is considered as improving.

F. A. Leahy, vice-president of the Eastern Manufacturing Company, Bangor, Me., was a Chicago visitor during the last week.

R. A. Wight, Crane & Co., Dalton, transacted business among the Chicago trade on September 27.

"Bob" Butterworth, manager of the Chicago office of the Champion Coated Paper Company, is traveling throughout the Southwest.

A. L. Smith, of the Union Paper and Twine Company, Detroit, Mich., visited among the trade during the past week.

C. W. Lynch, founder of the "department of announcements" of the American Writing Paper Company, at Holyoke, Mass., and who recently resigned his position with that company has accepted a position with the LaSalle Paper Company, 171 North Dearborn street. Mr. Lynch will have charge of a new department that will handle several lines of wedding and anniversary merchandise.

F. D. Rotellini, a service man of the American Writing Paper Company, in Philadelphia, is visiting in Chicago for the last week.

A. M. Collins Manufacturing Company, 30 East Randolph street, report that business is very satisfactory. Card boards and regular cover papers are meeting with large demands.

CANADIAN SULPHITE PRICES INCREASED

(Continued from page 20)

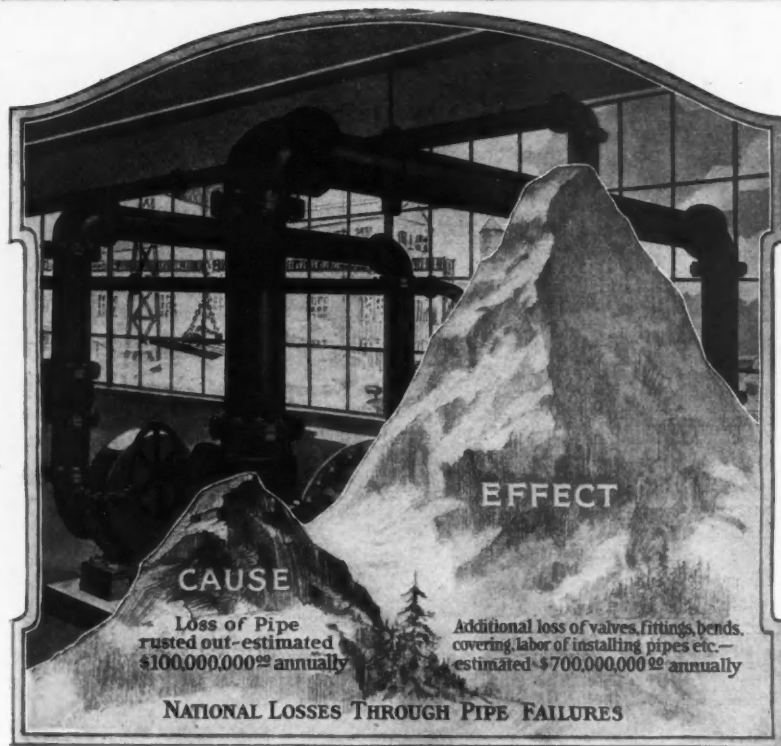
The water resistance electric steam generator consists essentially of a closed pressure vessel to which is connected a source of water supply, and from which water may be drawn off at the bottom and steam at the top. In this vessel electric energy is made to flow through the water from an electrode in the form of a plate, or tube, to the shell of the vessel or to the metallic inner lining. Alternating current energy is used at a pressure varying from 110 volts up to 12,000.

The generators are constructed for the use of 3-phase power, either by employing three electrodes in one vessel or by the use of three vessels, with one electrode in each, in which case the outer shells are connected together in a star. In this type of generator there is no heating surface, the generation of steam taking place throughout the water, and as a consequence no portion of the apparatus is at a higher temperature than the temperature of the steam. This is a most important feature from the viewpoint of safety and continuity of operation.

There are some 100 installations already in Europe, although the process is a new one, the discussion disclosed. Professor Wilder D. Bancroft, of Cornell University, declared that some day the electric firing of porcelain will bring artistic and decorative porcelain to a very much higher state of perfection than ever before thought possible.

Car Shortage Affects Mills

News print mills and lumber merchants in Canada are again finding difficulty in shipping their orders, through a serious shortage of box cars on the Canadian railway systems. Of the 147,000 Canadian-owned freight cars, 19,000 are in the United States at present, a situation unprecedented, and really more serious than during the war, when thousands of Canadian cars were held back in the United States for transportation of munitions and war materials. For the movement of coal an enormous amount of equipment has become necessary, and it is for this reason that Canadian box cars are being held back. The strike of the railway shop craft employees in the United States has also made the situation more difficult. As a result of the strike the American freight cars were neglected and in poor shape, while the Canadian equipment is in excellent order. C. P. Riddell, secretary of the Railway Association of Canada, states that there are 19,000 Canadian box cars on United States lines in excess of United States-owned box cars on Canadian lines. This represents 13 per cent of the total freight car equipment of Canadian lines.



Look for the Name and Year Rolled in Every Length

Cause and Effect

The Nation's annual loss through corrosion of welded pipe is probably close to \$100,000,000.00. Multiply this amount by seven, and you arrive at the concurrent loss of fittings, valves, cocks, gaskets, bends, labor and other items in a pipe installation. This does not include allowance for idle time or damage to property attendant upon many pipe failures.

Corrosion, while not preventable, may be greatly retarded by the use of Byers genuine wrought iron pipe. Its life is recognized to exceed that of ordinary black or galvanized pipe by 100 per cent up to 500 per cent, while in cost it adds but five to ten per cent to the average pipe system.

If you would avoid the big losses and annoyances caused by the use of cheap pipe, investigate past performance records of iron and steel pipe. (Ask for Byers Bulletin No. 27, 30 and 32.) Then look into the Analyses of Pipe Installation Costs, presented in Byers Bulletin No. 38.

Byers Bulletin No. 38 contains cost analyses of a variety of plumbing, heating, power, and industrial pipe systems, with notes of corrosive conditions. Sent free on request.

A. M. BYERS COMPANY, PITTSBURGH, PA.

Established 1864

New York Philadelphia Boston Cleveland Chicago Houston Tulsa Los Angeles

BYERS PIPE

GENUINE WROUGHT IRON

PRICES OF PULP AND PAPER STIFFEN IN TORONTO MARKET

Ground Wood Pulp Increases from \$3 to \$5 Per Ton While Bleached Sulphite Advances \$10—Other Grades of Pulp Go Up Correspondingly—Jobbers Are Satisfied with Volume of September Business—Board Mills Are Rushed and Prices Rule Firm—Old Officers Re-Elected at Annual Meeting of Spanish River Co.—Port Arthur Plant Expands—Progress Made on New Kenora Mill.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., October 2, 1922.—Prices in the pulp and paper line are strengthening. There was an advance from three to five dollars on ground wood pulp during the past week, an increase of ten dollars on bleached sulphite and a stronger tone to other lines of pulp. Book paper went up half a cent and mills are getting busier. Jobbers also report that September was a good month and there is a disposition, in view of the trend of the market, for customers to order in larger quantities. Wax paper manufacturers report that business is now coming their way in larger volume and more wrapped bread is being sold while confectionery plants are taking large quantities of their product. Toilet and tissue mills are well satisfied with the business they are doing and it is rumored there may be an increase in the price of toilet papers before many days. This has caused a rush of orders. Kraft is in pretty active demand and the whole paper outlook is good although some complaints are made with regard to cars and deliveries have been delayed in the East owing to scarcity of rolling stock.

Board mills are rushed at present and the following prices now prevail on car lots delivered: Plain chip, straw and No. 3 pulp board, \$65 per ton; vat lined board, \$75; filled wood board, \$80; folding pulp board, \$90; white coated, news back, \$110; white patent coated, manila back, \$120. It is understood these prices will hold good until the end of the present month. Paper box plants are well filled up with orders and deliveries are required in many instances in a hurry.

Spanish River Annual Meeting

The annual meeting of the Spanish River Pulp and Paper Mills was held in Toronto last week and George H. Mead, of Dayton, Ohio, presided. All the old officers were re-elected and the report of the past year was received. Expressions of satisfaction were given at the manner in which the affairs of the company have been managed. Only one question was asked and that referred to the company's investments in other companies. President Mead stated that the company had an interest in the Fort William Paper Company acquired over two years ago when it needed ground wood pulp badly and had to ensure a supply. Now, thanks to the development at Sturgeon River, the company was no longer in the market for ground wood pulp. All the plants are busy and are working to capacity, with bright prospects for the future. It is understood that the various units of the organization have ample coal supply on hand.

George Carruthers Celebrates 53rd Birthday

George Carruthers, president and general manager of the Interlakes Tissue Mills Company, Toronto, received congratulations on all sides on September 29, which marked his fifty-third birthday. He is chairman of the International Textbook Committee for the pulp and paper industry of Canada and the United States and also president of the Ontario Pulp and Paper Makers' Safety Association. In 1911, Mr. Carruthers organized the Interlake Tissue Mills Company, which has proved to be a most successful venture.

Gets Tiling Contract for Paper Mill

D. Pilla, of Port Arthur has been given the contract by the Port Arthur Division of the Provincial Paper Mills Company for the placing of ten thousand square feet of enameled tiling as lining to several tanks in the new paper mill. It will take about a month to complete the work and one car load of tiling will be used.

Port Arthur Plant Expanding

F. N. Youngman, manager of Thunder Bay Paper Company, Limited, Port Arthur, states that the company is not operating any camps this winter and nothing definite has yet been accomplished in the way of securing a timber limit from the Ontario Government. The plant of the company has been running to capacity since last April. At present a new wood room is being built. It is of brick construction and two barking-drums will be installed. The Thunder Bay Paper Company is also making other changes which will increase its capacity of ground wood pulp from 30 to 50 tons daily. This will be accomplished within the next three or four months.

Good Progress Made at Kenora

E. W. Backus, of the Fort Frances Pulp and Paper Company, who was in Toronto recently, states that good progress is being made on the construction of the new pulp mill at Kenora. Mr. Backus said that he did not know definitely when his company would be producing news print at that point.

Notes and Jottings of the Trade

James Mac Arthur, head of the British-American Wax Paper Company, Toronto, is on an extended business trip to Winnipeg and other western cities.

Arthur Jewett, of the Montreal office of the Provincial Paper Mills Company, spent a few days in Toronto recently on business. William Gorman, eastern manager for the firm, returned recently from an extended visit to England.

C. Nelson Gain, sales manager of the Don Valley Paper Mills, Toronto, who has been spending the summer months at his rural home, Erindale, has returned to the city.

Bradshaws, Limited, manufacturers of wax paper, Toronto, one of the oldest concerns in that line in the province, have recently increased their capital stock from \$50,000 to \$150,000 and report business as very active in their line.

A meeting of the creditors of Specialty Bags, Limited, Toronto, was held this week. The affairs of the company, which make paper bag specialties, have been placed in the hands of the Imperial Trust Company, of Canada, as trustees.

DeForest Coutts, representing the Whiting Paper Company, of Holyoke, Mass., was in Toronto during the past week calling upon the paper trade.

Dr. J. W. Ross, Canadian Trade Commissioner, Shanghai, China, and D. B. Sparks, Canadian Manufacturers' Association Commissioner in China, called upon the paper trade in Toronto during the past week and conferred with the members regarding the development of business with the Far East.

L. F. Knickerbocker, formerly of Niagara, Wis., who has been appointed superintendent of the new book mill of the Provincial Paper Mills at Port Arthur, Ont., was in Toronto recently on business. It is expected that the new plant at Port Arthur will be in operation about February and the output will be about thirty tons daily. Many specialties will be turned out for the western market.

The new plant of the Temiskaming Pulp and Paper Company at Haileybury, Ont., is now running to capacity on ground wood pulp. H. Grady, formerly of the Cliff Paper Company, Niagara Falls, Ont., who some time ago was appointed superintendent of the mill, has entered upon his new duties.

H. B. Donovan, sales manager of the Canadian Paper Company, Toronto, spent the past week in Montreal on business.

George C. Winlow, of Toronto, sales manager of Lincoln Mills, Limited, has returned from a business trip to Winnipeg.



"The beatermen are perfectly satisfied"

This unusual statement was made by the Superintendent of a mill who had recently installed a Leo Shlick Beater Hood on one of his most troublesome Hollander Engines.

Leo Shlick's Beater Hood is guaranteed to increase beater circulation at least 100 per cent or increase beater capacity by at least 25 per cent, without using any more power and without increasing the speed of the roll.

Revolutionary as this guarantee may sound to you, the Superintendent's statement above "The beatermen are perfectly satisfied," shows how practical Leo Shlick's Beater Hood is.

Just send us a postcard and we shall be glad to send complete information.

BIRD MACHINE COMPANY
SOUTH WALPOLE, MASSACHUSETTS

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

BIRD MACHINERY

88-241

ORDERS MORE PLENTIFUL IN PHILADELPHIA MARKET

Prices Do Not Increase Appreciably But This Is Looked Upon as Lull Preceding Active Period—End of Depression in Printing Business in Sight—No Accumulation in Paper Stocks—Prices Hold Firm—Esparto Papers, Inc., Will Be Organized Soon—C. L. Huff Retires from Huff Paper Co.—Monarch Envelope Co. Changes Hands—Officers Elected in Charles Beck Co.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., October 3, 1922.—Paper distributors, particularly in the fine division, are evidencing in greater measure than ever before their faith that all prices will move upward, by making as large commitments at this time as financial resources will permit. Their salesmen have long been advising customers to follow this course, and the sincerity of this advice is becoming more evident daily. Visiting mill men are receiving, as September closes, more orders than they have for some time past, attributable to all the upward moving forces, with strike settlement and tariff enactment as the most potent, which have been operating actively in recent weeks.

During the last seven days no longer advances in prices of any grade were reported but the distributors look upon this as merely the lull preceding the active period that is to follow. Substantial increases all along the line are anticipated this month and probably not later than the 15th. Price lists of several of the local houses are being held back in anticipation of changes in the near future.

Printing Business Revives

During the week a steady continuance was enjoyed of the improvement in both number of orders and average amount involved, demand coming from the moderate sized and smaller printers particularly. While the printing business, chief consumer of fine paper, has long suffered a period of depression, the end of that is now in sight if not actually here. Many catalogue orders which have been held up for a long time are now being liberated, those publishing them taking the view that the consumer's market is bound to be increased by reason of the fact that labor is now almost entirely employed and at high wages, making this class prospective purchasers. The week's market was particularly active in book, cardboard, and the cheaper lines of bond paper. It is on these that the largest advance is expected. The distributors are of the opinion that the higher grades of bonds will advance but slightly as compared with those of sulphite and rag content. Coarse papers moved along fairly actively during the last week with the cheapest grades very firm in price, advancing, and several of them quite scarce. The board market slowed up slightly in its recent upward flight, and yet advances, perhaps isolated, were reported. Contracts were placed for chip board at \$60.00 although it is understood that the bulk of it is being sold at about \$58.00. News board runs from \$3.00 to \$5.00 a ton higher, and straw board prices, hovering somewhere around the \$75.00 mark, are really determined by the eagerness of the buyer to get in supplies. Local board mills are all reported to be working at capacity.

Paper Stock Firm in Price

Paper stock prices remained firm at their recent advance even though mill requirements slowed down slightly. The mills are buying almost as fast as stock is coming into the warehouses and there is no substantial accumulation nor indications that there will be one. The stock dealers particularly in the paper line, still are in the midst of a rather aggressive buying campaign with new alignments of customers due to the activities of the Waste Paper Division of the Typothete of Philadelphia, the one contractor for which now has

on his books accounts with a number of producers who recently disposed of their waste to other packers. The result is that new customers are being sought by those houses who lost old ones and there is a general shift around in the trade. The Philadelphia Stock Dealers' Association will resume its activities after the summer quiet at a meeting to be held early this month and probably this week at 1827 Arch street where President Evan G. Badger has offices. A social session is being discussed for the November meeting and with a sauerkraut spread probable.

Esparto Papers, Inc., to Be Formed

General trade interest among the distributors of fine papers centered largely on the announcement that an application for a charter for a new and important paper enterprise was to be made to the Governor of Pennsylvania on October 18. It will be called Esparto Papers, Inc., "the character and object of which is the importing, buying and selling paper and paper stock and the manufacturing of pulp and paper of all kinds." The incorporators' names are Frederick E. Hastings, R. C. B. Hay, Herman Muller, James A. Lynd and John A. Murphy, Ex-mayor John Weave, Commercial Trust Building, is attorney for the petitioners. Esparto Papers, Inc., shortly is to open a suite of offices on the third floor of the Franklin Trust Co. Building, 15th below Market street. Frederick E. Hastings, who heads the new organization, long was connected with the paper manufacturing firm of Dill & Collins from which he retired at the beginning of the year, subsequently going to England and Scotland, where high quality book papers are produced from the famous esparto grass. Mr. Hay is a native of Scotland. Formal announcement of the company's purposes is not yet forthcoming, but it is known that it will engage in the importation of foreign made papers produced from esparto stock.

Charles Beck Co. Elects Officers

Following the granting of a charter of incorporation for the Charles Beck Company there have been elected as officers, President Leonidas Beck, Vice-president Andrew Simon, and secretary and treasurer H. P. Beck. The veteran founder of the firm, Charles Beck, Sr., on Wednesday of last week celebrated his 85th anniversary and in honor of it a number of his friends motored down to his cottage in Atlantic City, where he is spending some time. Mr. Beck, however, still takes an active interest in the business and is almost a regular visitor to headquarters. Sympathies are being extended to I. Richard Wilson, assistant to Robert Rudolph in charge of the box papers department on the death last week of his wife. Mrs. Wilson left two small children.

Huff Paper Co. Changes Hands

A formal announcement shortly is to be made by the Huff Paper Company, Denckla Building, Philadelphia, for which articles of incorporation recently were granted, announcing that the business and good will of Charles Lawrence Huff, former owner of the Huff Paper Company, have been purchased by his former associates and others, and that though now incorporated, they will continue to do business under the old name. The personnel of the new Huff Paper Company consists of S. L. Warren, president; H. A. Adler, treasurer; H. H. Huquenele, secretary, and F. P. Huffnal, assistant treasurer. Mr. Huff, who was former proprietor, but who no longer holds any interest of any kind in the Huff Paper Company, has written a personal letter in the course of which he says: "My financial interest has ceased, but I am still very much interested in the boys who have been with me so long and from my personal knowledge can give assurance that the new company starts its career with sufficient and well ordered finances. There will be little or no change in the conduct of the business." The Huff Company will continue as in the past to be the sales agent for the Continental Paper and Bag Mills and a number of

(Continued on page 28)



The Collective Judgment of Buyers is the Best Gauge of Machine Values

Those Mills in a position to choose
from the best and who buy the best,
have set the seal of their approval upon

Beloit Paper Making Machines



BELOIT IRON WORKS

BELOIT, WIS., U. S. A.



ORDERS MORE PLENTIFUL IN PHILADELPHIA MARKET

(Continued from page 26)

other lines. The sale of his interest means the retirement of Mr. Huff from the general paper business, although he will continue to handle the account of the Purities Specialty Co. and for the present, at least, will continue to maintain an office at the old location in the Denckla Building. He has been active in the paper trade for thirty-three years and was the pioneer mover, at the request of a representative of the PAPER TRADE JOURNAL, to organize the Philadelphia Paper Trade Association, of which he is known as the father. His connection with the paper business began more than thirty years ago with Albert Haverstick. Subsequently he was a partner in the firm of Walkly, Riegel & Huff, afterwards founding the Huff Paper Company which for many years, before its removal to the Denckla Building, was located at the southeast corner of Fifth and Market streets.

Buys Monarch Envelope Co.

The United States Envelope Company has purchased the machinery and equipment of the Monarch Envelope Company, Philadelphia. The United States Envelope Company will operate the Monarch Company in its present location as the Monarch Division of the United States Envelope Company. Thomas J. K. Parker will continue as manager of the Monarch Envelope Company Division.

General News of the Trade

Charles Scheble, for some time connected with the D. L. Ward Company in various capacities, and lately on the sales force, has resigned to accept a position with the newly organized Wilcox, Walter, Furlong Paper Company, 231 Chestnut street.

The roof of the boiler house of the R. T. Moorehouse Paper Mill, 6th Street and Frankford Creek, Bridesburg, was destroyed by fire last week, the firemen confining the flames to the building only after a two hours' battle. Estimated at \$2,500.

Daniel I. Murphy, head of the stock firm of Daniel I. Murphy & Son, who, with Mrs. Murphy, has been touring Europe, was in Rome last week. He expects to return home by way of France, arriving here October 20. Mr. Murphy has already visited England, Scotland, Belgium, Holland, Germany and Italy.

Walter J. Hackett, formerly of Raymond & McNutt Company, and now with the Paper House of Pennsylvania, is making an extensive tour throughout northwest Pennsylvania.

Daniel Hartigan, representing the Old Hampshire Bond Mills of Holyoke, Mass., who recently has been touring the middle western states, stopped over in Philadelphia on his way South to visit the stationery trade. He is featuring particularly on the trip the boxline or holiday numbers and typewriter papers in bond and vellum. He is a brother of John J. Hartigan, of the Molten Paper Company.

Miss Eleanor Howe and her assistant, Miss Dorothy Wright, of the Philadelphia branch of the Dennison Manufacturing Company attended the annual conference of the managers of the Arts Crêpe Paper Department held in New York, headquarters at 200 Fifth avenue during the week. One of the new features in the New York headquarters is the permanent year round exhibition of the various usages of crêpe paper for ornamental purposes and utility which is to be on exhibition in the basement of the newly remodeled store for the benefit of customers and dealers.

The Keystone Envelope Company, 427 Moyer street, which recently purchased the adjoining building at 429 Moyer street, has remodeled the plant and now occupies the building as part of its envelope manufacturing establishment for the line of red rope and manila envelopes and file pockets. There are four stories in the new building and on the first and second floors have been installed 12 presses especially adapted for printing on fiber envelopes, maga-

zines, catalogues, and general publishing, and designed for long run work. The other floors will be devoted to envelope manufacture.

Suit was begun in the Municipal Court by the Massillon Paper Company, of Massillon, Ohio, to recover \$774.84 for merchandise from the Auer & Twitchell Co.

Notice of an increase of three cents an hour in the wages of the employees of the New York and Pennsylvania Company and the Castanea Paper Company, of Lock Haven, Pa., was announced during the week and effective October 1.

Another increase of ten per cent in wages also effective October 1 was granted to the employees of the York Haven Paper Company at York Haven, Pa.

Low Water in Black River District

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., October 2, 1922.—All paper mills in the Black river district are suffering from the effects of low water, and similar trouble is being experienced by industries located on other Adirondack streams. The water flow is at its low ebb for the present season and relief from reservoir sources is exhausted.

The ground wood mills all along the river are unable to run on full time, there being a period during the middle of the day when there is insufficient water. As yet the other mill departments have not been slowed in production, but a further delay of rain will cause trouble in a few days, it is expected.

J. V. Baron, chairman of the Board of the Black River Regulating District, said that on account of the heavy June rains the season to now had been unusually free from low water conditions. He said that during recent weeks it had been found necessary to open the gates of the reservoirs at Old Forge and Stillwater to keep up the river flow.

Speaking of the test case of W. D. Ogsbury against the regulating board which is now pending before the Appellate Division, Mr. Baron said that the court convenes again this week and that a decision would be promptly handed down. "The case will then be taken to the Court of Appeals," he said, "and in all probability it will be about January 1 before final decision will have been reached."

The test case will establish the status of the Machold river regulating law. It will enable the local board to either abandon its activities entirely or advance at once. Progress on the execution of plans has been delayed for a year by the test case.

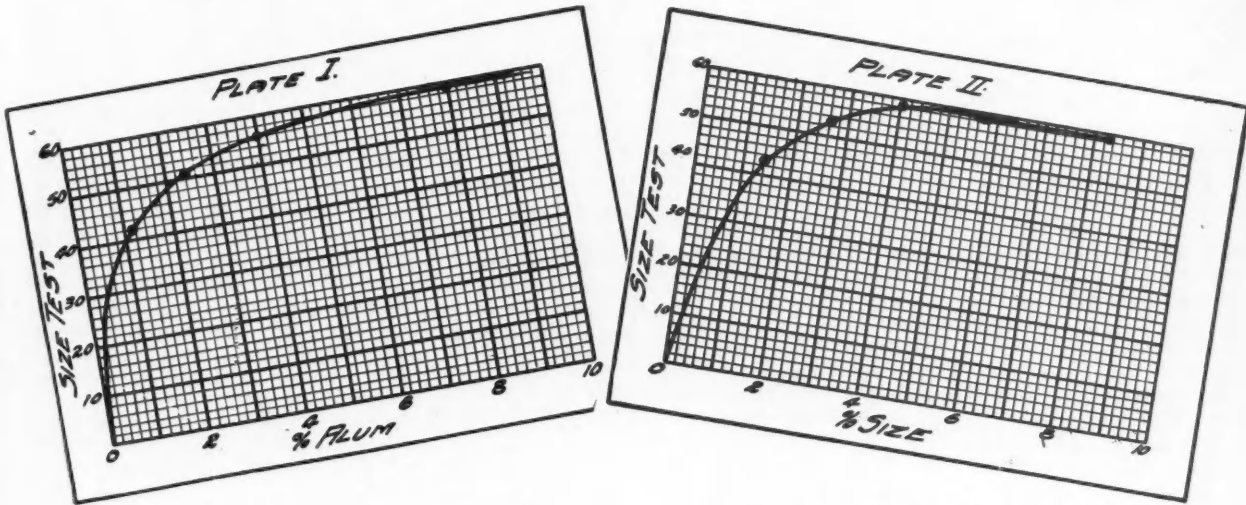
The manufacturers in the Racquette river district have already made preliminary plans for river regulation there and the decision will control future actions in that district.

Bastrop Pulp Co. to Install Paper Machine

BASTROP, La., October 2, 1922.—Plans are under way for one of the most modern kraft paper mills in the country, to be operated as an addition to the present plant of the Bastrop Pulp and Paper Company.

From the beginning of operations of the pulp plant the pulp manufactured product was found to be especially suited to the manufacture of kraft paper, a large proportion of the 50-ton daily production of the plant going to make kraft paper of the highest quality in Northern mills.

So well has it turned out that the owners of the local plant have decided to put in a paper machine with a capacity of 50 tons per day and turn all or part of their pulp into paper. When installed, this mill will employ an additional 40 to 50 men and will have one of the finest paper machines in the world.



These diagrams are actual tests. They show that, after a certain point, it is impossible to increase the

size in paper. Adding more material is merely a waste.

Do You Know When to Stop Adding Size and Alum?

There is only one method of accurately determining when the point of saturation is reached—the test given by the Valley Size Tester.

“Accurate,” “Easy to Operate,” “Resulting in a real saving in size and alum,” those are the written opinions of the users of some of these remarkable instruments. It will be well worth your while to get full particulars regarding it.

Write for them immediately.

Valley Iron Works Co.

Plant: Appleton, Wis.

New York Office: 350 Madison Ave.



CERTIFICATE BOND AGENTS IN CONFERENCE AT HOLYOKE

Third Annual Meeting of Distributors of Well Known Line of Crocker-McElwain Co. Attracts Paper Men from Important Paper Centers Throughout the Country—Helpful and Interesting Addresses Are Made by Representative Men in Their Lines—Business Meetings Followed by Entertainment of Various Kinds—Those Who Attended the Annual Conference.

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., October 2, 1922.—The Third Annual Certificate Bond conference of the distributing agents for the Crocker-McElwain Company held here last week at the Hotel Nonotuck, not only attracted a large attendance of paper merchants but included among those who addressed the meetings some of the leading business analysts of the country. "Business First"—diversion afterwards was the motto of the conference and bright and early Monday morning the conference opened with a "Bonjour" address by C. A. Crocker, President of Crocker-McElwain Company. From that moment the meeting proceeded on scheduled time and when Tuesday noon arrived everyone was ready to relax and enjoy the sporting events provided for entertainment. An interesting feature was the taboing of all business talk while any part of the entertainment program was being carried out.

Those Who Addressed the Conference

The following addressed the members during the various sessions:

K. S. Warner, Chairman of Advisory Committee 1922 Conference "The Distributors Would Like to Discuss—"

C. H. Barr, Manager Sales Promotion, "A Little Bit of Everything."

Tim Thrift, Advertising Manager American Multigraph Sales Company, "The Rights of the Multigrapher to Buy Paper."

Prof. Harry R. Wellman, Professor of Marketing, Amos Tuck School, Dartmouth College, Address, "Modern Trend of Paper Manufacture and Merchandising."

P. W. Gridley, Assistant Treasurer, "Five Days are Better than Four."

E. C. Tucker, Manager Production, "Better Certificate Bond than Ever."

S. L. Bush, Manager Research, "Prepared."

Brad Stephens of Boston, "Fifteen Years Observation in Paper Advertising—What Next?"

James B. Thayer, Manager Sales United States Envelope Company, "Certificate Bond Converted Items—What We Are Going To Do To Sell More."

E. St. Elmo Lewis, of New York City, "The Handwriting on the Wall."

Excellent Entertainment

The Golf tournament on Tuesday afternoon brought together many wizards of the game, and E. A. Petrequin who it is said, is now specializing in "paper trade conference golf tournaments," added another prize to his already large collection. The visiting ladies were royally entertained with auto tours through the Connecticut valley and over the celebrated Mohawk trail, lunches, teas and banquets. An exhibit by the United States Envelope Company of converted lines of Certificate Bond showed some very artistic stationery items and aroused real interest among the conferees.

Those Who Attended

Among those present at the conference were:

K. S. Warner, John F. Sarle Company, Inc., New York.

Gus. Lux, Wm. Steadman and Alfred Kinn, J. E. Linde Paper Co., New York.

Mr. and Mrs. S. Lathrop, Lasher & Lathrop, Inc., New York.

Max Greenebaum, Beekman Paper and Card Company, New York.

W. B. Stevenson, A. Storrs and Bement Company, Boston.

W. B. Littleton, Antietam Paper Company, Hagerstown, Md.

John A. Church, Cincinnati Cordage and Paper Company, Cincinnati, O.

L. P. Sine, Messinger Paper Company, Chicago.

Mr. and Mrs. J. A. Donaldson, Donaldson Paper Company, Harrisburg, Pa.

Leon Beck, Chas. Beck Company, Philadelphia.

Mr. and Mrs. C. R. Van Reed, Van Reed Paper Company, Reading, Pa.

Mr. and Mrs. A. C. Hall and Mr. and Mrs. H. E. Waite, John Carter & Co., Boston.

(Continued on page 32)



PICTURE TAKEN AT THE ANNUAL CONFERENCE OF CERTIFICATE BOND AGENTS AT HOLYOKE, MASS.

VELURE SURFACE

are recognized by the trade as

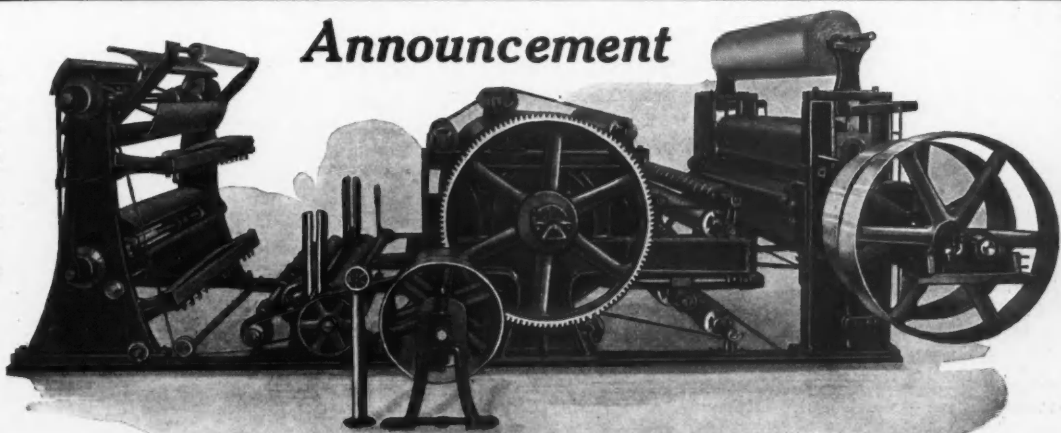
Standard Felts for Finish
and
VELURE Felts

are made only by

LOCKPORT FELT CO., Newfane, N. Y.

Adopt the VELURE System for Class

Announcement



A great deal of time, thought and money has entered into the development of this latest type Crepe Machine. No effort has been spared to make it as complete and practical as possible. The workmanship is the result of our twenty-four years' experience as designers and builders of paper mill machinery.

The diameter of the dryer is 48 inches by 84 inch face.

This machine can be built in any desired width and with any number of dryers. Prices quoted on request.

It is equipped with drum winder and double automatic collapsing reel.

We also manufacture Napkin Folders, Rapid Toilet Winders, Pneumatic Bundling Machines and Baling Presses, and Soft Roll Rewinders. Also Paper Bag Bundling Press. *Write for complete catalog.*

HUDSON-SHARP MACHINE COMPANY

Green Bay, Wis.

Trade Marks Department

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

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

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

ARIEL—No. 165,739. White-Washburne Company, Inc., Hinsdale, N. H. For toilet paper.

LILLEN—No. 165,740. White-Washburne Company, Inc., Hinsdale, N. H. For toilet paper.

SILVETTE—No. 165,741. White-Washburne Company, Inc., Hinsdale, N. H. For toilet paper.

BARNARD'S MASTERPIECE BOND—No. 165,653. Geo. D. Barnard Stationery Company, St. Louis, Mo. For writing paper.

TIDEWATER PAPER MILLS Co., Brooklyn, N. Y., within rim of circle with picture of sailing boat on waves. No. 165,249. Tidewater Paper Mills Company, New York. For news print paper.

GLENDORA—No. 163,810. C. P. Lesh Paper Company, Indianapolis, Ind. For writing, printing and book paper.

"SANICO"—No. 163,300. Jerome Wyle, doing business as Sanitary Cup and Specialty Company, Albany, N. Y. For toilet paper and paper towels.

RULE-RITE—No. 163,485. Woelz Bros., Appleton, Wis. For writing and ledger paper.

KNICKERBOCKER BOND—No. 163,529. J. J. Murphy Paper Company, Inc., New York. For bond paper.

SHEEPSKIN—No. 162,580. Rose & Frank Company, New York. For tissue paper mainly used for carbonizing purposes.

LIN-COT—No. 162,813. Gilbert Paper Company, Menasha, Wis. For ledger and bond paper.

GEORGE PAPER CORPORATION, Albany, N. Y., within rim of circle and words "Quality Service" in center. No. 162,404. The George Paper Corporation, Albany, N. Y. For toilet paper, paper towels and paper napkins.

INTERNATIONAL BOND—No. 160,038. Whiting-Plover Paper Company, Stevens Point, Wis. For bond papers made principally from bleached sulphite pulp or rag stock or combination of both.

SHARON FABRIC across vertical oval—No. 125,502. Highland Manufacturing Company, Holyoke, Mass. For writing, typewriting, printing papers; papeteries; writing, correspondence and index cards, and writing tablets and pads.

PETER RABBIT—No. 162,931. William H. Johnson, New York. For writing paper, wrapping paper, pencils, pens, blank books, bill files, bill heads, bill straps, blank forms; albums for holding pictures, photographs, composition books, envelopes, account books, elastic rubber bands, chalk crayons, tailors' chalk confetti, crepe paper and cardboard.

AUTHOR'S LINEN—No. 125,501. Highland Manufacturing Company, Holyoke, Mass. For writing, typewriting and printing papers, papeteries, writing, corresponding and index cards, and writing tablets and pads.

OLD DUTCH above Dutch landscape in oval—No. 166,858. Sauquoit Toilet Paper Company, Inc., New Hartford, N. Y. For toilet paper.

TOILTEX—No. 166,200. National Paper Products Company, San Francisco, Cal. Toilet paper.

PICTURE of hornet and nest—No. 164,326. C. P. Lesh Paper Company, Indianapolis, Ind. For writing, printing and book paper.

WHITE HEATHER—No. 166,670. Marshall Field & Co., Chicago. For writing paper and envelopes.

TEXTAN—No. 163,148. John A. Fisher, Dallas, Tex. For wrapping paper, tissue napkins, crepe napkins, and writing tablets.

CAROLAWN—No. 125,504. Highland Manufacturing Company,

Holyoke, Mass. For writing, typewriting, and printing papers, papeteries, writing, correspondence, and index cards, and writing tablets and pads.

CORRECTION

SUPERB No. 162,579. Rose & Frank, New York. For tissue paper mainly used for carbonizing purposes. In the issue of August 17 this was incorrectly printed as Superib.

CERTIFICATE BOND AGENTS MEET

(Continued from page 30)

Mr. and Mrs. Howard Rowe, Dobler & Mudge, Baltimore. G. R. Tolen, Midland Paper Company, Chicago.

J. F. Miller, Choze-Stevens Paper Company, Detroit. F. W. Wilson, Blake, Moffitt & Towne, New York.

S. G. Megargee, Megargee Brothers, Scranton.

G. A. Manz, J. & F. B. Garrett, Syracuse.

L. R. M. Gardner and T. C. Gregory, R. L. Green Paper Co., Providence.

W. H. Rourke, Rourke-Eno Paper Company, Hartford.

Chas. A. Esty, Chas. A. Esty Paper Company, Worcester.

Mr. and Mrs. G. A. Mathews, New Haven Paper Co., New Haven.

S. G. Garner, Newark, N. J., and B. E. Linde, Miss Elizabeth Linde, G. E. Linde Paper Company, New York.

A. L. Oman, Paper Supply Company, Minneapolis.

E. A. Petrequin, Petrequin Paper Company, Cleveland.

C. K. Judd and Mr. and Mrs. P. M. Judd, Judd Paper Co., Holyoke.

D. P. Cole and Mr. F. P. Holdridge, Eastern Paper & Supply Co., Springfield, Mass.

Mr. Thacker and Thos. Hamilton, Thacker-Craig Paper Co., Springfield, Mass.

Brad Stephens, Brad Stephens & Co., Boston.

Tim Thrift, American Multigraph Sales, Cleveland.

Harry R. Wellman, Amos Tuck School, Dartmouth College, Hanover, N. H.

E. St. Elmo Lewis, Campbell-Ewald Company, New York.

Mr. and Mrs. L. D. Post, A. A. Tanyane, Lionel Walden, THE PAPER TRADE JOURNAL, New York.

Mr. and Mrs. C. A. Crocker, Miss Elizabeth Crocker, Mr. R. F. McElwain, Miss Harriet McElwain, Arthur H. Hill, Joseph E. Holmes, Mr. and Mrs. S. L. Bush, Mr. and Mrs. C. H. Barr, Mr. and Mrs. Gordon Blanchard, Mr. and Mrs. Thos. Harrington, Mr. and Mrs. P. W. Gridley, Mr. and Mrs. E. C. Tucker, Frank J. Roche, Hobart J. Shanley, Jr., Edson S. Dunbar, and Walter A. Scott of Crocker-McElwain Company.

Mr. and Mrs. S. S. Rogers, Mr. and Mrs. W. L. Nixon, Mr. and Mrs. W. E. Perry, Mr. and Mrs. H. E. Lindquist, Mr. and Mrs. K. R. Bunce, W. S. Cummings, and Howard A. Casey of Chemical Paper Manufacturing Company.

To Sell Papeteries for American Writing

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., October 2, 1922.—A well-deserved promotion is announced by the American Writing Paper Company in the appointment of Charles G. Neidel to a position as salesman in the section of papeteries under George M. Holbrook.

Mr. Neidel has been with the big company for three years as secretary to Carl E. Lincoln, general sales manager.

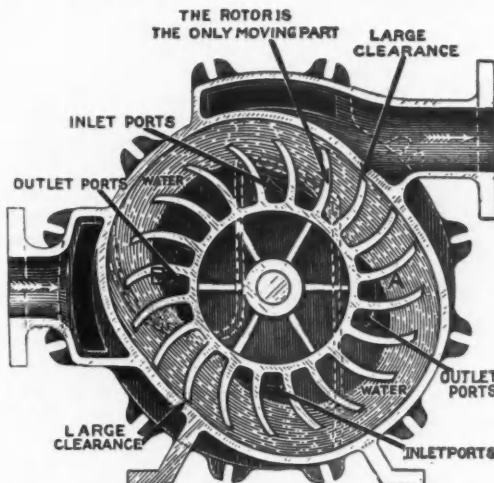
Mr. Neidel is a graduate of the Springfield Technical High School, commercial course, and before his association with the American Writing Paper Company was chief clerk and accountant for the City of Springfield, Department of Streets and Engineering.

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.

New York Trade Jottings

John Kepke, of the S. K. F. Company, left last week on a business trip to Europe.

* * *

John Matthews, chief of the Paper Division of the Department of Commerce, at Washington, was in New York the early part of this week.

* * *

D. C. Everest, secretary and general manager of the Marathon Paper Mills, Company, of Rothschild, Wis., is expected in New York, Friday, October 6.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, who returned to his office last week after a brief period of illness, leaves for Washington Wednesday night on business.

* * *

Walter Hicks, of the firm of Daniel M. Hicks, Inc., 200 Fifth avenue, New York, is now away on a two weeks' vacation. He is scheduled to return to New York Tuesday of next week.

* * *

L. M. Boomer, managing director of the Hotel McAlpin, New York, last week announced the selection of the basic books in the paper industry for inclusion in the recently instituted business library of the hotel.

* * *

J. J. Harpell, president and managing director of the Industrial and Educational Publishing Company, Limited, Garden City Press, of Gardenvale, Que., which publishes the *Pulp and Paper Magazine*, was among the New York trade visitors of the past week.

* * *

The A. P. W. Paper Company, with offices at 200 Fifth avenue, New York, has recently issued an attractive little booklet of 84 pages containing photographs of the officials, department heads and salesmen of the company as well as describing the converting plant and mills.

* * *

The F. J. McCarthy Company, manufacturer of steno and composition books, pads, folders, index cards, etc., announces the removal of its New York office to its factory at Bush Terminal Building No. 1, 233-37th street, Brooklyn, N. Y., where its production facilities are greatly enlarged.

* * *

The Maurice O'Meara Company, packer and dealer in foreign and domestic mill supplies, announces the arrival of Harry Schwarz, of the firm of Alfred Schwarz, of Berlin, Eberswalde and Schonlanke, Germany, who will stay in America for a few weeks visiting the principal cities and mills of this country with a view to enlarging his business.

* * *

The F. S. Pearson Engineering Corporation, Fisk Building, 57th street and Broadway, New York, has re-established its department for industrial management and technical auditing of industries and public utilities. This department will be carried on together with the corporation's usual work of financing, developing, constructing and designing engineering projects and industrial plants.

* * *

Under date of September 27, Owen Shepherd, treasurer of the International Paper Company, 25 Broad street, New York, announced that the board of directors of that company had declared a regular quarterly dividend of one and one-half per cent on the preferred capital stock of the company, payable October 16, 1922, to preferred stockholders of record at the close of business October 6, 1922.

"The disappearance of the forests of New York State has meant the actual destruction of villages, when whole groups of wood using industries have moved westward to follow the productive forest," was the observation of Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, in his address on "The Forest and Paper Industry" at the New York Botanical Garden at Bronx Park, Sunday afternoon, October 1.

* * *

Reservations for the salesmen's banquet, to be held in Chicago during Paper Week, are coming in to the offices of the American Paper and Pulp Association so rapidly that late comers may have difficulty in securing covers. Dr. Hugh P. Baker, executive secretary of the Association, is also secretary of the Salesmen's Association. O. M. Porter, secretary of the Woodlands Section, is handling the New York end of the plans for the salesmen's convention. Many paper executives are securing reservations for the salesmen's banquet, according to Warren B. Bullock, director of publicity for the American Paper and Pulp Association, in order that they may get a line on the problems that are confronting the paper salesman today.

* * *

The Joint Committee on Paper Machine Wires, representing makers of Fourdrinier wires and the Technical Association, held a meeting last week at the offices of the American Paper and Pulp Association, 18 East 41st street, New York. The representatives of the wire manufacturers were: E. C. Spear, Cheney-Bigelow Wire Works, Springfield, Mass.; F. W. Cabbie, Cabbie-Excelsior Wire Manufacturing Company, Brooklyn; C. H. Nealley, Eastwood Wire Manufacturing Company, Belleville, N. J.; C. Zimmerman, W. S. Tyler Company, Cleveland, Ohio. Those representing the Technical Association and users of wires were: R. O. Harper, B. D. Rising Paper Company, Housatonic, Mass.; J. O. Mason, Laurentide Company, Limited, Grand Mere, Que.; George D. Bearce, News Print Service Bureau, New York, and W. G. MacNaughton, secretary of the Technical Association.

Bids Let for Hammond Bag & Paper Co.

[FROM OUR REGULAR CORRESPONDENT.]

WELLSBURG, W. Va., October 2, 1922.—The R. R. Kitchen Company, contractors of Wheeling, have been awarded the contract for the construction of the new plant of the Hammond Bag and Paper Company at Wellsburg, and will begin work immediately on the building.

The building will be constructed on the most modern factory principles and will be fireproof throughout. The plant will be located between Twenty-second and Twenty-fourth streets, Wellsburg, and will occupy both blocks.

No actual estimate of the cost has been published, though it is understood to be in the neighborhood of \$150,000. Equipment and fixtures to be installed will be the most modern in paper manufacture.

Machinery and equipment will be installed as soon as enough of the new structure has been erected to house the machines. Work will be in progress in the building long before the final touches will have been put to the construction work.

T. H. Hammond, president of the Hammond Bag and Paper Company, stated that his plant would be the finest in this section of the country. Heretofore, his work has been done in smaller structures in Wellsburg, but with the growth of the business, the need for machinery and equipment of more efficient type was needed and will be installed.

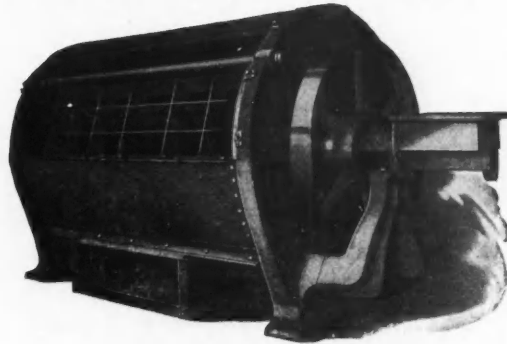
The company will manufacture manila rope paper, flour, cement, lime rock, etc.

The officers of the company are T. H. Hammond, president and general manager; D. A. Burt, vice-president; M. J. Davis, secretary, and Chas. H. Beall, treasurer.

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low
Power
and
Upkeep Expense



Delivers
Rejections Free
from Good
Stock

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

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

WORKMAN **OFFICE WORKER** **BANKER** **NURSE** **HOTEL** **GUEST**

Let Them Drink to your business health in cups you sell

each drink a cup—each cup a sale for you and at lowest cost of any cup on the market.

At such prices **SALES RESISTANCE IS NEGLIGIBLE** and our direct advertising assistance in your city will get immediate results as it is now doing in many cities.

Burt's Paper Drinking Cups are made of fine white paper, without wax to make drinks taste, and are reinforced so holders are not necessary. They are kept under glass and cannot be wasted or soiled before use.

Cups retail at one fourth cent—dispensers at five dollars.

F. N. Burt Company, Ltd.
Paper Cup Division
Buffalo, N. Y.

BURT'S PAPER DRINKING CUP

Obituary

Daniel Lewerth

Daniel Lewerth, vice-president of Henry Lindenmeyr & Son, New York paper merchants, it was learned just as this issue of the PAPER TRADE JOURNAL was going to press, died last evening, October 3, at the Lenox Hill Hospital following a brief illness. A more extended obituary of Mr. Lewerth will be printed in next week's issue.

Hale P. Kauffer

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 30, 1922.—Hale P. Kauffer, one of the founders of the Bryant Paper Company and made independently wealthy through the success of that concern, died at his home here, Thursday. The end came almost instantly and was while he was at the breakfast table. He was over 80 years old. Mr. Kauffer was at one time vice-president of the Bryant Paper Company and later chairman of the board of directors. Several years ago he was also president of the Home Savings Bank.

Herbert C. Follinger

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, October 2, 1922.—Herbert C. Follinger, manager of the Chicago office of the Chain Belt Company, died of pneumonia at his home in Chicago, on September 27. He had been ill but a few days, and the announcement of his death will come as a shock to his many friends in the industrial world, where he was well known.

Mr. Follinger was 38 years of age at the time of his death, and was born at Fort Wayne, Ind. In 1902 he graduated from the Chicago Manual Training School, now part of the University of Chicago, and entered the employ of the Otis Elevator Company. He became associated with the Chain Belt Company in 1914, and in 1916 was appointed District Manager for the Chicago Territory.

J. A. Remington Heads New Paper Company

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., October 2, 1922.—John A. Remington, president of the Norwood & St. Lawrence Railroad Company and for years connected with the paper manufacturing business in the Remington group, has been appointed resident manager of the Oswegatchie Paper Company, Inc., and will take up his new duties at once. He is a stockholder of the new corporation and at the first meeting was elected to the board of directors.

The selection of Mr. Remington as manager of the business of the new company is regarded as a very hopeful indication of future success. He comes from two generations of paper makers, being the son of the late C. H. Remington and grandson of the late Charles R. Remington, both of whom were men of large success in the trade. When he got through his course in Clarkson College he entered his father's mills at Norwood, Norfolk and Raymondville and rapidly advanced to a responsible position. He later came to the offices of the company in this city where his experience was carried into the accounting field.

For the past three years Mr. Remington has been president of the Norwood & St. Lawrence Railroad Company and has lived at Norwood where he was active in the detail conduct of the line and where he has become a highly respected citizen. Ralph B. Maltby is vice-president of the company, Franklin P. Wadley is treasurer and general manager, M. D. Bennett is superintendent and J. A. Quinlan is general freight agent. The road is now owned and operated by the Hanna Paper Corporation. It is expected that Mr. Bennett will assume the active management, at least for the present.

The construction work on the new Oswegatchie Paper Company mill at Natural Dam will be started soon, but Mr. Remington will remove his family to Gouverneur at once and take charge of affairs of the company.

Paper Mill Forests of Lake States to Meet

CHICAGO, October 2, 1922.—Forestry problems of the lake states, from the standpoint of the paper industry will be featured at the convention of the Woodlands Section of the American Paper and Pulp Association on October 17, Tuesday of Paper Week at this city.

So much attention has been devoted to forestry by the paper mills of Wisconsin, Minnesota, Michigan and Ohio, that there has been a suggestion for the forming of a special western division of the Woodlands Section, to handle the particular forestry problems of that region. This will be one of the subjects for discussion at the Chicago meeting.

Such local problems of the lake States will be discussed as methods of buying pulpwood, proposed demonstrations of tractor logging in the woods, pulp and pulpwood statistics, local woods operations problems and the advisability of purchasing rough or peeled hemlock. The lake States mills are using large quantities of hemlock, and many are aiding the cause of conservation by utilizing the waste of saw mills, which has hitherto been burned as refuse.

Reforestation, one of the leading questions discussed at meetings of eastern paper mill foresters, will not be so prominent in the western meeting, as reforestation is not so extensively practiced by the mills in the West as in the East.

Nekoosa-Edwards Employees Get Paper Courses

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 2, 1922.—University of Wisconsin corresponding courses in papermaking are to be offered employees of the Nekoosa-Edwards Paper Company, through co-operation with the University of Wisconsin extension division, it was announced following a conference last week. Employees are to pay costs of the instruction but on completion of the course the company will refund all money expended. The plan will include the paper plants at Nekoosa and Port Edwards.

The correspondence courses, which were described in detail several weeks ago in the PAPER TRADE JOURNAL, are offered by the university in co-operation with the Forest Product laboratory. A nominal charge is made for the instruction. It is proposed to enable men employed in paper mills to gain an understanding of the chemical and mechanical processes employed in the manufacture of paper and pulp and fit them for more lucrative positions.

F. L. Carlisle Inspects Mills

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., October 2, 1922.—A trip of inspection of the St. Regis Paper Company and the Hanna Paper Corporation mills is being made by President Floyd L. Carlisle. He came up from New York Monday morning and with local officers of the company proceeded at once to Deferiet. Tuesday he plans to go to Norwood, Norfolk and Raymondville to inspect conditions at the mills there.

New News Print Plant

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 2, 1922.—The Premier Paper and Power Company is preparing to install a standard news print machine in its plant at Hartville, N. S. The machine will have a capacity of 15,000 tons a year. In order to provide the necessary power the company is making an additional development of 5,000 horsepower on the river.

Agents
SUNDS AKTIEBOLAG
STRONG SULPHITE
indirect cooking

PERKINS-GOODWIN CO.
 NEW YORK
PULP and PAPER

Agents
A/S Tøten Cellulosefabrik
BLEACHED AND EASY BLEACHING
SULPHITE

WOOD PULP

QUALITY BRANDS



HISSMOFORS	Strong Unbleached Sulphite
OSKARSTRÖM	Easy Bleaching Sulphite
DIESEN . . .	Bleached Sulphate
ESSVIK . . .	Unbleached Sulphite

STOCKS CARRIED ON DOCK FOR PROMPT DELIVERY

For Samples and Prices Address

Nilsen, Lyon & Co., Inc.

140 NASSAU STREET NEW YORK

Recent Incorporations

SANI-SEAT COMPANY, Flushing, New York, paper products. Capital, \$15,000. Incorporators, J. L. and G. and G. Schaefer, Jr. Attorney, A. H. Rosenbaum, 81 Broadway.

ATLANTA ENVELOPE CORPORATION, Wilmington, Delaware, manufacture. Capital, \$250,000. Delaware Registration Trust Company.

CAPITAL INCREASES

TRI-STATE PULP AND PAPER CORPORATION, High Bridge, N. J., Delaware, \$800,000 to \$13,200,000.

New Chief of the Paper Division

John Matthews, Jr., chief of the paper division of the Department of Commerce, who recently took up this work, has made considerable progress and is now in a position to be helpful to



JOHN MATTHEWS, JR.

paper manufacturers of the country, particularly those who are interested in export trade.

Mr. Matthews has been closely associated with the paper industry for a number of years and was originally appointed to his present position at the suggestion of the American Paper and Pulp Association, whose members co-operate with him through the medium of the advisory committee appointed by Secretary of Commerce Hoover. This keeps him in close touch with the requirements of the industry. He has had experience in marketing paper in all the principal markets of the world and has traveled extensively through the principal South American markets. He was at one time foreign manager in Buenos Aires for one of the largest paper exporting organizations in the United States and had also had experience with this same concern as manager in their New York office of various departments handling the sales in the principal foreign markets and buying for those markets. He is, therefore, very well fitted to direct the work of investigation concerning foreign markets for paper, pulp, paper products, printing inks, printing and book-binding machinery.

Gregg Pump Co. to Locate at Kalamazoo

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., October 2, 1922.—Another industry has been added to the list of Kalamazoo's manufacturing concerns by the acquisition of the Gregg Pump Company of Kansas City, Mo.,

builders of high grade pumps used extensively in paper mills. The fact that Kalamazoo is the center of the paper mill industry was largely responsible for inducing the concern to locate here.

Walter S. Gregg, president of the Gregg Pump Company, has leased from Fred P. Crockett, the building at 1405 Fulford street, the lease also carrying the right of purchase with it. Only minor repairs will be required to put it in first class condition, providing a structure of from 15,000 to 20,000 square feet of floor space. The first carload of equipment and machinery has been shipped from Kansas City and the plant should be in full operation by the latter part of October.

"The building has been occupied by the Reed Foundry and Machine Company for several years," said Mr. Crockett. "They now have ample room in their new plant. Mr. Gregg has asked that all machinery and equipment be moved at the earliest date possible as he intends to renovate the building and beautify the grounds about it, thus providing an attractive concern."

Mr. Gregg came to Kalamazoo at the time of the national convention of paper mill superintendents, June 1, and announced at the time his desire to locate here, being delighted with the city and the possibilities of expansion. He has been greatly handicapped in the past by enforced long shipments.

Lumbermen Hit by Car Shortage

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 25, 1922.—Contending that the lumber business is being hampered through difficulty in obtaining freight cars in the East to ship wood and lumber, representatives of the limit holders and other lumbermen interested are to wait on the Federal Government this week, asking for relief. The situation is becoming acute especially from Montreal to Campbellton, N. B.

With a fairly good demand for lumber, limit holders are, it was said, unable to ship any wood. The result is that unless immediate steps are taken to bring cars from the western provinces, through the non-delivery of orders, mill owners will find it difficult to extend their operations this fall and winter, as they will have difficulties in obtaining support from the banks.

David Champoux, a well-known lumberman, who is one of those to wait on the Government next week, says: "We recognize the necessity of having a large number of cars in the Prairie Provinces at this time of the year to handle the crop, but we believe that the East is being sacrificed in this respect." On the other hand J. E. A. Dubuc, of the Chicoutimi Pulp and Paper Company, stated that the lumber business was being interfered with greatly by the embargo established on all but necessities in the United States.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 4, 1922.—The Purchasing Officer of the Government Printing Office will open bids on October 9, for the following paper items. 50,000 pounds (50,000 sheets) of 36 x 38—No. 50 chipboard.

38,500 pounds (500 reams) of 38 x 48—77 white rag M. F. printing paper.

10,440 pounds (100 reams) of 26½ x 41—104 India tint coated cover paper.

21,900 pounds (300 reams) of 32 x 48—73 white S. and S. C. printing paper.

The purchasing officer of the Government Printing Office has received the following bids:

15,000 lbs. 29 x 43—53 White M. F. Printing Paper: Bryant Paper Company, at \$.0875 per lb.; Old Dominion Paper Company, \$.1398; The Whitaker Paper Company, \$.1347; The Etna Paper Company, \$.12; Dobler & Mudge, \$.117.



“The Reason My Production Cost Dropped”

“I never realized that the pipe in my mill had any control over production. It has. Years ago I used any make of pipe. The less I paid for it, the better. But I soon discovered that my “cheap” pipe was leaking at the joints and rapid corrosion forced us to replace whole sections. And, of course, every time we replaced pipe, production in that particular department was slowed up. Less production meant increased production costs. That was when I started to study the situation.

“A little advice from an efficiency expert put me straight. He said, when I put my problem up to him: ‘That’s simple—use Reading Genuine Wrought Iron Pipe. It lasts two to three times longer than the best steel pipe.’ I took his advice.

“Today, after my one and only installation of Reading, I find my production cost line going downward. The joints are tight—they never leak. And I never saw pipe resist corrosion so well. I figure that I’ll save thousands of dollars through the use of Reading Genuine Wrought Iron Pipe.”

Write for bulletins on pipe installations and costs.

READING IRON COMPANY
Reading, Pennsylvania

The World’s Largest Producers of Genuine Wrought Iron Pipe

Boston
New York
Philadelphia

Baltimore
Pittsburgh
Cincinnati

Chicago
Fort Worth
Los Angeles

READING
GUARANTEED GENUINE
WROUGHT IRON PIPE



Vortex
REG. U.S. PAT. OFF.
DRINKING CUP
(Patented)
June 20, 1916, Reissued June 13, 1922;
March 26, 1918;
April 18, 1922;
Other Patents
Pending
* * *
Canadian and
Other Foreign
Patents Granted
and Pending
“One who manufactures,
who uses, or who sells a
device that infringes
a patent is equally
an infringer.”
Look for our
trade-mark
“VORTEX”
on all car-
tons and
tubes

Sales Closing Features

These superior features speed the sales of Vortex

- 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.

Write for Particulars

THE VORTEX MFG. CO.
421-431 N. Western Avenue
Chicago, Ill.

*Canadian: Wm. A. Rogers Ltd., Toronto, Manufacturers
and Distributors for Canada*

Vortex
Drinking Cups

Union Sale of Pulp in Japan

OSAKA, Japan, September 9, 1922.—Aiming to avoid undesirable competition and further to improve efficiency of sale, the four Japanese pulp manufacturers, namely, Oji, Fuji, Yalu (Corea), and Karafuto, have organized a new corporation titled "The Union Pulp Company," with a capital of yen 3,000,000.

The total output of sulphite pulp in Japan at present will roughly amount to 114,000 tons per year, from which deducting 14,000 tons manufactured by the Yalu Pulp Company which is now out of operation entirely, the balance of 100,000 tons will represent the present output of pulp in Japan. For this, there is a demand amounting to 100,000 tons in the island of Japan, that is to say, if there were no importations or no stock in the market, the relation between demand and supply of pulp would balance in Japan. However, last year Japan imported pulp to the extent of 40,000 tons from Canada and Sweden, either of which were quoted c. i. f. Japan ports at 5.8 sen to 6 sen per pound, while the domestic products are quoted at from 6 sen to 7.2 sen. Therefore, in order to check the importation of pulp, Japanese pulp must be lowered to the same level as imports or at less. However, Japanese timbers available for wood pulp making are mostly the possession of the government, which quotes manufacturers higher. In addition, wood pulp machines are imported and cost more than if bought in Japan and if the wages be added thereto, pulp manufacturers cannot get any profit unless pulp is sold at above 7.5 sen per pound. Because of these facts, the Union Sale has been created with a view to check the importations of foreign made pulp, by supplying pulp at the cheapest price possible.

The Finance Department of Japan has unofficially announced an abolition of import tariff on foreign pulp which is at about 2/10 sen per pound with the understanding that the pulp industry in Japan has now reached the stage where it can favorably compete with the imports. However, in view of conditions under which Japanese pulp is being placed now, if such scheme of the government is carried out, it will be a heavy blow to pulp manufacturers generally and they have therefore united in submitting a written statement to the government with a view to maintaining the present tariff rate.

Valley Paper Mills Co. Awards Contract

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 3, 1922.—The Valley Paper Mills Company of Neenah last week awarded the contract for construction of the first unit of its new paper mill to Appleton Construction Company. The contract price was not announced. It is said work is to be started at once so that the mill will be ready for occupancy next summer or fall.

The main building is to be constructed of concrete and brick. It will be 627 feet long by 175 feet wide, two stories high. Edward Wettengel of Appleton is the architect. The building, as first proposed, was 800 feet long and nearly 200 feet wide but plans were modified.

The Valley Paper Mills Company was organized more than two years ago to manufacture glassine and grease proof paper with a process perfected by Emil Pohl. The mills were located in Neenah because a plentiful supply of pure water is available there.

Wages in the Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 2, 1922.—The Bureau of Labor Statistics, Department of Labor, has compiled figures based on reports received from various industries, showing the employment and wages paid in these industries in the months of July and August of this year. According to the reports, there were 7,081 persons employed in 40 paper box factories in July as compared with 7,400 persons employed in these factories in August, showing an increase of 4.5 per cent. The payrolls in these factories increased from

\$141,787 in July to \$144,523 in August, showing an increase of 1.9 per cent.

In 90 paper and pulp factories there were 32,871 persons employed in July as compared with 32,875, which was an increase of less than one-tenth of one per cent. The payrolls in these factories increased during this period from \$761,895 in July to \$789,396 in August, an increase of 3.6 per cent.

The Bureau also shows figures comparing the employment and wages paid in 66 paper and pulp factories in the months of August, 1921, and August, 1922. In August of last year there were 20,316 persons employed in these 66 factories as compared with 23,136 persons employed in the same month of this year, showing an increase of 13.9 per cent. The payrolls also increased from \$507,919 in August of last year to \$556,869 in August of this year, showing an increase of 9.6 per cent.

To Clear Up Points Connected With Trade Associations

WASHINGTON, D. C., October 4, 1922.—Senator Edge of New Jersey plans to reintroduce in amended form his bill to amend the anti-trust laws to clear up doubtful points in connection with trade associations at the forthcoming session of Congress. He has consulted Secretary Hoover of the Department of Commerce in regard to the legislation, and his new bill will meet some of the suggestions of Mr. Hoover, it is said.

The bill will seek to amend the Clayton Act so as to permit interstate trade associations to file with the government the plans of their operations, with the understanding that if these operations do not violate the restraint of trade acts they may be proceeded with.

Work is going ahead at the request of Secretary of Commerce Hoover on a manual of trade associations. The various divisions and bureaus of the Department of Commerce have looked into the subject quite fully during the past few months and various data are being prepared by officials of the department. In addition to that, it is understood that a number of trade association executives have volunteered their services and are helping to compile this new work. The Secretary has stated that he does not know exactly in what form the publication will be issued, whether as a report or as a manual.

Du Pont de Nemours & Co. Announce New Dye

E. I. Du Pont de Nemours & Company announces the development of a dye known as Pontamine Fast Blue RL, which is a direct color of reddish blue shade and which the company states possesses very good resistance to light for a color of this class. It is suitable for dyeing paper and should find considerable use for shades in which good fastness to light is required.

A fast pink dye, known as Pontamine Fast Pink G, has been developed by E. I. du Pont de Nemours & Co.

This color was imported in fairly large quantities before the war and has since been brought in from abroad under license. "Pontamine Fast Pink G is suitable for dyeing paper and should find considerable use for bright pinks of good fastness to light and acid, and fairly good fastness to alkali."

Resigns Presidency of Nashville Pulp Paper Co.

JACKSONVILLE, Tenn., October 2, 1922.—R. J. Cullen has resigned the presidency, of The Nashville Pulp and Paper Company. Although Mr. Cullen is one of the largest stockholders of this company he has decided to give his undivided time to The Bastrop Pulp and Paper Company.

Mr. Cullen built the Bastrop Mill and has been first vice-president and manager since its organization.

A kraft paper mill, to use the whole output of the sulphate pulp mill at Bastrop will be built at once.

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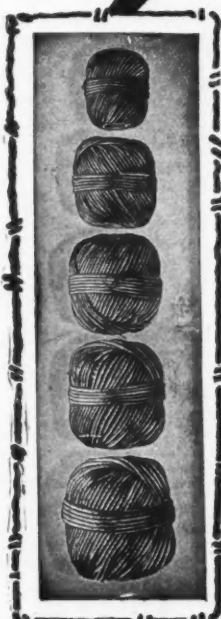


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Editorial

Vol. LVVX New York, October 5, 1922 No. 14
FIFTY-FIRST YEAR

Lockwood's Directory Out

The edition for 1923 of Lockwood's Directory of the Paper and Allied Trades has just been issued. Although fewer new pulp and paper mills, both in the United States and Canada, have been placed in operation during the year since the last edition of the directory was issued, than in some years past, many of the mills, and especially the more representative ones, have made important changes of various kinds which have considerably changed the complexion of the mill section of the directory.

In the Classified Section of the products made by the mills, many interesting changes will be observed which doubtless are due, among other causes, to the fact that mills which found it profitable to change to certain varieties of paper for which there was an abnormal demand just after the war, are now diverting their machinery back to the products for which it is better suited.

Because of circumstances influenced by hard times, it has been necessary to eliminate not a few names in other sections of the directory, but because of the indomitable spirit that has always characterized American business, many more than a sufficient number to replace these, have begun new ventures, causing all departments to show a really surprising expansion.

In collecting the material for this volume, the publishers, due perhaps to insisting on thoroughly accurate data, have met with some misunderstandings which should not exist as the purpose of each section of the directory is obvious, or is made plain by an introductory note. For instance, only plants making paper from pulp may be listed in the Mill Section. Converters are not included here, nor are they included in the Classified Section which is intended simply for a recapitulation of the products mentioned in the mill reports. In the section devoted to Paper Specialties, only actual converters and not distributors may be listed. In the section of Watermarks and Brands, only actual owners and not simply distributors of such Watermarks and Brands may be listed.

Where misunderstandings regarding questions such as the foregoing have arisen, there has been no intention on the part of the publishers to discriminate against anyone, but simply to make the directory as valuable as possible to the greatest number.

All the sections of this volume of the directory have been corrected with the greatest possible care and it is believed that it will continue to merit the confidence of all departments of the trade, which it has enjoyed for almost half a century.

The price of the directory is \$7.00. Orders should be sent to the Lockwood Trade Journal Company, 10 East 39th street, New York.

An Elaborate Report on Forestry

The report of the National Forestry Policy Committee of the Chamber of Commerce of the United States just made to the Board of Directors of the National Chambers is an elaborate work which cannot fail to be gratifying to every one interested in forestry. The

report is based on one of the most extensive investigations that has ever been made by the Chamber of Commerce of the United States, hearings having been held in connection with the investigations in many of the leading cities throughout the country.

The report has been divided into seven sections; Section 1 being devoted to the timber situation; Section 2, to lands available for producing timber; Section 3, to fundamental factors necessary to the application of forestry; Section 4, Federal leadership and co-operation with the States necessary to make State and private effort effective; Section 5, conditions which should govern Federal co-operation with the States; Section 6, research and waste elimination, forest surveys, and Section 7, summary of recommendations.

As a result of its import work the committee makes the following specific recommendations:

1. Increased appropriations by Congress for protection against fire, based on the principle of equal expenditures by Federal and State Governments.
2. That proper and as far as possible uniform tax laws covering idle lands, cut-over lands, and forest areas be at once adopted by each State. Young growing forests to be taxed on the principle of yield tax; the annual tax to be made only on the land at a nominal value.
3. That the Secretary of Agriculture proceed as rapidly as possible to acquire and replant or reseed where reproduction cannot be secured through natural means, so much of the 81,000,000 acres of waste land as can be acquired under existing statutes so as to protect the headwaters of navigable streams and thus increase the timber supply, and that the States and individuals acquire the remainder.
4. That it be within the discretion of the Secretary of Agriculture, as a condition of acquisition of any such waste land by the Federal Government, that the State wherein such land is situated shall appropriate an equal amount for the same purpose and that preference should be given to the States making such provision.
5. That Federal Legislation to be effective should be co-operative between the Federal Government, the State Government and the individual timber owner; the Federal Government in no event to bear more than the amount expended by the State and individuals for the same purpose.
6. That Congress enact necessary legislation providing for carrying out the four basic principles, with appropriations necessary to make the law effective; that no expenditure by the Government in any State shall exceed the amount expended by that State.
7. That all expenditures of Federal money under this Act in the State shall be conditioned on the State accepting and adopting the following four basic principles:
 - A. Appointment of a State Forestry or Conservation Commission with necessary enabling legislation.
 - B. Acceptance and adoption of reasonable rules formulated by the Forest Service of the Department of Agriculture whereby timber on lands unsuitable for agriculture shall be so cut, and the slash so handled, as to assure continuous production.
 - C. Adequate system of protection for fire.
 - D. Young growing forests to be taxed on principle of the Yield Tax. Annual taxes to be made only on the land at a nominal value.

8. That the Secretary of Agriculture, through the Forest Service, after consultation with State officials, formulate rules for making effective the above four basic principles which must be accepted and adopted by the State before it can share in the co-operative principle proposed between the Federal Government and the State.

9. That there shall be a National Forest Council, consisting of nine members one of whom shall be the U. S. Forester and the other eight appointed by the President, to serve without remuneration, and representing the viewpoints of the general public, the businessmen, the lumbermen, and the foresters. This Council to act in an advisory capacity to the Secretary of Agriculture.

10. That the work of Federal research and experiment in forest products be enlarged, and that appropriations by Congress for this purpose be increased.

11. Legislation by Congress with sufficient appropriation for a national survey and inventory, to be undertaken without any undue delay.

The report seems to furnish tangible evidence that the active interest of paper and pulp men among others of late in favor of more intelligently conserving our forest resources is bearing good fruit.

Foreign Paper Prices

The monthly average import price of news print, according to figures just issued by the Department of Commerce, continued to show the increase in price tendency which started in April. The average import price per pound for the month was .035 cents as compared with .0349 for June and .0491 for July of last year.

The average import price of ground wood per ton for July on the other hand showed a slight decline as compared with June, the figures for the former months being \$27.22 and for the latter \$28.18. The average price for July of this year, however, continued greatly in excess of July last year when the price was \$19.43.

The average import price of unbleached chemical pulp per ton for July was \$52.85 as compared with \$51.20 for June and \$72.21 for July of last year.

The average import price of bleached chemical pulp per ton for July was \$80.21 as compared with \$88.10 for June and \$107.18 for July of last year.

The average import price per cord of pulpwood for July was \$10.99 as compared with \$10.35 for June and \$13.68 for July of last year.

The monthly average export price of news print per pound for July was .045 cents which were also the figures for June as against .057 cents for July of last year.

The monthly average export price of wood pulp per ton for July was \$60.80 as compared with \$43.37 for June and \$41.10 for July.

Wausau Sulphate Fibre Co. to Build

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 2, 1922.—A new powerhouse for the Wausau Sulphate Fibre Company, to cost in the neighborhood of \$150,000 has been started. A huge spill gate is included in the construction project. It is one of the largest projects at Mosinee in several years. A hydro-electric generator to develop 2,500 horsepower is to be installed.

Plans for Chicago "Paper Week"

Plans are going forward so rapidly for the fall business conference of the American Paper and Pulp and allied associations that the complete program for the Thursday sessions of the association will be completed early next week.

The speaker for the Thursday afternoon luncheon will be a prominent business man who will be able to discuss the business problems of the day, and though definite arrangements have not been closed, it can be said that the afternoon luncheon orator will be a man of such national reputation that his words will be authoritative.

The Thursday forenoon program will be a business conference, with addresses by representatives of the two great groups of the paper industry, the manufacturers and the merchants. The merchants will be represented by two speakers, and the manufacturers by three, from the main subdivisions of the industry.

Two of the manufacturer speakers have already consented to speak. Thomas O. Ross, of the Hummel-Ross Company, who is president of the Pulp Manufacturers Association, will speak on raw materials, and D. Clark Everest of the Marathon Paper Company will speak on the situation among the manufacturers of coarse papers. The correspondence with fine paper manufacturers relative to a speaker to represent that group of the industry has not yet been concluded.

Meanwhile the Salesmen's Association has gone forward with its detailed plans for the meeting on Tuesday of "Paper Week." The speakers at the banquet have already been announced. Former Governor F. O. Lowden of Illinois, Edgar A. Guest and the Chaplain of the Association, Dr. George Craig Stewart. The forenoon session will be devoted to business problems and future work of the salesmen, while at noon there will be discussions of market conditions by secretaries of various associations.

The Salesmen's meeting is coming to be more and more an essential feature of the paper association conventions, and the Chicago meeting will have a foreman business session, a luncheon with business addresses, and the evening banquet, with an afternoon business session if the developments of the forenoon warrant it.

The noon luncheon will be an elaboration of the get-together luncheons which are now being held in Chicago and New York. The Chicago paper salesmen have found their luncheons so successful that they are being held weekly, and the fall conference luncheon will be modeled after the Chicago city weekly meetings. The New York salesmen have their luncheons monthly.

Forest Products Association to Meet

The Seventeenth Annual Meeting of the Empire State Forest Products Association will be held at Syracuse, N. Y., on Thursday, November 9, 1922. Through the courtesy of the New York State College of Forestry the morning and afternoon sessions will take place there.

The morning session is scheduled for ten o'clock and will be devoted entirely to business, including the election of officers and directors, the vote on the proposed constitutional amendment and the like.

The afternoon session which begins at 2 o'clock will be a joint one with the New York Section of the Society of American Foresters and to this all timberland owners of the State and others interested, are particularly invited. The subject of chief discussion will be the sample working plans for Adirondack softwoods and for Adirondack hardwoods.

The feature of the evening is the usual banquet at which the speakers will be men of prominence. Details of the entertainment are in the hands of Dean Franklin Moon and Professor Nelson Brown of the College.



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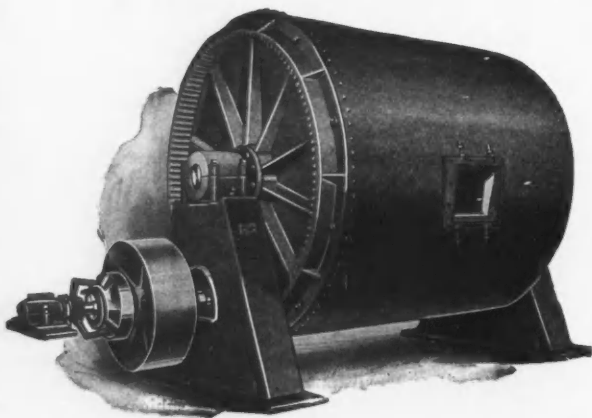
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Section of the **Technical Association of the Pulp and Paper Industry**



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Conducted by **W.G. Mac NAUGHTON, Secretary**

FIRST PROGRESS REPORT T. A. P. P. I. COMMITTEE ON WASTE IN THE INDUSTRY

The investigation of the waste incurred in the pulp and paper industry covers such a broad field that in the opinion of the committee and other members of the T. A. P. P. I. interested, all efforts to obtain original and new data should be confined to about two subjects that give promise of showing effective results in a comparatively short time. Further investigations can be made as the work progresses until the entire field of the pulp and paper industry has been covered.

The two most important problems seem to be the Mill effluent or white water losses and the pressing and utilization of bark for fuel.

It is the plan of the committee to make extensive tests on both of these subjects. Mills best equipped to do this work were selected and their technical departments are assisting in obtaining the data. However, it has not been necessary to interrupt the regular operation of the plant in the tests already conducted and the work has entailed very little added expense.

Mill Effluent

The question of mill effluent or white water losses involves not only the fibre loss, but also the extent of white water utilization. It is proposed to investigate to what extent it is possible to economically utilize white water in mills using different grades of paper and to establish as nearly as possible a "closed system." The actual fibre loss is being determined at a number of plants. The retention of fibres from white water on wire of different mesh will be determined as well as their microscopic study and measurement.

The question of save-all systems and their efficiency of operation enters into the problem and extensive data upon this subject is being collected and co-ordinated.

The method of study of fibre recovery and white water losses is outlined as follows:

1. Methods of Re-use of White Water.
 - (a) Strainer type save-alls.
 - (b) Ground wood mill.
 - (c) Chemical pulp mills.
 - (d) Bleach plant.
 - (e) Paper converting plant.
2. Methods of Recovering Fibre from White Water.
 - (a) Strainer type save-alls.
 - e. g., Bird, Improved, Oliver, etc.
 - (b) Filtration with felt or mat.
 - e. g., Fullner.

- (c) Gravity separation.
 - e. g., settling tanks, Dorr, Pusey and Jones, etc.
- (d) Centrifugal separation.
3. Measurement of White Water Losses.
 - (a) Methods of volume measurement of rejected white water
 - (b) Methods of sampling white water.
4. Data and Results.
 - (a) Actual losses.
 1. Volume of white water rejected.
 2. Total solids in white water in percent.
 3. Ash free fibre in white water in percent.
 4. Total pounds solids lost per ton of product.
 5. Pounds ash free fibre lost per ton of product.
 - (b) Efficiency of save-all systems.
 - To Save-all*
 1. Volume of white water.
 2. Solids in white water in percent.
 3. Ash free fibre in white water in percent.
 4. Solids in white water in pounds.
 5. Ash free fibre in white water in pounds.
 - From Save-alls*
 6. Volume of white water.
 7. Solids in white water in percent.
 8. Ash free fibre in white water in percent.
 9. Solids in white water in pounds.
 10. Ash free fibre in white water in pounds.
 11. Solids recovered in pounds.
 12. Ash free fibre recovered in pounds.
 - (c) Cost of operation.
 - (a) Factors affecting cost: overhead, operating and maintenance.
 - (b) Total cost per ton of product recovered.
 - (d) Quality and value of the recovered stock as a paper making material.
 - (e) The determination of the point of economy in reclaiming white water losses.

In order to obtain information upon the amount of work being done upon the question of mill effluent and fibre recovery an inquiry was sent out by the Forest Products Laboratory to approximately 400 mills in the pulp and paper industry. Partial returns from this questionnaire indicate that the white water testing is usually con-

fined to occasional sampling, measurements and observations rather than regular routine procedure.

Information will be available from 8 or 10 mills that have made or are conducting special white water tests. The indications are, from observation and the inquiries, that fibre losses varying from 2 per cent to 12 per cent or more are incurred in the manufacture of various grades of pulp and paper.

The most popular type of save-all appears to be the revolving strainer screens. The inclined screen save-all is finding favor in many mills due to its simplicity of construction, operation and low cost. The gravity settling tank is used by several mills with good results and a new type is being developed, the basis of which is gravity and coagulation by chemicals in combination. The centrifugal separation of fibre from white water is being studied by three equipment manufacturers.

The prevailing method of measuring the volume of white water is by means of the weir. Sampling methods are more varied and the usual method is to take an occasional sample manually. Several mills obtain automatic samples by means of a waterwheel sampler. At least two mills have a revolving arm sampler, driven by a very small motor, that dips up a small sample every few minutes. A continuous and automatic device at one mill consists of a small pipe and suction pump that obtains a small portion of the white water going to the sewer.

Bark Pressing and Utilization

Although the bark problem does not appear to be vital in some sections of the country, there is a vast amount of potential fuel value going to waste on account of the difficulty of utilization. It is necessary in some sections to dispose of the bark by running it into the rivers. Other mills are obliged to use more costly methods of disposal.

The Waste Committee co-operating with the Forest Products Laboratory and the News Print Service Bureau made a survey of the bark utilization problem by means of questionnaires to all mills manufacturing chemical and mechanical pulp.

Replies from about 50 per cent of the mills showed that 28 burned bark and refuse alone, 25 burned coal and bark in combination, 6 otherwise disposed of their bark refuse and 32 did not have bark or refuse. More than 20 of the mills estimated that the moisture in their bark varied from 60 per cent to 85 per cent and many indicated that they considered it of little heating value. The calorific value of the bark was estimated by the different mills from less than nothing to 3,500 B. t. u. per lb. as fired.

Extensive tests by the Forests Products Laboratory indicated the following average heating values of bark from dry stored wood:

<i>B. t. u. Per Pound (Bone dry)</i>	
Spruce	9590
Balsam	8970
Jack Pine	9870
Hemlock	9680
Aspen	8460

The heating value of river stored spruce was slightly lower, 9395 B. t. u. per pound, but the general results indicate that there is a large amount of available heat in bark if it can be mechanically reduced to about 50 per cent bone dry. Detailed information on this subject may be found in the preliminary report of the Waste Committee on, "The Utilization of Bark and Refuse as Fuel."

The important feature of bark utilization, where wet barking methods are used, is the mechanical extraction of water. The first step was to obtain authentic figures on the available equipment for pressing bark. The only bark presses on the market known to the committee are the following: The Fibre Making Processes Co., the Giant Nekoosa press and the Paulson press. The Economy Baler Co. is also developing a press for this purpose. The commit-

tee will be glad to learn of other developments of bark processes. The bark pressing data sheet was outlined as follows:

- Mill.....Date.....
- Duration of Test.....hours
- 1. Bark Press: type and make:.....
(Attach blueprint to illustrate the design of the machine).
- 2. Drum Barker: make:.....
(Indicate how water is used and other special conditions).
- 3. Kind of wood; species; from land or water storage:.....
(If from land storage, state length of time in the pile and indicate the condition of the wood. If from water storage, state how long the wood has remained in the water).
- 4. Method of feeding bark to the press; continuous or intermittent:.....
- 5. Percentage of time press actually operated during test:.....
- 6. Water per cent in bark from drums:.....
- 7. Water per cent in bark from press:.....
- 8. Total weight of pressed bark during period of test (Bone dry weight).....
- 9. Average power required to operate press:.....
- 10. H. P. hours per ton of bark:.....
- 11. Number of men required to operate press:.....
- 12. Man-hours per ton of bark:.....
(Specify how this item is distributed)

Note: State condition of press before and after test.
B. t. u. per lb. of bark from presses.
B. t. u. per lb. of dry bark.

Mill Tests on Bark Presses

Actual tests were made on bark presses through the courtesy of the Kimberly-Clark Co. and the Nekoosa-Edwards Paper Co. The bark going through the presses came from drum barkers running in water or with showers of water in the drums.

The bark averaged from 70 per cent to 85 per cent moisture entering the presses. The feed was continuous and practically automatic. The two types of roller presses reduced the moisture content to about 60 per cent. These tests appear to check with the normal operation as reported by the mills. The maximum power required is approximately 6 to 7 H.P. per foot width of press roll.

Through the courtesy of Pejepsco Paper Co. considerable information was obtained on the operation of the reciprocating plunger type of bark press. This press is apparently able to reduce the moisture content of bark from drums to about 50 per cent bone dry. Samples of bark pressed by this type of machine at the Nekoosa-Edwards Paper Co. gave approximately the same moisture content. The maximum power required is 25 H. P. and the operation is practically continuous and automatic.

Detailed information upon the bark pressing tests and other related data may be found in the supplementary report of the Waste Committee on, "The Mechanical Extraction of Moisture from Bark."

Bark as Fuel

The fuel value of bark containing varying percentages of moisture is indicated from the following table of theoretical computations based on:—

9,000 B. t. u. per lb. dry bark.
1,220 B. t. u. per lb. required to raise one lb. of water from 62° F. to 420° F.

Percentage Moisture in Bark as Fired	B. t. u. per lb. of Bark as Fired
75	1,335
70	1,845
65	2,365
60	2,970
55	3,380
50	3,890

The utilization of bark as fuel involves a study of the most efficient type of furnace and the best operating methods. The quantity and condition of available bark is also involved. The results obtained from using bark as fuel should be practically the same as those obtainable with hog or wood refuse. A number of evaporative tests on hog fuel are given in the report on "The Utilization of Bark and Wood Refuse as Fuel." These tests indicated that an overall efficiency based on the available heat of 40 per cent to 50 per cent was obtained with hog containing about 50 per cent moisture. Tests on wet hemlock tan bark show efficiencies of 44 per cent to 54 per cent using fuel containing about 65 per cent moisture.

The problem of refuse utilization has received some study in other industries. Authoritative evaporative tests on bagasse containing about 50 per cent moisture show a boiler efficiency of 61 per cent and an equivalent evaporation of 2.63 per pound of fuel as fired when burned in a newly developed type of refuse furnace.

Essential Points

In order to economically utilize bark the following points are apparently essential:—

1. The bark should be reduced to approximately 50 per cent bone dry and fed to the furnace with some degree of regularity.
2. The design of the furnace should provide for sufficient grate surface to give correct combustion and refractory walls to dry out the moisture.
3. Correct draft conditions for most efficient combustion should be determined and maintained.

Cost Keeping Methods That Show Broke Losses

A direct result of the attempt to cut down the waste incurred in supercalendering, rewinding and cutting of book paper at the Newton Falls Paper Company led to the development of cost records applying to these operations that show the cost of shrinkage or brokage in dollars and cents. This development is used in conjunction with the process cost system. It clearly shows the cost per ton of broke losses and agrees with modern accounting principles. The accounting staff of the News Print Service Bureau rendered advice in the arrangement of these particular items on the cost sheets.

The loss due to broke represents the difference between 100 per cent operation and actual running conditions. The stock is returned to the beaters and its scrap value may be disregarded because it immediately goes into the next batch of paper. Any broke of different color or furnish that is stored is practically held in suspension until the next run of that particular grade during the month, and its value, for all practical purposes, is the same as new stock.

Most mills indicate their broke shrinkages in tons and percentages for statistical records. The translation of these losses into dollars is a simple and effective way of bringing the fact before the executives, superintendents, foremen and operators. The broke loss percentages are proportional to the cost per ton due to brokage and the two figures in combination should emphasize the importance of this factor in operation.

Similar adjustments can be made on order cost sheets and in other cost keeping methods so that similar results may be obtained. The proposed method should be of great assistance in determining if the brokage cost on any particular order is consistently costing more than in other grades.

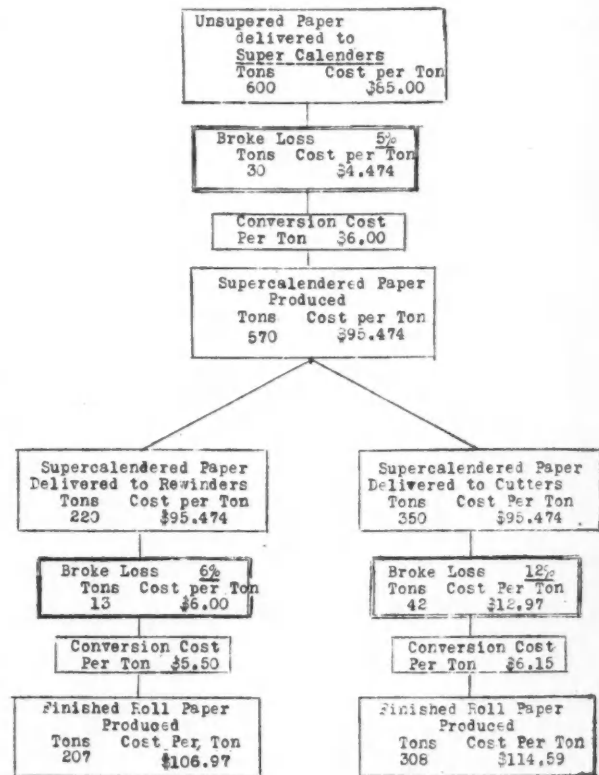
In the following chart and cost sheets showing the development of this method of showing the broke losses, the word brokage was used in preference to shrinkage, because the loss is not a true shrink of material as in white water and screening losses. The

fundamental principle is that the total cost of paper is divided (1) by the tonnage delivered to the calendering department and (2) by the tonnage produced by the same department, the difference being the "Loss Due to Supercalendering Brokage" per ton. The same method follows for the rewinding and cutting departments. It may be possible to extend this principle to the paper machines if the actual white water losses are determined and the quantity of furnish is definitely known.

Chart Indicating Broke Losses

It is customary to weigh the broke from the calender, rewinders and cutters to compute the percentage of broke loss of each respective department. The tonnage is charged back to the beater room at no cost during the month but included in the furnish per cent together with the clay and other materials. The customary method

COST CHART Indicating LOSSES DUE TO BROKE



Furnish	Percentage
Sulphite	25%
Soda	25%
Old Paper	30%
Broke	20%
Clay	20%
Total	120%

of figuring furnish per cents is illustrated in the table above. The percentage in excess of 100 may be considered as actual furnish shrinkage. The weight of dry machine broke may be obtained for statistical purposes and in some cases it may be possible to compute the combined wet and dry broke from the theoretical production.

The sample cost sheets with assumed figures show the detail and it should be noted that in accordance with overlying cost keeping methods, conversion cost is based on the actual tons produced.

Manufacturing Cost of Book Paper—Cost of Supercalendering
 (Assumed Figures)

	Tons	Total Cost	Cost per Ton
Total Mfg. Cost Unsupered Paper..	600	\$51,000.00	\$85.00
Loss Due to 5 Per Cent Supercalender Brokage	30		4.47
Cost of Producing 500 Tons Supercalendered Paper.....	570	51,000.00	89.47
Manufacturing Labor		1,140.00	2.00
Repair Labor		570.00	1.00
Repair Materials		228.00	.40
Miscellaneous Materials		342.00	.60
Power		1,140.00	2.00
Total Conversion Cost		3,420.00	6.00
Total Mfg. Cost of Supercalendered Paper	570	\$54,420.00	\$95.47
Add Inventory at Beginning of Period Total			
Deduct Inventory at end of Period			
Mfg. cost of sales			

Cost of Rewinding and Finishing

	Tons	Total Cost	Cost per Ton
Total Mfg. cost 200 tons supercalendered paper transferred to rewinders	220	\$21,004.20	\$95.474
Loss due to 6 Per Cent Rewinder Brokage	13		6.00
Cost of rewinding and finishing Supercalendered rolls	207	21,004.20	101.47
Manufacturing labor		465.75	2.25
Repair labor		103.50	.50
Repair material & supplies		207.00	1.00
Cores		103.50	.50
Wrapping material		155.25	.75
Power		103.50	.50
Total conversion cost		1,138.50	5.50
Total Mfg. Cost Rewound and Finished Rolls	207	\$22,142.70	\$106.97
Add inventory at beginning of period total			
Deduct inventory at end of period			
Manufacturing cost of sales			

Cost of Cutting and Finishing

	Tons	Total Cost	Cost per Ton
Total manufacturing. Cost 300 Tons supercalendered paper trans. to cutters	350	\$33,420.80	\$95.474
Loss due to 12 per cent cutter brokage	42		12.97
Cost of cutting and finishing Supercalendered rolls into sheets	308	33,420.80	108.44
Manufacturing labor		847.00	2.75
Repair labor		154.00	.50
Repair material & supplies		308.00	1.00
Twine		154.00	.50
Wrapping material		231.00	.75
Power		200.20	.65
Total conversion cost		1,894.20	6.15
Total Mfg. cost finished sheet paper	308	\$35,315.00	\$114.59
Add inventory at beginning of period total			

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 Deduct inventory at end of period
 Manufacturing cost of sales

General Investigation

Although no attempt will be made at present to conduct special investigations in reference to the other losses, in the pulp and paper industry, all available data is being collected and co-ordinated for future study. An outline of the general losses incurred is as follows:

1. Wood Preparation

- (a) Loss of wood in barking.
- (b) Loss of wood in cleaning.
- (c) Bark disposal and waste.
- (d) Sawdust.
- (e) Over or undersized chips.
- (f) Moisture test.
- (g) Production from bone dry weight of chips (Weightometer).

2. Groundwood Mill

- (a) Slivers.
- (b) Screenings—Use of refiners.
- (c) Mill effluent—Save-alls and re-use.

In this connection it is necessary to obtain information on uniform methods and equipment in relation to the waste of materials. It is advisable to obtain information in reference to peripheral speed, sharpening of stones, pressure and other factors affecting the quality of pulp. The question of the operating cost of both pocket and magazine grinders will also enter into this study to some degree although it is difficult to express definite conclusions and give specific figures on this question.

3. Sulphite Mill

- (a) Loss of Sulphur.
 - Acid Plant
 - Sublimed sulphur.
 - Formation of So_2 .
 - Leaky gas and acid coolers.
 - Digester Room
 - Leaky recovery coolers.
 - Leaky storage tanks.
 - Methods of cooking.
 - Recovery apparatus.
- (b) Loss of Lime and Limestone.
 - The use of lime of incorrect chemical composition.
 - Excessive screenings.
- (c) Loss of Fibre.
 - Waste of fibre in screenings.
 - Blow pit losses.
 - White water losses.
 - Drainer tile.
- (d) Utilization of waste liquor.
- (e) Utilization of turpentine.
- (f) Loss due to excessive steam consumption.
- (g) Loss of heat in blow off.

(The problem of the utilization of superheated steam and the effectiveness of strainers should be considered).

4. Sulphate Mill

- (a) Waste of chemical in recovery process.
- (b) Waste of materials in smelting furnace due to operation.
- (c) Heat loss in recovery process.
- (d) Utilization of lime sludge.
- (e) Utilization of turpentine.
- (f) Loss in washing process—chemical fibre.
- (g) Steam consumption.

5. *Soda Mill*
 - (a) Waste of chemicals due to operation.
 - (b) Waste of chemicals in recovery plant.
 - (c) Utilization of heat losses in rotary burners.
 - (d) Loss in washing process—chemical fibre.
 - (e) Utilization of lime sludge.
 - (f) Steam consumption.
 - (b) Dry chimney gas losses—economizers and preheaters.
 - (c) Leaky settings.
 - (d) Loss due to scale and soot.
 - (e) Inadequate equipment—stokers, blowers, etc.
 - (f) Radiation from bare pipes.
 - (g) Operating methods.
 - (h) Loss of combustible in ash.
6. *Old Paper Plant*
 - (a) Sorting and dusting loss.
 - (b) Shrinkage of material loss in washing.
 - (c) Chemical loss.
 - (d) Steam utilization.
7. *Rag Mill*
 - (a) Sorting and dusting loss.
 - (b) Shrinkage or material loss.
 - (c) Washing and bleaching loss—fibre.
 - (d) Drainer loss.
 - (e) Steam consumption.
8. *Paper Mill*
 - (a) Method of measuring stock.
 - (b) Incorrect preparation of furnish.
(In connection with this problem the economical utilization of power in the mechanical treatment of the pulp should be considered).
 - (c) Drying of paper machine and building radiation losses.
 - (d) Steam consumption.
 - (e) Utilization of air.
(In connection with the drying of paper, standard methods of procedure are being outlined and it will be possible to obtain authentic figures on this question in the near future. This problem involves the drying system, air system, paper machine hoods and a number of other important features.)
 - (f) Loss production and broke loss—wet and dry.
 - (g) Inefficient utilization of machine equipment, wires, and machine clothing.
 - (h) White water losses.
9. *Steam Plant*
 - (a) Utilization of condensate.
10. *Bleach Plant*
 - (a) Chemical loss—bleaching power vs. liquid chlorine.
 - (b) Fibre shrinkage.
 - (c) Steam consumption.
 - (d) Washing loss.
 - (e) Manufacture of electrolytic bleach.
11. *Handling Materials*—Cost Efficiency of equipment.
 - (a) Wood conveyors.
 - (b) Pulp conveyors.
 - (c) Coal storage and handling.
 - (d) Sulphur storage and handling.
 - (e) Lime and limestone handling.
 - (f) Old paper and rag storage and handling.
 - (g) Paper handling and storage.
12. *Power Transmission Losses*
 - (a) Line shaft.
 - (b) Belting losses.
 - (c) Pump slippage.
 - (d) Water wheel losses.
13. *Decay and Fire Hazard Losses*
 - (a) Wood storage.
 - (a) Ground wood pulp.
 - (c) Chemical pulp.
14. *Management*
 - (a) Cost keeping methods.
 - (b) Operating records and charts.
 - (c) Shop councils and committees.
 - (d) Wage adjustment methods.
 - (e) Insurance and pensions.
 - (f) Medical examination and treatment.
 - (g) Safety education.
 - (h) Vocational education.

MECHANICAL EXTRACTION OF MOISTURE FROM BARK

SUPPLEMENTARY REPORT OF THE COMMITTEE ON WASTE—RESULTS OF TESTS ON BARK PRESSES DIRECTED BY GEO. D. BEARCE, VICE CHAIRMAN OF THE WASTE COMMITTEE AND JOHN D. RUE, FOREST PRODUCTS LABORATORY.

The economical utilization of bark is recognized as one of the important problems in the investigation conducted by the Committee on Waste in Industry. Practically all of the bark from pulp and paper mills is utilized as fuel although experiments on a small scale by the Forest Products Laboratory and one or two paper mills have found that it is possible to make a low grade of board from a combination of specially prepared bark and inferior quality chemical pulp. However, the process has not been commercially developed and the possibility of economically utilizing bark in this manner is not very great.

Recognizing that the removal of water from bark is of prime importance in the utilization for fuel, the waste committee co-operating with the Forest Products Laboratory made special efforts to arrange and conduct tests upon the available bark pressing equipment.

Through the courtesy of the Kimberly Clark Co., and with the assistance of their operating staff, mill tests on the Paulson Bark manufactured by Manitowoc Engineering Works were conducted at its plant at Niagara, Wisconsin.

Tests upon the American Bark Press, manufactured by the Fibre Making Processes Co., were conducted through the courtesy of the Nekoosa-Edwards Paper Co. and with the assistance of their staff. A representative of the Fibre Making Processes Co. also assisted in the test.

Moisture tests were made on samples of bark from the Nekoosa Press, manufactured by the Nekoosa Machine Co. Further extensive data was obtained upon the operation of this press but too late for inclusion in this report.

Test on the Paulson Bark Press

Test conducted at the Niagara (Wisconsin) mill of the Kimberly Clark Co.

Date.—August 25, 1922.

The object of the test was to determine the ability of the press to extract moisture from bark and to ascertain its approximate capacity as well as the average power required.

Description of Press

The Paulson Press is equipped with three pairs of rolls operating

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in series. The upper roll in each set is made up of 8 disks, three inches thick, making the total face of each roll equivalent to 24 inches. The upper roll of the first section is three feet in diameter, the second section 3½ ft., and the third section, 4 ft. in diameter. These rolls weigh approximately 5,500, 7,800 and 10,500 pounds respectively. Total pressure per inch width of face 1st roll—229 lb., 2d roll 325 lb., 3d roll 437 lb. The bark is carried between the upper and lower rolls upon a metal conveyor composed of steel slats ¾ of an inch thick, 3 inches wide and 32 inches long. The travel of this conveyor is approximately 50 ft. per minute and the conveyor has 17½ feet of effective draining surface.

Power

The entire press was driven by a 15 horsepower motor.

Pressing Tests

Test No. 1 was made on balsam and No. 2 on spruce. The balsam wood was approximately 16 months old from the time of cutting. It had been stored in the woods a major part of this period, was shipped to the mill and unloaded directly into the mill pond supplying the wood room. The bark was rather brittle and granular, easily broken up, and contained comparatively few slivers.

The spruce wood used in the second test was cut in the winter of 1921-22 and shipped about February, 1922. This was stored in the wood yard until ready for use. The total age from the time of cutting was approximately 8 months. In the drums the bark came off in larger pieces and was apparently more stringy than that of the balsam.

Operation of Tests

The wood was barked in the Paulson drums operating with three water showers on the wood in the drum. The bark was brought from the drum by a conveyor and automatically went through the press. The pressed bark was collected and weighed in wheel barrows on a platform scale. Before entering the press, the bark was sampled for moisture at intervals of about 15 minutes. A sample of the bark leaving the press was taken each fifth load. In order to obtain a check upon the percentage of bark, the balsam and spruce wood was weighed and scaled on the cars before it was unloaded into the pond. Samples of chips were taken at frequent intervals to determine the moisture contained in the wood. A total test ran for a period of ten hours, the first six hours on balsam and the remaining four hours upon spruce. The volume of bark in the balsam test was greater than of the test on spruce, but it was apparent that the press was not operated to full capacity, even on balsam. There were frequent intervals when the press conveyor was not completely covered with bark across its effective width.

Data and Discussion

The following table gives a summary of the results on pressing spruce and balsam bark:

	Balsam	Spruce
1. Per cent bone dry bark to press.....	33.7	28.7
2. Per cent bone dry bark from press.....	43.7	39.7
3. Weight of wet bar, lbs.....	73,619	24,510
4. Weight of bone dry bark, lbs.....	32,171	9,731
5. Hours operated.....	6	4
6. Lbs. bone dry per hour.....	5,362	2,433
7. Lbs. bone dry bark per hour per in. of width.....	223	101

Better results were apparently obtained in the balsam than in the spruce due to the different character of the bark. Moreover, the thickness of the mat of balsam bark passing between the rolls was greater than that of the spruce bark. This might account for some difference in the percentage of bone dry bark delivered to the press.

The following table shows the cordage and weight of the Spruce and Balsam used during the test:

	Spruce	Balsam
Cords (gross).....	122.36	61.70
Cords (net).....	113.91	59.27
Lbs. wood per rough cord natural.....	4,005	3,439
Lbs. wood per rough cord bone dry.....	2,098	2,038
Lbs. wood per rough cord bone dry.....	2,332	2,265
Lbs. bone dry bark per rough cord.....	282	164
Per cent bark.....	13.43	8.05

Test of the American Bark Press

The test was conducted at the Port Edwards mill of the Nekoosa-Edwards Paper Company.

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Date of test.—August 28, 1922.

The object of the test was to determine the efficiency of the press in mechanically removing moisture from bark.

Description of Press

The press is of the roller type, having two sets of rolls in series each upper roll with a 10 inch face and 20 inches in diameter. The bark is carried between the rolls on a chain belt operated at approximately 30 ft. per minute.

The leverage on the rolls was in a ratio of ten to one. The counter weight on the first roll was 125 pounds and in the second roll 94 pounds. The effective pressure on the rolls is as follows:

	First Roll	Second Roll
Dead weight.....	600 lbs.	800 lbs.
Counterweight.....	2,500 lbs.	1,880 lbs.
Total.....	3,300 lbs.	2,680 lbs.
Pressure per inch width of face (1st roll).....	330 lbs.	
Pressure per inch width of face (2d roll).....		268 lbs.

Power

A 7½ horsepower motor was used to drive the press and two short conveyors operating in connection with the press.

Pressing Tests

The major part of the test was operated on one type of bark and under constant conditions. For a short period of 15 minutes, after the first test the bark from the John Edwards mill was pumped in water and added to the regular bark supply of the wood room. Under these conditions the bark going to the press was extremely wet and the short length of strainer conveyor did not allow the excess moisture to drain from the bark before entering the press. Consequently the machine did not press the bark to the same degree as in the major test.

Character of Bark

The bark pressed was from spruce which had been stored in the mill yard from 16 to 18 months. It was barked in an American drum with the lower sector running in water. The bark was conveyed to the basement where it was forked into the bark press by hand. The bark was well broken up and comparatively free from knots.

Sampling for Moisture

The bark was sampled for moisture before going to the press at intervals of approximately 15 minutes. Samples of the pressed bark were taken from each wheel barrow load. All of the bark was weighed on platform scales.

Data and Discussion

The following table indicates the results obtained in the test on the American press:

1. Per cent bone dry bark to press.....	30.0
2. Per cent bone dry bark from press.....	41.5
3. Weight of wet bark (lb.).....	5,300
4. Weight of dry bark (lb.).....	2,230
5. Hours operated.....	1.25
6. Pounds of bone dry bark per hour.....	1,784
7. Pounds of bone dry bark per inch of width.....	178

The combined bark of the Port Edwards mill and the John Edwards mill (pumped in water) was pressed for a quarter of an hour. The bark was 17.9 per cent b. d. to press and 35.7 per cent b. d. from press. The pounds of b. d. bark per hour was approximately 2,400.

The operation of the test was not as long as it was desired due to the extreme difficulty of weighing all of the bark going through the press. The moisture test averages very close to the figures obtained by the engineering department of the Nekoosa-Edwards Paper Co. over a period of about six months which average as follows:

Bark before going to the press.....	22.6% bone dry
Bark leaving the press.....	37.9% bone dry

These tests were made under operating conditions, and part of this time the wet bark from the John Edwards mill was pressed together with the regular supply of bark from the Port Edwards wood room.

UTILIZATION OF BARK AND WOOD REFUSE AS FUEL

Supplementary Report of the Waste Committee

The investigation of the use of bark and wood refuse as a fuel has been undertaken as a part of the general program in connection with the elimination of mill wastes in which the Committee on Waste of the Technical Association of the Pulp and Paper Industry is co-operating with the Forest Products Laboratory and the News Print Service Bureau.

It was considered advisable to make a survey of the industry to determine the extent of bark utilization as well as collect and co-ordinate all available data on bark pressing and refuse burning. In this connection the thermal value of bark and wood refuse was fully investigated by the Forest Products Laboratory. Evaporative tests from available sources were collected and summarized in Tables XI. and XII., to show the results of bark burning in the paper and other industries.

Heating Value of Wood and Bark Preliminary Work

1

A preliminary report has been made giving a brief resumé of the literature in the Laboratory files covering the heating value of wood and bark and a brief description of various equipment used in drying of tan bark. A summary of the heating values found on record is given in the following table.

TABLE I.
The Heating Value of Bark of Various Woods

	Heating value				How determined
	% Moist	% Ash	B. lb.	Cal.kg.	
Hardwood	Dry	...	9,410	5,220	Calorimeter (Parr)
Eucalyptus	Dry	7.3	7,530	4,187	" (Atwater)
Eucalyptus	Dry	12.02	6,840	3,802	"
Eucalyptus	Dry	6.48	7,520	4,179	"
Eucalyptus	Dry	9.04	7,300	4,057	"
Eucalyptus	Dry	6.16	7,430	4,129	"
Eucalyptus	Dry	11.53	7,050	3,920	"
Eucalyptus	Dry	7.53	8,160	4,532	"
Lodgepole pine (flumed)	Dry	...	9,246	5,130	" (Parr)
Lodgepole pine (unflumed)	Dry	...	9,386	5,210	" (Parr)
Hemlock (spent)	65%	...	3,325	1,845	"
Hemlock (spent)	Dry	...	9,500	5,270	"
Juniper	Dry	10.04	7,367	4,180	" (Mahler)
Douglas Fir	Dry	0.95	10,820	6,010	"
Western Yellow Pine	Dry	1.30	9,275	5,140	"
Arizona White Oak	Dry	17.38	5,618	3,130	"
Arizona Black Oak	Dry	9.13	7,839	4,350	"
Average bark from slashers and drum barkers	Dry	...	8,660	4,810	"
True bark as above cleaned by brushing	Dry	...	8,878	4,930	"
	75%	...	1,000	555	Calculated from analysis
	50%	...	3,500	1,942	Calculated from analysis

Determination of Heating Values

Using a Parr calorimeter the heating value of the bark of several species were determined. Samples of jack pine, spruce, balsam and aspen barks were carefully selected from the wood piles in the yard of the Forest Products Laboratory so as to be as free as possible from decay. These were dried to from 2.5 per cent to 6 per cent moisture, ground to pass a 60 mesh sieve and burned in the calorimeter.

Samples of drum barker waste and disc barker refuse were obtained through the courtesy of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., and the Nekoosa Edwards Paper Company, Port Edwards, Wis. They were handled in the same manner as those above. Table II. gives the results of these determinations.

¹The Utilization of Bark as Fuel, Project 1219, Forest Products Laboratory, E. R. Schafer, May 1, 1922.

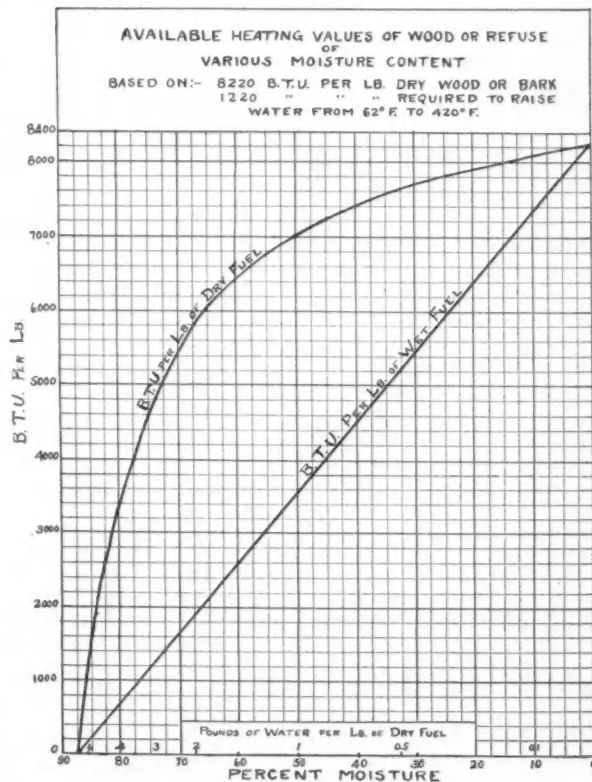
TABLE II

Heating Value of Bark and Refuse by Parr Calorimeter

Species	Jack Pine	Spruce	Balsam	Aspen	Hemlock	Spruce	Spruce
Shipment No	884	898	898	A.&B. 854	.....	.....	.....
Sample No.	.....	.....	.....	.....	P. 232	P. 233	P. 234 P. 235
Description	Forest Products Laboratory Samples taken from wood in storage				Drum	Barker	Waste
				
% Ash	1.51	2.53	5.19	7.40	1.57	2.48	2.85
% Moisture	4.93	5.82	4.62	3.93	3.72	4.49	2.90
B. T. U.	10,140	9,490	9,010	8,690	9,669	9,415	8,575
per pound	9,950	9,700	9,010	8,655	9,700	9,375	8,550
oven dry	9,420	9,680	8,900	8,610	.....	.....	.....
dry	9,960	9,560	8,950	7,860	.....	.....	.....
Average	9,870	9,510	.....	8,480	.....	.....	.....
Average on ash free basis	10,020	9,840	9,460	9,140	9,680	9,395	8,560
					9,840	9,640	8,810
					9,300		

*From dry run.
†50 per cent river wood, 50 per cent stored wood.
‡Mill refuse mostly inner bark.
§Wood room refuse (average).

It is interesting to note the order in which the heating values fall. This is undoubtedly due to the difference in pitch content. It is quite well established that the heating values of all woods are the same, weight for weight, differences being due to the



amount of rosin in the wood. This can reasonably be assumed to hold for bark also. It will be noticed that the values found for drum waste and refuse check fairly well with the barks carefully selected at the Laboratory.

It is of course obvious that the drier the bark the greater amount of heat can be obtained from it. The accompanying curve (1) shows the rate of change in heating value when one pound of dry fuel is burned with varying quantities of water present. Curve (2) is based on the heat value of fuel as fired. They are

based on a value of 8,220 B. t. u. per pound for the dry fuel. This value is obtained by Dulong's formula¹ using the following average analysis for wood: Carbon, 51 per cent; hydrogen, 6.5 per cent; oxygen, 42 per cent, and ash, 0.5 per cent. It is assumed that it requires 1,200 B. t. u. per pound¹ to raise water from 62° F. to 212° F. to convert it into steam, and raise it to a stock temperature of 420° F.

It will be noticed in curve (1) that the increase in heating value is quite rapid as the water is reduced from 80 per cent to about 50 per cent, and somewhat slower as the moisture is reduced below that point. In other words the gain in heating value by drying the waste below 50 per cent may not justify the cost.

Questionnaire Sent Out by the Forest Products Laboratory and the News Print Service Bureau

1. Drum Barker (make).....
2. Kind of wood.....
3. Approximate percentage of moisture in bark from drums.....
4. Bark press (make or type).....
5. Percentage of moisture in bark delivered by presses.....
6. Is bark burned with coal?.....
7. Type of furnace.....
8. Special grates or other equipment used to burn bark.....
9. Type of boiler.....
10. Estimated heat value obtained from bark.....
11. If boiler tests on the burning of drum bark have been conducted could you supply us with the detailed results?.....

HOG FUEL OR REFUSE FROM DISC BARKERS

1. Kind of wood.....
2. Percentage of moisture.....
3. Is refuse burned with coal?.....
4. Type of furnace.....
5. Type of boiler.....
6. Special equipment to burn refuse.....
7. Method of measuring the amount of bark used or refuse.....
8. What basis is used to convert refuse to its coal equivalent.....
9. Estimated heat value from refuse.....
10. Results of any boiler tests.....

Company

Date.....Reported by

NOTE: Please use other side of this sheet for additional remarks.

LETTER SENT OUT BY THE FOREST PRODUCTS LABORATORY.

Gentlemen:

The Forest Products Laboratory in co-operation with the News Print Service Bureau and the Technical Association of the Pulp and Paper Industry is investigating the use of bark and waste as fuel and will appreciate the information from your mill, requested in the enclosed blank. Return envelope is enclosed for your reply.

Yours truly,

JOHN D. RUE, in Charge,
Section of Pulp and Paper.

Results of the Questionnaire

In order to get an idea of the practice followed in handling this waste, a questionnaire was sent to 192 representative manufacturers. The number of replies were 95 divided as follows:

- | | |
|---|----|
| Number burning bark and refuse alone..... | 28 |
| Number burning bark and refuse with coal or oil..... | 25 |
| Number disposing of bark or refuse otherwise than as a fuel.. | 6 |
| Number who do not have bark or refuse..... | 32 |
- Most of those in the last item bought their wood peeled.

¹ Kent's Handbook, page 835.

Barking Drums

Thirty-five companies reported that they used barking drums. Of these, 21 barked wet obtaining a refuse containing 60 to 85 per cent moisture. Nine ran their drums dry, the moisture reported being from 35 to 55 per cent. Four did not indicate their method or moisture content of the refuse. Table III. gives the number of companies using the various makes of drums.

TABLE III.
Barking Drums

Name	Number companies using
American	22
Standard Holyoke	2
Paulson	3
Bache Wiig	2
Thorne	1
Green Bay	1
Own make	2
Name not given.....	1
Canadian	1
Waterous	1

Bark Presses

Table IV. gives the number of persons using bark presses of various make, and moisture in the pressed bark.

TABLE IV
Bark Presses

Name	Number of companies using	Per cent moisture
American	1	.....
Nil	1	60-70
Paulson	1	65-70
Giant Nekoosa.....	1	.....
Name not given.....	2	.....

Furnaces, Stokers and Grates

TABLE V

Furnaces, Stokers and Grates

Name	Number of companies using
Dutch ovens	35
Type E as manufactured by the Combustion Engineering Corporation, New York, N. Y.	3
Jones Standard	3
Rooney Stoker	2
Murphy Stoker	2
Riley Stoker	1
Ordinary grates ¹	12
Furnace made by the Menominee Boiler Works, Menominee, Wis.	1
Open Air Furnace.....	1
Soda recovery furnace.....	1
Special furnaces	2

Of the special furnaces one correspondent states that they use "dutch ovens and one special furnace" equipped with "flat grates inclined at 45° in two furnaces, shaking grate in the other."

The other special furnace is an unusual installation in which a high dutch oven is built back of the main boiler room in a separate building, where is also built a loft for storage of the refuse, and a fan equipment for the dutch oven. The air instead of being introduced below the grates is made to enter at 6 and 12 inches above the grates by means of several rows of tuyeres all of which are connected to an annular air duct. The refuse is piled highest around the outside edges of the oven to a depth of 2 to 3 feet. This arrangement prevents leakage of excess air into the furnace through thin places in the fuel bed. The hot gases pass from the dutch oven through a long brick tunnel and enter the combustion chamber of the boiler proper just above the bridge wall of the stoker. The main furnace is equipped with a standard Jones "AC" Underfeed stoker and a B. & W. boiler. It is claimed that either the dutch oven or stoker can be fired alone or at the same time with very good results. The refuse fuel consists alternately of partially dry sawdust and wet bark and averages 55 to 65 per cent moisture. With this equipment it has not been found necessary to dry the bark.

Note:

The Underfeed Stoker Company¹ has made a study of the burning of wood refuse in connection with the Jones Standard stoker. The

¹ Note—¹ Hand fired, regular, common inclined flat, grate openings one-half inch, hollow, herringbone, shaking and rocking grates.

refuse is introduced into a dutch oven through the top on to a coal fire. The coal is fed by means of the underfeed stoker. Where refuse is principally depended on as a fuel only enough coal is used to maintain combustion of the wet waste.

Other Equipment

Six companies wrote that they used various equipment to handle their bark and wood waste as follows:

TABLE VI

Equipment	Companies
Sturtevant blower and cyclone	3
Coppus blower	1
Conveyors	2

Boilers

The following types of boilers were reported to be in use:

TABLE VII

Name	Number of companies using
Sterling	9
Wickes, R. T.	3
Wickes, V. T.	1
Edge Moore, W. T.	2
B. & W.	7
Root	1
Scotch Marine	3
Dempfel	1
Cook, W. T.	2
Keeler, W. T.	1
R. T., made by the Menominee Boiler Wrks, Menominee, Wis.	1
Tubular boilers name not given	22
Maxim	1

Methods of Measuring Refuse

The following methods of measuring the refuse were given:

TABLE VIII

Method	Companies using
Sealed in cars	1
By carloads	2
By conveyor	2
Estimated	1
Estimated from total cordage and character of the wood	2
25 per cent of rough wood sealed in cars, 1 cd = 4,000-4,500 pounds	1

Heating Value

The heating values reported check in the main with the determinations made at the Forest Products Laboratory. Several stated that the value they reported was estimated.

TABLE IX
Heating Value
Bark from Drums

Species	Moisture %	B.t.u. per lb.
Hemlock Spruce	80	None
Spruce Balsam	83	None
Hemlock 10 Spruce 80	75	1,000
Hemlock 10 Spruce 80	65	2,000
Hemlock 10 Spruce 80	60	None
Spruce Balsam	54	1,750
Spruce Balsam	50	3,500
Spruce Balsam	dry	3,200
Spruce Balsam	dry	7,000
Spruce Balsam	air	8,000
Spruce Balsam	dry	9,000
Spruce Balsam	dry	9,000

Species	Moisture %	B.t.u. per lb.
Spruce, pine, poplar	70	None
Shredded licorice root (extracted)	70	1,000
Hemlock, spruce	52	3,200
Hemlock 10%, spruce 80%, balsam 10%	50	3,500
Saw mill and wood room refuse	39-56	5,800-9,600
Spruce, balsam	dry	8,710
Hemlock, spruce	dry	9,000

Basis to Convert Refuse to Its Coal Equivalent

Most of the answers stated or inferred that no basis was used for arriving at the coal equivalent of the refuse. Fourteen gave various formulae, a number of which were merely estimates. Some of these agree with each other but others are quite at variance.

Note—Burning of wood refuse with Jones Underfeed Stokers, National Engineer, August, 1921.

TABLE X
Basis to Convert Refuse to Coal Equivalent
Bark from Drums

Species	% Moisture	Formula or Remarks
Spruce 70%, balsam 30%	80	4 cords = 1 ton coal.
Spruce, balsam (small amount)	80	Depends on conditions, sometimes none at all, and at others considerable depending on amount and character of material.
Spruce (river driven)	45-50	Use about 20% less coal in daytime per lb. of water evaporated than at night when no bark is burned.
Hemlock, spruce, balsam, Jack pine	35-40	Bark from 100 cords of wood = 25 tons soft coal.
Hemlock, spruce, Jack pine, tamarack	air-dry	Bark from 20 cords of wood = 1 ton of coal.
Hemlock, balsam, pine, poplar	...	One ton bark = 1 ton coal. To provide bark fuel for a plant turning out 200 cords a day, half would have to be rossed and half drum waste.

Hog Fuel or Disc Barker Refuse

Species	% Moisture	Formula or Remarks
Hemlock, spruce	52	B. t. u. content.
Hemlock and hardwood	50	1 cord hemlock = 420 lb. coal; 1 cord hardwood = 855 lb. coal; (coal = 13,500 B. t. u.).
Hemlock, spruce, balsam	45-55	With 43% moisture 1.8% water is evaporated per lb. of coal. Equivalent determined by flow meter readings.
Red spruce	30-50	5 lb. waste = 1 lb. coal; 1 1/2-2 1/4 lb. water evaporated per lb. of waste.
Pine	40	2 cords hogged wood = 1 ton ordinary coal.
Pine, cedar	35	4 lb. refuse = 1 lb. coal.
Spruce, balsam (small amount)	35	B. t. u. = wt. x [(1% Moist.) x 9,800 - % Moist (216-65) + .48 (400-212) divided by the B. t. u. in the coal.
Spruce	60	5,882 B. t. u. equals 1 lb. dry wood.
Hemlock, balsam	40	Steam - 2.5 lb. steam equals 1 lb. dry wood.
Spruce	50	4 lb. refuse equals 1 lb. coal.

Proportion of Coal and Refuse Burned Together

As has already been stated 21 burned their refuse alone. Of the 23 who burned it with coal, 3 used only enough coal to maintain combustion of the wet fuel, 16 varied the amount of coal depending on the amount of refuse to be burned and 3 had so little waste that it was burned only as a method of disposal, no attention being paid to its value as a fuel. One stated that they burned their refuse with oil. Another that the proportion of coal to refuse was 20 per cent to 80 per cent.

Boiler Tests

The result of boiler tests submitted and those available from other sources have been summarized in Tables XI. and XII.

Tests 1 to 5, Table XI. are comparative tests on spent tan bark with mechanical stokers, and wood and spent tan bark with hand firing. Test 6 is on bagasse and No. 7 is a coal test for general comparisons. Results show a high evaporation per lb. of coal when the fuel value of the refuse is not considered. One company states that although tan bark has been considered a waste product that there was an actual net saving of 29 per cent in the cost of steam.

Tests 1 to 5, Table XII. are comparative tests on wood bark refuse and coal combined. The results of the tests on bark and refuse indicate that the type of furnace and the method of operation are the two important factors in obtaining a high efficiency with the available fuel. Little progress has been made on this work due to the lack of definite information on different kinds of furnaces and available heat value in refuse of different moisture content.

Conclusions

From information gathered from the literature and the results of the questionnaire the following points are apparent:

1. The refuse to be of much value as a fuel must be at least 50 per cent dry or the design of the furnace must be such that it is dried to this extent before reaching the combustion zone.
2. The construction of the furnace, the control of air, and the method of feeding the fuel must be carefully considered.

TABLE XI
SUMMARY OF BOILER TESTS

Kind of fuel.....	1 Wet spent hemlock tan Wide high oven H.R.T.	2 (b) Wet hem- lock tan Automatic stoker H.R.T.	3 Hog Dutch oven Wickes	4 Hog Dutch oven Wickes	5 Refuse Dutch oven Internal furnace	6 (c) Bagasse Gilchrist Edgemoor	7 Coal Dutch oven Internal furnace
Grate surface square feet.....	92	61.5	42	42	170	.....	170
Water heating surface square feet.....	2,089	1,795	3,000	3,000	8,911.2	10,250	8,911.2
Heating surface ÷ grate surface.....	22.7	29.2	71.3	71.3	51.41	.....	52.41
TOTAL QUANTITIES							
Duration of trial, hours.....	24	12	8	7	8.6	6	8.8
Weight of fuel as fired, pounds.....	53,000	18,600	25,486	32,806	195,207	108,069	45,847
Percentage of moisture in fuel.....	65.6	65.3	28.3	44	49.1	48.5	2.16
Total weight of dry fuel consumed, pounds.....	18,232	6,449	18,250	18,400	99,300	55,656	44,855
Total weight of water fed to boilers, pounds.....	69,825	33,084	50,423	49,125	377,834	254,244	373,838
Factor of evaporation.....	1.1216	1.085	1.096	1.094	1.0719	1.122	1.0705
Equivalent water evaporated into steam from and at 212 degrees, pounds.....	78,316	35,809	54,000	52,300	405,000	285,212	400,193
AVERAGE TEMPERATURES, PRESSURES, ETC.							
Steam pressure by gauge, pounds.....	70.25	43	126	126.5	121.038	130.4	129.97
Temperature feed water entering boiler.....	126.5	155	136.5	138.5	185.4	205.9	188.46
Temperature escaping gases from boiler.....	471	493	509.5	570	557.3	417.6	551.15
Force of draft between damper and boiler, inches water.....	0.39	0.4	.....	.46	.90	.688	.82
HORSEPOWER							
Horsepower developed.....	94.6	86.5	190	216	1,363.2	1,378	1,337.8
Rated horsepower.....	139	120	300	300	1,200	1,025	1,200
Percentage rated horsepower developed.....	68	72.1	63.3	72.3	117.9	134.4	109.8
ECONOMIC RESULTS							
Water evaporated under actual conditions per lb. fuel as fired, pounds.....	1.32	1.77	1.97	1.5	1.97	2.35	8.322
Equivalent evaporation from and at 212 degrees per lb. fuel as fired, lbs.....	1.48	1.93	2.12	1.59	2.07	2.64	8.729
Equivalent evaporation from and at 212 degrees per lb. dry fuel, lbs.....	4.30	5.55	2.96	2.84	4.076	5.13	8.921
EFFICIENCY							
Calorific power of dry fuel per lb. British thermal units.....	9,463	9,850	8,220(a)	8,220(a)	7,764	8,300	13,898
Percentage moisture in fuel as fired.....	65.6	65.30	28.3	44	49.1	48.5	2.16
Available heat in 1 lb. of wet fuel as fired, after subtracting loss due to evaporating moisture, British thermal units.....	2,443	2,623	5,621	4,027	.....	.....	.....
Efficiency of boiler including furnace, based on available heat in fuel, i.e., corrected for moisture—per cent.....	58.2	71.1	36.6	38.4	50.9	76.3	62.3
Efficiency of boiler including furnace, based on total heat in fuel, per cent.....	43.9	54.4	34.4	33.5	.....	60.0	.....

(a) Assumed. (b) Bulletin 1,258 A. S. M. E., D. M. Myers, N. Y. (c) Gilchrist Furnace per E. W. Kerr.

3. The best method of measuring the waste will vary in different mills. However, some attention could be given to this point as evidenced by the fact that such a large number replied that they had no method of measuring their refuse.

The fact that the available data shows efficiencies on refuse vary-

ing from 36 per cent to 71 per cent indicates the possibility of important savings in a study of the subject. Further study should indicate the increased efficiencies due to reduced moisture of bark and to properly designed furnaces.

TABLE XII
SUMMARY OF BOILER TESTS

Kind of fuel.....	1 Refuse and coal	2 Tank bark and coal	3 Coal and refuse (refuse not fired in)	4 Coal and refuse (refuse not fired in)	5 Coal and bark and tan
Kind of furnace.....	Jones under- feed B. & W.	Special combined H. R. T.	B. & W.	2 R. T.	Special Special
Kind of boiler.....	B. & W.	H. R. T.	B. & W.	2 R. T.	2 R. T.
Grate surface square feet.....	120	1,842	.....	.....	.....
Water heating surface, square feet.....	.....	.....	.....	.....	.....
Heating surface ÷ grate surface.....	.....	.....	.....	.....	.....
TOTAL QUANTITIES					
Duration of trial, hours.....	7	9	8	8	7
Weight of fuel as fired, pounds.....	64,493	3,416 (coal)	35,500	10,400 (coal)	2,490
Percentage of moisture in fuel.....	64.3	5.0	66	2.43	6.3
Total weight of dry fuel consumed, pounds.....	23,030	3,245	12,070	10,150	2,333
Total weight of water fed to boilers, pounds.....	116,691	.....	150,723	87,540	19,311
Factor of evaporation.....	.....	.....	1.0611	1.2231	1.1354
Equivalent water evaporation into steam from and at 212 degrees, pounds.....	116,728	.....	.....	107,085	78,689
AVERAGE TEMPERATURES, PRESSURES, ETC.					
Steam pressure by gauge, pounds.....	124.5	68	111.4	72.6	76.0
Temperature feedwater entering boiler.....	238	186	36.0	114.0	120.66
Temperature escaping gases from boiler.....	439	477	.....	.....	.....
Force of draft between damper and boiler, inches.....	63	.....	.....	.....	.....
HORSEPOWER					
Horsepower developed.....	483	.....	388	285	213.5
Rated horsepower.....	395	.....	250	160	160
Percentage rated horsepower developed.....	123	.....	155	178	133.12
ECONOMIC RESULTS					
Water evaporated under actual conditions per lb. fuel as fired, pounds.....	.....	328	35.16(a)	21.51(a)	15.22(a)
Equivalent evaporation from and at 212 degrees per lb. fuel as fired, pounds.....	.....	3.48	43.0(a)	24.43(a)	17.12(a)
Equivalent evaporation from and at 212 degrees per lb. dry fuel, pounds.....	.....	7.19	45.9(a)	.....	.....
EFFICIENCY					
Calorific power of dry fuel per lb. British thermal units.....	8,500	9,800	14,075(a)	9,110	9,669(a)
Percentage moisture in fuel as fired.....	64.3	66	6.3(a)	53(b)	1.03(a)
Available heat in 1 lb. of wet fuel as fired, after subtracting loss due to evaporating moisture, British thermal units.....	.....	.....	.....	.....	65.16
Efficiency of boiler including furnace, based on available heat in fuel, per cent.....	.....	.....	.....	.....	25.88(b)
Coal equivalent of refuse burned per lb. of coal burned assuming 70% efficiency.....	59.6(b)	47.6(d)	58.9(d)	.....	61.1(e)

(a) Based on coal only. (b) Based on refuse only. (c) Assumed. (d) Based on coal plus refuse assuming heating value of coal 13,000 B.t.u. per pound. (e) Based on coal plus refuse.

HY-VAC SLUICE FOR USE IN CONNECTION WITH CYLINDER PAPER AND CYLINDER BOARD MACHINES

I. Present Crude Method of Taking Off Water

In general practice we find either a piece of felt or a board attached at each side (front and back sides of the machine) called the "sluice" or the "sluice board," arranged on top of the felt and extending across the width of the felt so as to form a dam from the point where the couch roll forms contact with the mold. Generally, the contact point of the couch roll and the mold is fixed beyond the center of the mold, so that in actual practice the pulp-carrying felt gets its first contact with the pulp layer on the mold, some distance ahead of the couch roll. Naturally, this is the point where the first pressure of the couch roll on the pulp, or the felt carried pulp on its next layer, is exerted, so that at this point we find a release of water through the mold downwards and through the felt upwards.

These so-called sluices or sluice boards form a dam on top of the felt between the sluice board and the couch roll, for the water released upwards through the felt. This accumulation of water in the so-called dam, having no outlet other than the space between the board and the couch roll, and this space being open at each end of the mold, the released water flows by gravity over the felt back into the mold vat.

II. Imperfect Product Due to Poor Water-Removal

This rather crude method of squeezing the water from the pulp and pulp layers has been for many years a cause of many disturbing effects in board and paper manufacture, the principal difficulty being the so-called blows or air pockets forming either between the pulp layer and the felt, or between the pulp layers formed into boards. Some difference in general opinions are held as to the primary causes for these air pockets. Claims were made that the beating treatment of the different pulp layers, particularly if one layer was formed of "slow" fibers and the next layer had "free" fibers, the effect of attempting to make bond between the pulp layers would cause an air bubble to form.

The explanation most generally accepted, is that the waste water released through the felt was allowed, by the use of inef-

fective sluices or sluice boards to flow back too far on top of the felt, causing a sagging of the pulp or layers with such increased weight of water as to form an air pocket or "blow" between the pulp layers.

A blow so formed will continue to form until somehow or other the cause is removed. Many and diverse have been the expedients resorted to and claimed as positive cures for this condition.

An air-pocket, or described in the language of the paper mill worker as "blow," "railroad," "blister," "split," "bubble," if formed in a sheet, particularly in boards, makes that product practically worthless. The effect in paper made on a single mold is that of two streaks running parallel with the grain of the sheet, while in boards the effect would be the same in appearance and the board would split, the layers not adhering to each other where the air pocket or blister appeared.

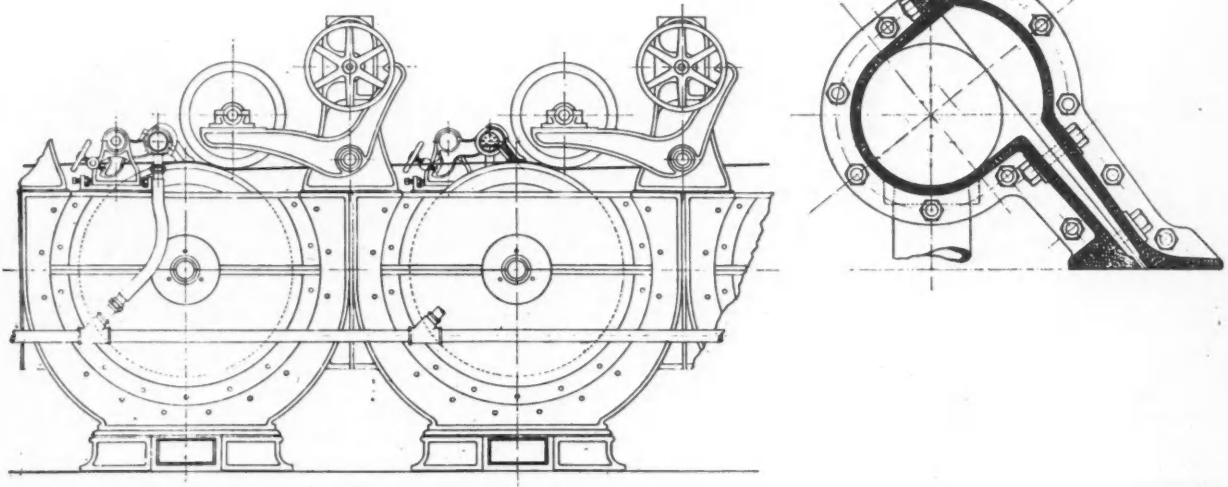
In recent years considerable improvement has been made in the construction of couch rolls, with the object of providing a uniform pressure of same on top of the felt and the mold, one of the objects being to effect a fairly uniform moisture content of the pulp layers.

Such portions of the pulp layer having wet spots or wet streaks, or carrying uneven moisture content, tend to create uneven shrinkage in the sheet and are said to be the cause of the "flowering" or marking of the paper or board at the primary presses or main press rolls.

Another result of uneven moisture content of the pulp layers is the cracking or "checking" of the outside layers of the board due to the difficulty in removal of water at primary presses. Unsatisfactory control of the moisture content of the pulp layers is therefore known to be the cause of many of the difficulties in paper and board manufacture.

III. Uniform Moisture Content Difficult

A great many attempts have been made to solve the problem of producing a uniform moisture content of the pulp layers. These attempts were directed toward producing such results by applying



suction to the pulp layers after the formation of the sheet has taken place. Suction rolls and suction boxes applied at different points produced different and indifferent results. A device which was patented in 1910-11 was ineffective in its application of reducing the waste water on top of the felt because its construction was designed to form the dam as described in connection with the sluice boards and then take the water from the dam. The suction so applied depended upon creating by pressure a certain amount of water held back by the dam at all times in order to make that device operate, so that the device became inoperative eventually by its own action and was discarded by the mills where they were installed for the experiment.

IV. The "Hy-Vac Sluice"

The "Hy-Vac Sluice" and the object of its invention—

Primarily to control and prevent the waste water from accumulating in front of the couch rolls on a cylinder board machine.

In the preceding description we find the first release of water through the felt upwards at the first point of contact between the felt and the mold. At that point on top of the felt we have applied suction through an intake nozzle varying in length and width with the width of the pulp layer and with the amount of water to be removed.

V. Actual Tests of the "Hy-Vac Sluice"

The invention just described was as stated originally intended to control the amount of released water on top of the felt to what may be called a safety limit, and in test runs it is actually tak-

ing more than is released by pressure of both the felt contact and the couch roll pressure.

We have demonstrated what we call a "dry couch roll," and by this we mean that there is no more water accumulating on the surface of the felt from the action of the couch roll in pressing the felt and the pulp layers together. We have proved that we can govern the control of released water to make a desired uniform moisture content.

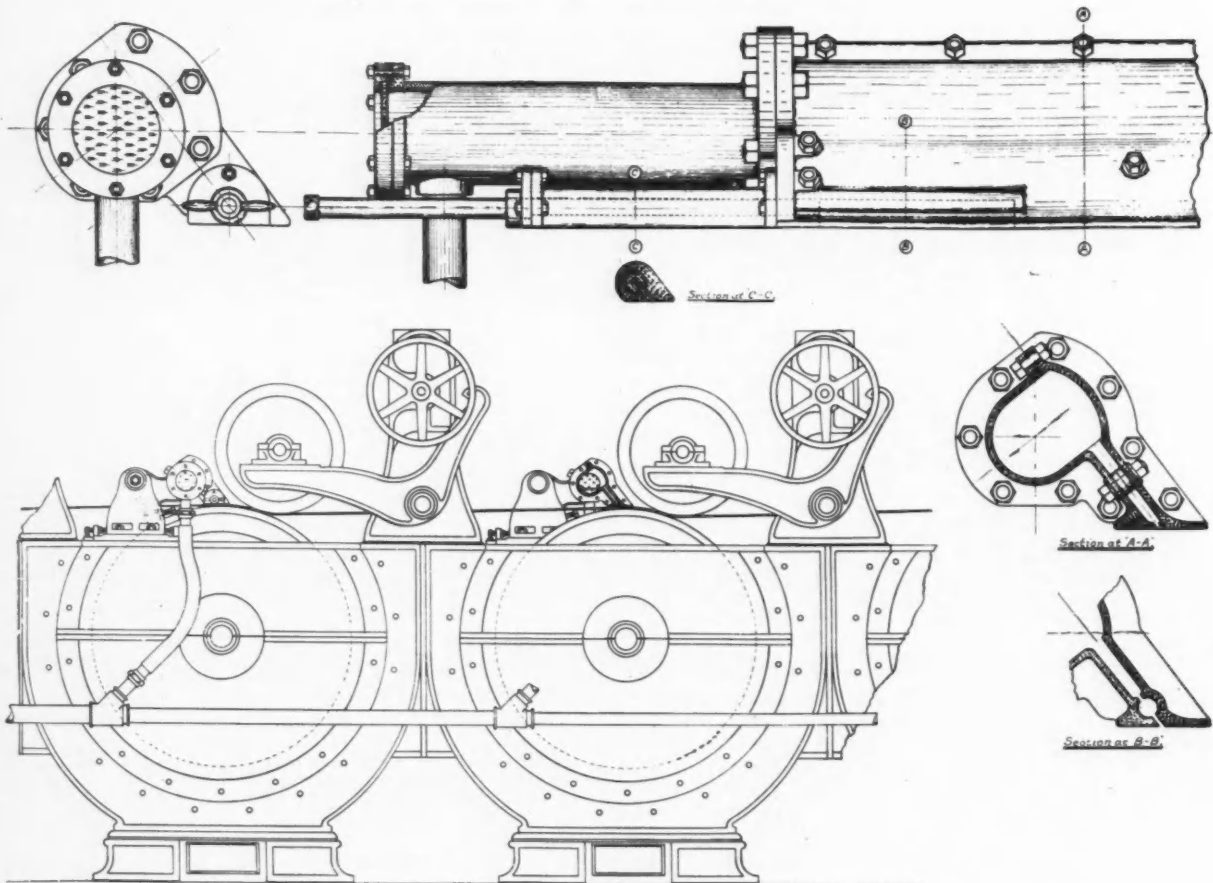
We believe this condition to be something never before maintained on a cylinder board machine.

The first test of this device was made on August 12, 1920. The next test with the same equipment was started on September 26, 1921, and the device has been in continuous operation since that date. Naturally, the adjustment features were crude and still remain so in that installation, because of the fact that it was to be a test of principle only.

Various tests were made, one in particular giving some idea of the rate of water extraction.

A "dry couch roll" was maintained on the last mold of a 4-cylinder board machine making about 1800 lbs. of board per hour with a 60 inch trim, and 17 gallons of water (approximately) per minute was extracted by our device.

You will please note that the direction of the water and air that is drawn by the vacuum is at an angle of about 45 degrees rather than in a perpendicular direction. This gives an easy flow and also allows ample clearance from the couch roll. (Our problem in removing this waste water was to draw it up and then carry it away completely, taking it away, too, from a point almost under the couch roll.)



TECHNICAL SECTION, PAGE 177

VI. Construction and Features of the "Hy-Vac Sluice"

The Hy-Vac Sluice as now designed for cylinder machines will have in addition to improved construction of the main section a number of adjustable features arranged to conform with paper mill practice and design as follows:

1. Simplified sectional construction so that any desired permanent deckle can be provided for.
2. Means for widening or narrowing the intake nozzle to suit the amount of water to be removed.
3. Means for adjusting the length of the intake nozzle to suit the width of pulp layer or deckle.
4. Means for adjusting the location of the intake nozzle (adjustable 4 ways) to suit all conditions of running, adjustable carrier arms so arranged as to give a very fine adjustment at point of contact on the felt. This feature fine enough so that pressure can be altered to suit different thicknesses of board or paper while running.
5. Carrier arms detachable so as to allow felt to be easily taken off or put on.
6. Glass windows in each end of main section so that actual operation can be seen and watched.
7. Control of vacuum by automatic regulator so that proper amount of suction can be applied to give a proper extraction of water on each sluice and complete removal of same to sewer or waste.

VII. Advantage of Use of the Hy-Vac Sluice

1. Suction as applied by reason of the fact that water and air are removed at the same time, eliminates the possibility of an air pocket or "blow" forming between the layer or layers of pulp on the felt and the layer forming on the mold.
 2. The actual removal of water at point of contact in such volume as has been demonstrated naturally causes a more evenly distributed moisture content in the pulp layers when leaving the last mold.
 3. This being the case, any board or paper maker cannot fail to realize many other actual advantages created thereby, such as:
 - A. In the operation of the drying equipment less steam will be required.
 - B. Increased speed of production induced by even drying.
 - C. Formation of sheet with probability of a better bond between pulp layers.
 - D. A better bond and formation should result in better tensile strength and a probable increase in bursting tests (Mullen or Ashcroft).
 - E. Easier beating conditions may result if such water extraction can produce a bond between pulp layers consisting alternately of "free" and "slow" or "short" and "long" fibers.
 - F. More uniform and less shrinkage of the sheet across the machine by maintaining a constant width.
 - G. Cleaner felts. This means not only larger production but longer tonnage life of felts.
 - H. Longer life of mold coverings. An actual occurrence in one of our test runs was the wearing out of one of the cylinder mold coverings. A crack was discovered in the covering of the mold in front of the sluice and instead of this crack causing a defect in the sheet that would eventually break the sheet at the calenders, the suction of the 'hy-Vac' sluice picked up the broken pulp layer, put it back into place before it reached the next couch roll, and the run was completed without a forced shutdown.
 - I. No possibility of the dirty waste from the middles spilling into the liner molds will make for cleaner liners on board.
 - J. Possibility of dispensing with the couch roll in its present form.
- The Hy-Vac Sluice was invented by Daniel H. Schwartz and is now controlled by the Holyoke Vacuum Sluice Company, a corpora-

tion of Springfield, Mass., the officers of which are Daniel H. Schwartz, president; John Hickey, vice-president and engineer, and H. E. Lindquist, secretary and treasurer.

The American patent on the device will, it is expected, be issued this month.

Swedish Paper and Pulp Engineers

Swedish paper and pulp engineers to the number of one hundred held their summer conference at Orebro, Sweden, as guests of the Orebro Paper Mills, Ltd., and Schullstrom and Sjostroms Factory, Ltd., on August 11 and 12. Their program consisted chiefly of inspections of the mills in and about this city, and of social gatherings.

The experts on cardboard and kraft paper were especially interested in the cement sacks manufactured from kraft paper by the Orebro Paper Mills. These sacks are so strong that they cannot be torn by the strength of hands alone, and it is believed that they will become a popular article on the market.

Another thing that attracted attention was Mr. Thunholm's system of conservation of heat from the dryers of paper machines. By this system the exhaust steam from the dryers is collected in a cover, and is carried by means of fans through a "lamell" battery. Meanwhile other fans force fresh air in a contrary direction, which absorbs the heat of the exhaust steam. The fresh air thus heated is blown back over the surface of the paper and thus facilitates drying.

While no figures are available, it is believed that this system involves considerable saving in coal.

The manufacture of machine felts by the Schullstrom and Sjostrom Company at Hogsjo also proved interesting to the engineers.

Program on Paper Testing

For the session at the fall meeting of the Technical Association on Paper Testing, the program has been prepared as follows:

TOPICS FOR DISCUSSION

1. *Microscopic analysis of fibers in paper.*
Report of work of committee and plans for further work.
2. *Folding endurance of paper.*
Report of tests made by various laboratories and a discussion of methods of calibration of the apparatus.
3. *Testing, tolerances and sampling.*
Consideration of report submitted by a special committee to the Bureau of Standards and published in the PAPER TRADE JOURNAL for September 14, 1922.
4. *Questionnaire on apparatus and testing of paper.*
Conclusions obtained from study of data obtained by the questionnaire.
5. *Sizing quality determination.*
Discussion of any new developments in regard to this test.

A Record Breaking Order for Textbooks

The honor of sending in the largest order for the textbooks upon pulp and paper manufacture, prepared under the direction of the Vocational Education Committee, goes to the *Pulp and Paper Magazine of Canada*, which is handling the sales of the textbooks in Canada for the Canadian Pulp and Paper Association. On September 29 a total of 221 volumes was ordered from the publishers for distribution among some of the most prominent Canadian firms, who are organizing study classes among their employees in cooperation with the Institute of Industrial and Domestic Arts, which under the direction of an exceptionally able staff, is prepared to give correspondence and class instruction wherever desired in the industry.

Fall Meeting of the Technical Association

HOTEL WOLVERINE, DETROIT, MICHIGAN

Monday and Tuesday, October 9 and 10, 1922

PROGRAM

Monday, 9.30 a. m. Business Session.

GEO. E. WILLIAMSON, Chairman, Amendments to the Constitution, Reports of Committees, General Business.

Monday, 12 m. Executive Committee Luncheon.

Luncheon meetings of other committees as arranged by the chairmen.

Monday, 2 p. m. Waste in the Industry.

R. B. WOLF, Chairman, G. D. BEARCE, Vice-Chairman, Mill Effluent and Material Recovery, Barking Drum Refuse.

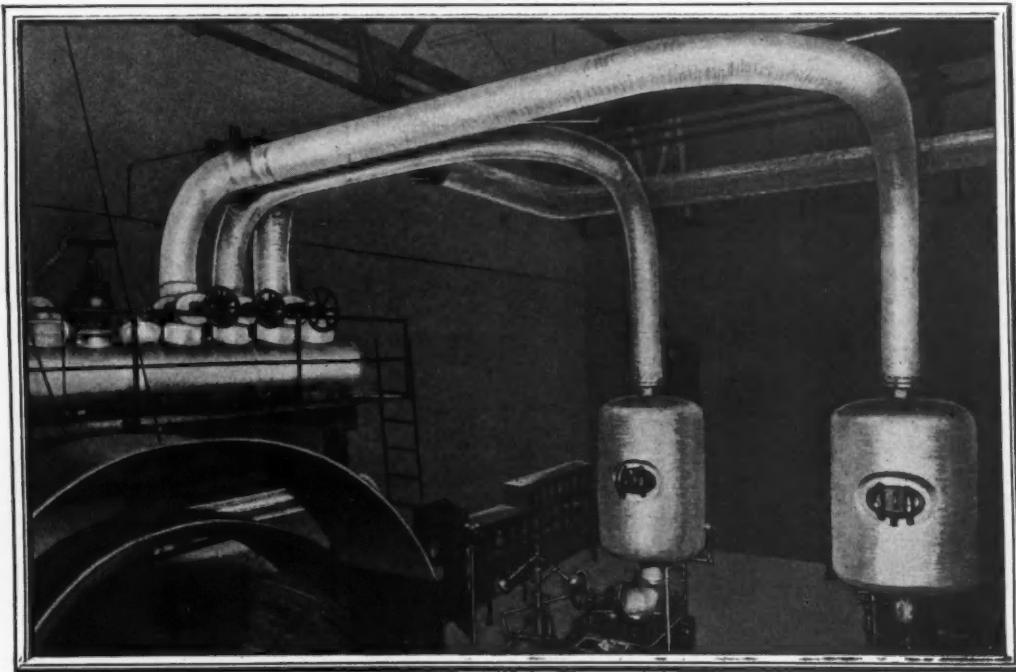
Monday, 7.30 p. m. Association Dinner in Hotel Wolverine. Tickets \$5.

Tuesday, 9.30 a. m. Sectional Meetings.

Paper Testing, F. A. CURTIS, Chairman; Drying of Paper, F. C. CLARK, Chairman.

Tuesday, 2 p. m. Plant Visits as Arranged.

Invitations have been received from Detroit Sulphite Pulp and Paper Co., Port Huron Sulphite and Paper Co., Chemical Engineering Department, Ann Arbor.



ENGINE ROOM, NORTHWEST PAPER COMPANY, CLOQUET, MINN., EQUIPPED WITH CRANE APPLIANCES AND FITTINGS

TO INSURE UNINTERRUPTED PRODUCTION

Maximum paper mill production is dependent on an unfailing supply of live steam to the digesters and uninterrupted delivery of power. In planning power plants for this service, prudent engineers specify equipment of efficient design and demonstrated endurance. Crane steam specialties and Crane valves and fittings

satisfy the most exacting pipe-line requirements. Correct design, the selection of suitable materials, high manufacturing standards and thorough factory tests assure in Crane power plant appliances, valves and fittings the longest possible life with a minimum of operating delays for repairs and replacements.

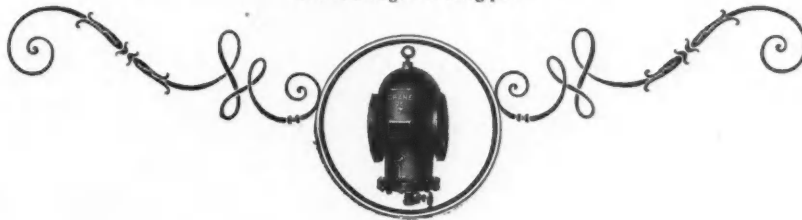
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PAPER IMPORT TRADE OF ARGENTINA

WASHINGTON, D. C., October 4, 1922.—In discussing the paper import trade of Argentina, John Matthews, Jr., chief of the Paper Division of the Department of Commerce, has the following to say:

As a market for American paper and paper products the Argentine ranks second among the Latin American countries, being surpassed only by Cuba. Cuba has been looked upon as really a part of our domestic territory, and consequently efforts to develop a market there have been more intensive than in any of the other Latin American countries. An equal effort in the Argentine would undoubtedly lead to our making that our best market, for from the standpoint of the amount of paper consumed the Argentine presents more possibilities than any of the Latin American markets.

News Print the Principal Item

Taking into consideration the amount consumed, news print paper is the principal item of import. The present estimated annual consumption being 40,000 metric tons, practically all of which is imported. Most of this is consumed in the Federal District of Buenos Aires and the province of Buenos Aires. Statistics show that for the first seven months of 1922 imports from the United States amounted to 5,000 metric tons. At this rate our exports for the year should equal approximately 25 per cent. of the total amount consumed. Our exports of news print consist almost entirely of paper in rolls of various widths, from 45 cms. (17½ inches) to 180 cms. (71 inches; in substance, 52 grammes per square meter (basis 32 pounds) per ream of 500 sheets 24x36). A large amount of news print in sheets is also consumed, but practically all of this is required in substance 45 to 47 grammes per square meter (basis 28 to 30 pounds per ream of 500 sheets 24x36). This is used mostly for wrapping purposes, and as a good printing surface is not essential American paper cannot compete because of the extra price demanded by our manufacturers for the light weights, it being much higher than that charged by European dealers. American news print for publication purposes is also higher in price than that manufactured in Europe, but it is also higher in quality, and it is mainly this difference in quality which has led to the development of a market for our news print in the Argentine. If the manufacturers could be induced to quote more reasonable prices for the paper of light weight which is used in sheets we could undoubtedly obtain a large share of this business.

Calendered Book Sized for Writing

The next item of importance is a paper known as "papel para obras," which is nothing more than a machine finish with a high surface or super-calendered book sized for writing purposes, so that it can be used for either printing or writing. Our grades of litho machine finish and super are similar to this, but they would probably require a slightly harder sizing. Practically all grades of machine finish and super hard sized for writing would find a market. The local mills (in the Argentine) make some very good grades, but the production is not sufficient to meet the demand. This paper is required trimmed and sealed and packed in export cases or compressed bales. The weights required run from 60 grammes per square meter (basis 25x38—40-500) and upward.

Substantial Demand for Writing

There is also a substantial demand for writing paper. The paper described in the preceding paragraph fills a part of this demand, although it is not designated as writing paper. It is used principally for cheap tablets and school composition books. That used for business purposes, such as letter heads, bill heads and other commercial forms, is principally sulphite bond. Prior to the war the Scandinavian countries and Germany supplied most of this, but due to forced purchases in the United States during the war, American sulphite bonds have been established. The grade which

has the largest sale is that which is known in this country as No. 1 sulphite and which is generally sold with the rubber stamped watermark. The regular mill watermarks are not popular, as each wholesale dealer in Buenos Aires has his own private watermark. The principal objection to buying American paper of this type is the differential in price charged for weights lighter than basis 17x22—16-500. The trade calls for paper in substance 49 grammes per square meter (basis 17x22—13-500) and upward. In some cases it is required as light as basis 17x22—12-500, but this is not absolutely essential. The European merchant will supply the light weights at the same price charged for heavy weights, and this gives him an advantage. We cannot apply our domestic trade customs to this business with any hope of successfully marketing this product, and if an increased price is absolutely necessary for the light weights the price charged should be based on the extra cost of production and not on domestic trade customs. It would be better to average the cost and quote a price which includes all weights from 13 pounds upward. On general stock orders the light weight will average about 25 per cent. The cheaper grades of sulphite bond (without watermark) are also in demand, but competition in this line is much keener and the objection toward increased price for light weights is more pronounced.

The market for the higher classes of writing papers is not large because of the high price as compared with the price of sulphite bonds. There is a fair demand for rag bonds and ledgers, but it is much more difficult to develop this trade because of the popularity of certain well-known English and French watermarked papers. The main problem, therefore, is creating a demand for certain watermarks, and when once established the trade will be steady without any special sales efforts. A few American watermarks have been established, and while the volume of business is not large there is a continual demand. For general ledger work a sulphite bond made in ledger weights is the most popular line. This need not be watermarked, but a watermark would help sales and bring steadier business. There is also a fair demand for manifold in white and colors.

Demand for Other Lines

Waxed tissue, glassine, greaseproof and vegetable parchment have a substantial demand among candy makers and concerns handling dairy products and other foodstuffs. All the large wholesalers carry stocks of each of these lines and some of the candy factories and dairies import direct.

The other main lines are coated book, white blanks, colored bristols, ivory boards, chip, news, straw, wood pulp and leather boards; also friction and flint-glazed papers. These are also stocked by the wholesale merchant and imported direct by the large printers and box makers.

There is practically no demand for improved wrapping paper. This is made by all of the local mills and a high protective duty practically prohibits importation.

Distribution by Buenos Aires Merchants

Distribution throughout the Republic is handled almost exclusively by the large wholesale paper merchants in Buenos Aires. There are a number of wholesale houses which carry large stocks. They are very well organized and have branches in the important cities in the Argentine, and some of the more important ones have branches in Montevideo, so that the trade throughout the republic and also that in Uruguay can be handled from Buenos Aires.

In order to do a successful business it is essential to have a branch office or a local agent or representative in Buenos Aires. Continual solicitation of business is absolutely necessary and an effort to bring business through correspondence is almost useless.

(Continued on page 64)

New York Office
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Howard Bond



Howard Ledger

"The Paper of Many Uses"

Manufactured by

THE HOWARD PAPER COMPANY,

Urbana, Ohio

West Virginia Pulp and Paper Company

Manufacturers of

Supercalendered and Machine

Finished Book and Lithographic Papers

Offset, Envelope and Music
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Bleached Spruce Sulphite and Soda Pulp

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*At
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Sulphite Bond, white and colors
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OF STANDARD QUALITY

Purity
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Ashmere
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(Write for Samples and Quotations)
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LINDSAY BROS., Inc.

Keystone Mill Division

MANUFACTURERS OF
**MANILA, WHITE AND KRAFT
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FOREIGN AND DOMESTIC
**CHEMICAL and MECHANICAL
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**HIGH GRADE
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Mills:
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**"DRAPER"
FELTS**

For Any Grade of Paper or Pulp

ARE GUARANTEED

To Give Entire Satisfaction

MANUFACTURED BY

DRAPER BROS. CO., CANTON, MASS.

LONGITUDINAL AND
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 WASTE HEAT BOILERS
 ALL CONFORM TO ASME CODE



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SAINT LOUIS U.S.A.

BOILER MANUFACTURERS FOR 40 YEARS

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BERLIN SW 11 (GERMANY)

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appears three times a week

Covers the whole paper trade (paper making, transforming, stationery). More than 12,500 bonafide subscribers all over the world.

Subscription: 4 Dollars



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 WOOD
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A Construction
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Free Roll Blue Prints

RODNEY HUNT MACHINE CO.

No. 63 Maple Street

Orange, Mass.

THE
Baby Claflin Refiner

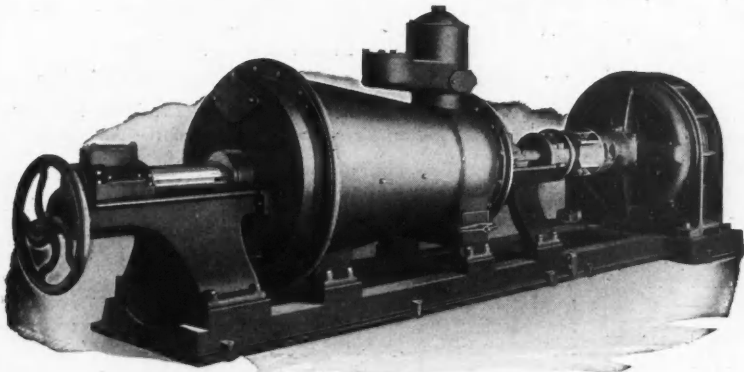
for
 Refining Light Stock and Experimental
 Purposes

The plug is 12 inches outside diameter at the large end. Six inches at the small end and seven inches long. It is equipped with Hyatt Roller Bearings and U. S. Ball Thrust Bearings. Capacity is 300 to 500 pounds per hour. A 10 H. P. motor is required with a speed of 750 RPM. The machine weighs 900 pounds.

Inquires will receive prompt attention

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THE DILLON JORDAN



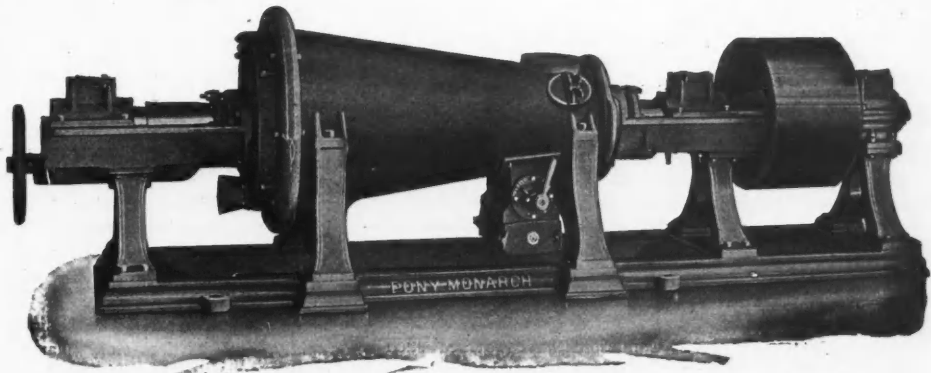
Our latest Improved Machine, three sizes; belt or direct connected motor driven. All Bearings self-oiling, adjustable and water-cooled. Fitted with Standard Steel Knives, Special Heat Treated Steel, Bronze, or Manganese Steel Plug and Shell Lining.

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**SIX SIZES OF
JORDANS,
BEATERS,
FROM ¾ LBS.
TO 3000 LBS.**



The Noble & Wood Machine Co., Hoosick Falls, N.Y.



BLEACHED SULPHITE

PAPER IMPORT TRADE OF ARGENTINA

(Continued from page 60)

Business in Buenos Aires is on a very personal basis and close personal contact with the buyer is necessary to establish confidence. The personality of your local agent is of much greater concern to the buyer than your reputation as merchants or manufacturers. Besides there are local customs and requirements which only a man on the spot can interpret successfully, and it is always best to have someone on hand in case of disputes.

Adverse exchange conditions have seriously hampered the growth of our business. The economic conditions in the Argentine are very favorable, however, and for this reason exchange should soon return to normal. There are indications of renewed demands for American papers and the Argentine market today presents about the best possibilities for development.

The following tables of exports to the Argentine are of interest to show the trend of business as compared with normal pre-war times:

U. S. Exports to Argentina of the Main Classes of Paper for the First Seven Months of 1922 Compared with the Fiscal Year 1913 and Calendar Year 1921

	1913, Fiscal Year		1921, Calendar Year		1922, First Seven Months	
	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars
News print....	28,617,918	709,010	4,468,693	318,346	10,827,788	428,629
Other book paper, inc. bible....	207,446	11,803	5,667,229	803,980	818,880	73,194
Writing paper, inc. envelopes and papeteries	.....	45,032	.....	235,302	110,664	15,673

Embargoes Hamper Boston Business

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., October 2, 1922.—With the settlement of the coal strike the outlook for the New England paper mill men is somewhat brighter. Their troubles they state, would be greatly lessened if they could get their freight over the railroads without the exasperating delays. The trend of prices is still upward and new prices on certain grades are being received from the various mills practically every day or two. Conditions have reached such a state that practically no goods can be shipped through from western points, with embargoes on the Delaware and Hudson, the Lackawanna, Boston and Albany and several other roads.

More than a ton of bogus prohibition paper with the Government watermark, only established a short time ago was seized here last week by agents of the Special Intelligence Bureau from New York who arrested James Milstein for the offense. He had engaged offices in a downtown building and it is alleged was preparing to sell the paper. The paper, of excellent texture, is watermarked with the Government mark. Upon this paper withdrawal blanks as well as physicians' prescriptions are made out. Milstein was held in \$10,000 bail.

Plans for School for Forest Rangers

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., October 2, 1922.—It is announced from Quebec that the School for Forest Rangers to be established by the Provincial Government will be situated either at Shawinigan, or attached to the Berthierville Provincial Nursery, according to requirements, and will be essentially practical. The course, which will last two years, will qualify those attending to do service as expert forest rangers, and is calculated also to give opportunity to the student to enter the Forestry School in Quebec if he wishes to complete the practical study by more extensive courses. Certificates of capacity, improving the present status of forest rangers, will be issued by the new school.

The policy of the Government regarding pulp and paper schools

will also be the subject of an act at the forthcoming session. It is understood that as a sequel to the extension given to the study of matters affecting forests in this province, the present forestry school may be extended so as to form a special school which would be located in St. Joachim, near Ste. Anne de Beaupre, where the pupils would be given the advantages of constant practical study with the Seminary limits on hand.

The Federal Fact-Finding Coal Commission

The following letter has been sent to President Harding by Dr. Hugh P. Baker, Executive Secretary of the American Paper and Pulp Association:

"The manufacturers of paper are very large consumers of coal. As with other industries consuming large quantities of coal, they have been affected, often seriously, by disputes between the coal operator and the miner. Our manufacturers have appreciated very keenly suggestion made by you in your recent speech that the Commission to investigate all phases of the coal industry should be a non-partisan body on which neither coal operators nor miners nor their representatives should have a place.

"This National Association, representing paper manufacturers from Maine to California, through its Executive Committee, urges that the Federal Fact-Finding Commission which will investigate the coal industry be truly a non-partisan body, upon which there shall be representation neither of the coal operators nor of the miners.

"We believe that the people of the country will have great confidence in a non-partisan Fact-Finding Commission, and that this confidence will reflect in a very satisfactory way upon our return to reasonably normal times."

Old Colony Envelope Co. Prospers

WESTFIELD, Mass., October 2, 1922.—A new company to manufacture envelopes has just opened a plant here under the name of Old Colony Envelopes Company, which is the successor to the Laubscher Envelope Company of Springfield, Mass. The officers of the company are men of practical experience in the manufacture of envelopes. The business of the company is growing rapidly, and its four-story plant is daily receiving new equipment to meet the demand for its product.

The president of the company is F. A. Juckett, for many years with the Strathmore Paper Company; Captain Chas. R. Bell, secretary, was for seventeen years with the B. D. Rising Paper Company; R. L. Lockwood, the treasurer, is a designer of note, and Joseph H. Fountain, director and superintendent, has been identified with the development of envelope machinery for many years. Aside from its own general line of envelopes the company is putting out a line of announcements in connection with the B. D. Rising Paper Company.

Chas. A. Esty Paper Co. Lists New Papers

WORCESTER, Mass., October 2, 1922.—Charles A. Esty last week attended at the Conference of Certificate Bond distributors held at Holyoke under the auspices of the Crocker-McElwain Company.

Among the new items listed by the Charles A. Esty Paper Company are Certificate Bond Letter, a distinctive white laid stock for letter head use and Certificate Bond packaged 8½ x 11 substance 16 and 20. Both of these items are manufactured by Crocker-McElwain Company.

Wants Box Making Machinery

SAN FRANCISCO, Cal., September 25, 1922.—R. J. Gruenberg, 711-13 Pacific Building, 4th and Market streets, is building a modern folding box and container plant and is interested in purchasing box board, folding box fiber containers and paper mill machinery.

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

PAPER MAKERS CHEMICAL CO. WESTERN PAPER MAKERS CHEMICAL CO.

EASTON	HOLYOKE	KALAMAZOO
JACKSONVILLE	PENSACOLA	ST. AUSTELL

CLAYS	ROSIN	SIZE
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PULP STONES

of absolutely the finest quality

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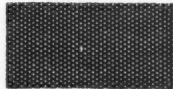
Perforated Metal Screens

For Pulp and Paper Mills

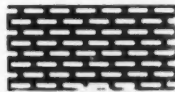
STEEL, COPPER, BRASS, BRONZE
and other Alloys

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

CHARLES MUNDT & SONS
53-65 FAIRMONT AVE.



.065 Inch Round



1/2 x 1/2 Inch Slots

JERSEY CITY, N. J

WANTED

SIDE OR ODD LOT ROLLS

Not interested in any item of less than one ton.
The larger the quantity the better.

Any color, strong sulphite or kraft paper will do.
Basis weight immaterial.

Address Box 5434, Paper Trade Journal

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



New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, OCTOBER 3, 1922.

New York paper men in nearly every branch of the industry expressed themselves as being well satisfied with the volume of business that accrued to them during the past week. Optimism was the keynote in paper circles, and it was the kind of optimism that was based upon more than hopes for the future. Substantial orders, innumerable inquiries, rising prices, more abundant fuel and greater transportation facilities were among the things that made them cheerful.

The general easing up of the tension in industrial conditions probably accounted to a great extent for the failure to establish a higher news print price level for the last quarter. Producers are confronted with fewer difficulties than prevailed three to six weeks ago and they realize that further price increases at this time would inevitably result in a curtailment of consumption, hence the current price levels, ranging from 3.85 to 4.00 cents a pound on contract news print, are being maintained.

Perhaps the highlight of the past week was the runaway pulp market. Practically all foreign pulps have advanced by leaps and bounds and incoming cables have often changed prices several times during a day. It is rumored that one of the large domestic manufacturers will advance the price of bleached sulphite to 5.00 cents a pound in the near future. Imported ground wood has leaped up to a range of \$34 to \$40 per ton while domestic follows close behind at \$32 to \$36.

Book manufacturers have resumed quotations on a weekly basis and prices are slightly higher than before the withdrawal. Coated book registered the greatest increase due probably to the casein tariff. Krafts continue strong, and tissues are in excellent demand. The lower grades of paper stock are moving actively, old rope is still passive, but bagging is coming to the fore and prices are stiffening.

All in all, the past week has been one of progress in the New York paper market. A feeling of confidence that even better conditions are ahead pervades the atmosphere in the office of practically every paper concern, and the long touted fall business appears really to have come at last.

News print mills are reported still to be grinding out capacity tonnages of paper to appease the insatiable appetite of publishers. The market is in ship-shape condition and it is believed that prices will hold firm at 3.85 to 4.00 cents a pound on contract news throughout the last quarter.

The feature of the book paper market during the week was the almost universal resumption of weekly quotations on the part of manufacturers. In most grades, including sized and super-calendered machine finished and machine finished lithograph, prices were increased but 5 per cent on the average. Coated enamel and coated lithograph book paper were, however, advanced as much as 10 per cent. Several large dealers in New York city stated that their mills were filled up with orders that would run over the next three to six weeks, but that the demand was somewhat spotty during the past week.

Fine paper prices are still being given out on a day-by-day basis in most instances, although many of the more prominent manufacturers have resumed quotations at somewhat higher levels than prevailed at the time of their withdrawal. Business is pouring in to dealers at a rapid clip and mills are working overtime to catch up with their orders. Prices, it is believed, will continue firm throughout the balance of the fall and winter.

Wrapping paper has been moving into consuming channels regularly and in increasingly larger quantities as transportation difficulties have lightened. Several grades of kraft paper advanced in price slightly, and it is generally expected that a new price level for all wrappings will be established within the near future due to the

recent advance in kraft pulp, the exceedingly high coal costs and the correspondingly increased prices of other raw materials.

The board market is just beginning to settle into a period of steady production that should continue many months. Mills are filled up with orders and are translating high priced coal into high priced finished board products. The demand is phenomenal, and orders are still flooding the offices of mill representatives and dealers.

Mechanical Pulp

Now that grinders are all eager to smash a few production records and keep up with the lively pace which is being set for them by news print and board manufacturers, it appears as though the weather men of the Atlantic seaboard had decided to have a "dry" winter to offset their recent "wet" summer. The lack of rain together with the high cost of fuel has finally brought about the long expected rise in ground wood prices. The imported is now quoted at \$34 to \$40 per ton and the domestic at \$32 to \$36, an advance of from \$2 to \$4 per ton. The fact that this is the normal busy season for ground wood producers added to the fact that everybody is in the market at once is tending to make supplies of mechanical pulp more and more scarce.

Chemical Pulp

Large producers and importers of chemical pulp agree that the present "runaway" market is a close parallel to that of 1920. Prices are advancing with each cable report from abroad and must, therefore, be regarded as nominal. Pronounced advances have been registered in both the foreign and domestic grades of bleached sulphite, easy bleaching, strong unbleached, kraft and soda pulps, the latter having moved up to \$4.25 to \$4.50. While interviewing a prominent pulp importer, a representative of the PAPER TRADE JOURNAL was asked to wait while the executive attended to a telephonic inquiry on a quantity of imported sulphite. During the phone conversation, a cable arrived announcing another advance in price. This was communicated to the prospective buyer, who promptly accepted. The unusually heavy demand, the shortage of steamers for pulp transport, the high cost of coal and the regular season for good business, all coming at once are largely accountable for the "runaway" tendency of the market.

Old Rope and Bagging

Consumers in the old rope market are not over anxious, according to several dealers in this commodity. Few of the inquiries materialize into orders, but the general tone of the market is firming up and better conditions are looked for within the next thirty days. Bright burlaps, heavy wool tares and practically every grade of roofing bagging have been moving actively throughout the past week, giving ample signs of life to the bagging market. Scrap bagging has been in fairly brisk demand by tissue and fine paper mills, and from all appearances the market is solidly upon its feet and in for a satisfying period of good, steady business.

Waste Paper

Nearly every grade of waste paper has rebounded from the temporary slump of a week ago, and prices are now firmer than ever, especially in the lower grades. Folded news is being quoted at \$1.30 a hundred and No. 1 mixed paper at \$1.20. Old krafts have stiffened up correspondingly, as has practically every grade of flat stock. Prices are regarded as quite firm.

Rags

Roofing rags advanced to the \$1.40 mark during the past week as the demand continued unabated. This grade has been in particular demand for the past month or more, and roofing felt manufacturers are still in the market for large spot quantities. Cotton rags are in regular demand and while prices have not been altered, they have ruled, in most cases, firm to strong. Thirds and blues have been quoted at an average of 1.75 cents a pound, and the demand has held steady for various specialty grades.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations October 3, 1922:

Table listing Paper Company Securities with columns for company name, bid price, and asked price.

Paper

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

Domestic Rags

Table listing Domestic Rags (New) including Shirt Cuttings, Cotton, and various types of rags.

Table listing Tissues (F. o. b. Mill) including White, Colored, and Silver tissues.

Table listing Kraft (F. o. b. Mill) products including No. 1 Domestic, No. 2 Domestic, and Imported.

Table listing Manila products including No. 1 Jute, No. 2 Jute, and No. 1 Wood.

Table listing Fiber Papers including No. 1 Fiber, No. 2 Fiber, and Common Bogus.

Table listing Boards (per ton) including News, Straw, Chip, and Binders' Board.

Table listing Wax Paper including Self Sealing White and 28 and 30 lb. basis.

Table listing Glassine including Bleached, basis 25 and 20 lbs.

Mechanical Pulp

Table listing Mechanical Pulp (Ex-Dock) including No. 1 Imported and No. 1 Domestic.

Chemical Pulp

Table listing Chemical Pulp (Ex-Dock, Atlantic Ports.) including Sulphite and Sulphate products.

Table listing Foreign Rags including White, No. 1 and No. 2, and various types of rags.

Foreign Rags

Table listing Foreign Rags (continued) including New Light Silesias, Light Flannelettes, and Unbleached Cottons.

Bagging

Table listing Bagging products including Gunny No. 1, Foreign, Domestic, and various types of bagging.

Twines

Table listing Twines including Cotton (F. o. b. Mill) and various types of twines.

Table listing various Paper products including India, Dark, B. C., Italian, and finished products.

CHICAGO

Table listing Paper products (F. o. b. Mill) for Chicago, including Rag Bond, Sulphite, and various types of paper.

PHILADELPHIA

Table listing Paper products (F. o. b. Phila.) including Bonds, Ledgers, Writings, and various types of paper.

Old Waste Papers

Table listing Old Waste Papers (F. o. b. New York) including Shavings, Flat Stock, and various types of waste paper.

Old Papers

Table listing Old Papers (F. o. b. Phila.) including Shavings, Ledgers, and various types of old paper.

Old Papers

Table listing Old Papers (F. o. b. Phila.) including Shavings, Gunny No. 1, and various types of old paper.

(Continued on page 70)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 30, 1922

SUMMARY

News print	346 rolls
Printing paper	21 cs., 110 rolls
Wall paper	42 cs., 3 bls.
Wrapping paper	1,526 bls.
Packing paper	1,451 rolls, 400 bls., 41 cs.
Writing paper	17 cs.
Filter paper	47 cs.
Cigarette paper	107 cs.
Decalcomania paper	7 cs.
Colored paper	19 cs.
Tissue	9 cs.
Crepe	70 cs.
Parchment	154 rolls
Miscellaneous paper	597 bls., 881 rolls, 103 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Paris, Havre, 20 cs.
Rose & Frank, Chicago, Havre, 53 cs.
British-American Tobacco Co., Laconia, Liverpool, 34 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Venmonia, London, 4 cs.
E. Fougere & Co., Homeric, Bordeaux, 43 cs.

WRITING PAPER

Coenca, Morrison & Co., Lafayette, Havre, 6 cs.
Coenca, Morrison & Co., Paris, Havre, 4 cs.
H. Reeve Angel & Co., Inc., Homeric, Southampton, 7 cs.

PACKING PAPER

J. P. Heffernan Paper Co., Mongolia, Hamburg, 390 bls.
Birn & Wachenheim, Ryndam, Rotterdam, 41 cs.
Peoples Trust Co., United States, Copenhagen, 1,451 rolls, 10 bls.

WRAPPING PAPER

Irving National Bank, Callisto, Hamburg, 178 bls.
M. O'Meara Co., by same, 1,348 bls.

WALL PAPER

A. Murphy & Co., Callisto, Hamburg, 42 cs.
A. C. Dodman, Jr., Co., Aquitania, Liverpool, 3 bls.

NEWS PRINT

M. Gottesman & Co., Inc., Seydlitz, Bremen, 346 rolls.

PRINTING PAPER

B. F. Drakenfeld & Co., Laccnia, Liverpool, 21 cs.
Chemical National Bank, Mongolia, Hamburg, 110 rolls.

DECALCOMANIA PAPER

L. A. Consmiller, Wurttemberg, Hamburg, 7 cs.

COLORED PAPER

P. C. Zuhke, Wurttemberg, Hamburg, 19 cs.

TISSUE PAPER

C. H. Wyman Co., Laconia, Liverpool, 9 cs.

CREPE PAPER

Globe Shipping Co., Ryndam, Rotterdam, 70 cs.

PARCHMENT PAPER

Newark Parafine & Parchment Paper Co., by same, 154 rolls.

PAPER

E. C. Melby, United States, Copenhagen, 19 bls.
Equitable Trust Co., by same, 75 bls.
M. M. Cohen, by same, 83 bls.
Miller Paper Co., by same, 308 rolls.
D. S. Walton & Co., by same, 573 rolls.
D. S. Walton & Co., by same, 87 bls.
Import Paper Co., Caronia, Hamburg, 34 bls.
Import Paper Co., by same, 9 cs.
C. H. Boutin, Silene, Marseilles, 29 cs.
Blannet Wiley Paper Co., Tuscania, Glasgow, 26 bls.
Birn & Wachenheim, Lafayette, Havre, 36 cs.
American Shipping Co., Wurttemberg, Hamburg, 6 cs.
C. F. Hubles & Co., Sierra Nevada, Bremen, 268 bls.
Import Paper Co., Ryndam, Rotterdam, 11 cs.
F. C. Strype, by same, 5 bls.
Devore & Reynolds Co., Paris, Havre, 5 cs.
N. A. Gottlieb, by same, 4 cs.
Whiting & Patterson, by same, 3 cs.

RAGS, BAGGING, ETC.

Castle, Gottheil & Overton, Venmonia, London, 103 bls. rags.
R. F. Downing & Co., by same, 116 bls. rags.
Mechanics & Metals National Bank, La Bourdonnais, Havre, 385 bls. paper stock.
Equitable Trust Co., Breiz Izel, Havre, 719 bls. rags.

Castle, Gottheil & Overton, by same, 110 bls. rags.
Castle, Gottheil & Overton, by same, 160 bls. bagging.

Irving National Bank, Lapland, Antwerp, 74 bls. paper stock.
American Express Co., Baltic, Liverpool, 33 bls. rags.

E. Butterworth & Co., Inc., by same, 74 bls. bagging.
Equitable Trust Co., by same, 174 bls. thread waste.

Railway Supply Mfg. Co., Silene, Genoa, 188 bls. cotton waste.
Equitable Trust Co., Hoosac, London, 128 bls. waste paper.

Equitable Trust Co., by same, 557 bls. rags.
American Exchange National Bank, Caronia, Hamburg, 218 bls. rags.

Dexcar Trading Co., Bristol City, Bristol, 308 bls. rags.
American Woodpulp Corp., Wurttemberg, Hamburg, 209 bls. lute waste.

Goldman, Sachs & Co., by same, 144 bls. rags.
Equitable Trust Co., Hammore, Leith, 257 bls. waste paper.

Equitable Trust Co., Homeric, Southampton, 164 bls. thread waste.
E. J. Keller Co., Inc., Chicago, Havre, 359 bls. rags.

Ladenburg, Thalman & Co., by same, 111 bls. rags.
Royal Mfg. Co., Mongibello, Genoa, 362 bls. cotton waste.

J. Abela & Co., Callisto, Hamburg, 64 bls. rags.
E. J. Keller Co., Inc., by same, 278 bls. rags.
E. J. Keller Co., Inc., by same, 224 bls. thread waste.

Pittsburgh Waste Co., Ryndam, Rotterdam, 73 bls. cotton waste.
M. O'Meara Co., by same, 21 bls. cotton waste.

American Woodpulp Corp., by same, 4 bls. rags.
F. J. Keller Co., Inc., Idaho, Hull, 334 bls. rags.
E. J. Keller Co., Inc., Idaho, Antwerp, 623 bls. rags.

E. J. Keller Co., Inc., America, Bremen, 38 bls. rags.
American Exchange National Bank, by same, 795 bls. rags.

National City Bank, C. Ortegat, Barcelona, 165 bls. rags.
National City Bank, by same, 250 bls. bagging.

Katzenstein & Keene, Inc., Tuscania, Glasgow, 289 bls. bagging.
Katzenstein & Keene, Inc., Mercier, Antwerp, 255 bls. rags.

OLD ROPE

Brown Bros. & Co., United States, Copenhagen, 53 coils.
Brown Bros. & Co., Bristol City, Bristol, 91 coils.

Chemical National Bank, Sierra Nevada, Bremen, 218 coils.
Katzenstein & Keene, Inc., Luxpatle, Genoa, 395 coils.
Brown Bros. & Co., Ryndam, Rotterdam, 85 coils.

Brown Bros. & Co., Idaho, Hull, 49 coils.
Bemis Bros. Bag Co., Cabo Ortegat, Barcelona, 49 coils.
Katzenstein & Keene, Inc., Starvyk, Naples, 38 bls.

International Purchasing Co., Chicago, Havre, 45 coils.
J. Andersen & Co., United States, Copenhagen, 150 bls.

R. F. Hammond, by same, 1,500 bls.
E. M. Sergeant & Co., by same, 750 bls.
E. M. Sergeant & Co., United States, Gothenburg, 816 bls.

Seggerman Bros., by same, 500 bls.
Acer & Co., Inc., Bornholm, Murray Bay, 7,919 bls.
Acer & Co., Inc., A. Maersk, Murray Bay, 9,575 bls.

WOODPULP

M. Gottesman & Co., Inc., Wurttemberg, Hamburg, 455 bls.
M. Gottesman & Co., Inc., Ryndam, Rotterdam, 580 bls.

H. Hollesen, Sierra Nevada, Bremen, 2,300 bls.
Central Union Trust Co., Callisto, Hamburg, 455 bls., 79 tons.

H. Hollesen, America, Bremen, 1,644 bls, 328 tons.
Hudson Trading Co., Natirar, Gothenburg, 1,200 bls., 203 tons.

WOOD FLOUR

A. Kramer & Co., Orupesa, Hamburg, 420 bags.
Hansa Co., by same, 2,039 bags.

CHINA CLAY

Moore & Munga, Bristol City, Bristol, 50 casks.
Keystone Varnish Co., by same, 25 casks.

CASEIN

Kalbfleisch Corp., Servian Prince, Buenos Aires, 1,000 bags, 60,000 ks.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 30, 1922

PAPER STOCK

International Purchasing Co., Nitonian, Liverpool, 56 bls. manila rope.
A. Katzenstein & Co., by same, 93 bls. new rags.

Train, Smith Co., by same, 137 bls. new rags, 155 bls. paper stock.
Geo. M. Graves Co., by same, 118 bls. old rags.

Maurice O'Meara Co., Mackinaw, London, 58 bls. old rags.
International Purchasing Co., by same, 305 coils manila rope.

Wheelwright Paper Co., by same, 319 bls. waste paper.
Geo. M. Graves Co., by same, 14 bls. old rags.

Crocker, Burbank & Co., by same, 283 bls. waste paper.
American Express Co., by same, 128 bls. waste paper.

Hollingsworth & Vose Company, by same, 78 coils manila rope.
C. H. Dexter & Sons, by same, 916 bls. rags.

Bird & Son, Inc., by same, 150 bls. rags.
Ordu, by same, 14 bls. new rags.
Katzenstein & Keene, Inc., Novian, Liverpool, 148 bls. rags.

American Express Co., Appomattox, Liverpool, 36 bls. rags.
Train, Smith Company, Pivernne, Liverpool, 98 bls. waste paper.

T. McClelland, by same, 212 bls. waste paper.
Geo. M. Greaves Company, by same, 94 bls. waste paper.

Berring Bros., by same, 57 coils rope.
A. D. Downing & Co., by same, 224 bls. paper stock.

HIDE CUTTINGS

E. F. Russ Co., Netonian, Liverpool, 614 bags hide cuttings.

Edwin Ashworth, by same, 243 bags hide cuttings.
Edwin Butterworth & Co., by same, 162 bags hide cuttings.

Kalbfleisch Corp., Leighton, Buenos Aires, 347 bags casein.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 30, 1922

C. Marsden Sons, Ltd., Stanmore, Dundee, 247 bls. paper.
C. Marsden Sons, Ltd., by same, 43 cs. paper.

Irving National Bank, Stanmore, Leith, 167 bls. rags.
Katzenstein & Keene, Inc., Missouri, Antwerp, 186 bls. rags.

Castle, Gottheil & Overton, Feliciano, London, 98 bls. rags.
Castle, Gottheil & Overton, Hannington Court, Bordeaux, 142 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 30, 1922

E. J. Keller Co., Inc., Breiz Izel, Havre, 201 bls. bagging.
Hudson Trading Co., Natirar, Gothenburg, 3,000 bls. wood pulp; 508 tons.

GALVESTON IMPORTS

WEEK ENDING SEPTEMBER 30, 1922

M. Gottesman & Co., Inc., Hugo Stinnes II, Hamburg, 476 reels news print.

TAYLOR, BATES & CO.

Members New York Stock Exchange
Members New York Cotton Exchange

100 Broadway, New York
Tel. Rector 1140



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"Hurum" "Bamble"

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Robert Dollar Co., L. C. Smith Bldg., Seattle, Wash.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, October 3, 1922.

BLEACHING POWDER.—The past week has witnessed a considerable change in the bleaching powder market. Prices stiffened 10.00 cents per hundred pounds, and some bleach manufacturers are asking \$1.80 and higher for spot quantities. Supplies of the chemical are very difficult to locate and large drum quantities are practically unavailable.

BLANC FIXE.—The unusually heavy demand from papermaking consumers has had a firming effect upon the market for blanc fixe, quotations of \$80 to \$85 per ton on the dry commodity not being infrequent. Blanc fixe pulp has advanced correspondingly and is now listed at \$50 to \$55.

CAUSTIC SODA.—Caustic has continued to move along in irregular amounts, the increasingly higher cost of coal combined with shipping difficulties tending to make production more and more hazardous. The price of 2.70 cents a pound, works, still holds for 60 per cent basis caustic.

CHINA CLAY.—China clay is still in excellent demand by American consumers, and the scarcity of ships for clay transport has served to hold prices exceedingly firm at the higher levels recently established. \$15 to \$22 per ton is quoted on imported clays, \$8 to \$11 on domestic washed, and \$6 to \$8.50 on the unwashed.

CASEIN.—The casein market appears to be relaxing somewhat in spite of the heavy demand that still prevails. With the coming of summer in the Argentine Republic large imports to this country will be resumed. These should be in sufficient quantity adequately to cover the panicky demand which resulted from the announcement of a proposed four cent tariff several months ago. Both dealers and consumers now feel that since the duty has been fixed at 2.50 cents a pound there is a definite basis upon which to operate. Quotations range between 15.00 and 18.00 cents a pound.

LIQUID CHLORINE.—The price tone of liquid chlorine is steadying perceptibly, quotations having settled to an average of 5.00 to 6.00 cents a pound for chlorine in 100-pound cylinder lots. Consumption has not increased to any great extent but reserve supplies are being used up rapidly.

ROSIN.—Moving in regular quantities to the paper manufacturing trade, grades E, F and G, of rosin are still holding in the neighborhood of \$6.25 per barrel of 280 pounds, New York.

SALTCAKE.—Their books filled with orders, manufacturers of saltcake are not quoting on the commodity for the balance of the year. Chrome cake has advanced to \$23 per ton, works, while acid cake is still quoted at \$25 and \$26. Supplies are very scarce and it is believed the price will advance even higher.

SODA ASH.—The schedule price of 1.51 cents a pound for soda ash has been the basis of transactions in this market for the past week, with bag and bulk lots of ash quoted at 20.00 and 30.00 cents per cwt. lower respectively.

STARCH.—This commodity has continued in good demand by consumers and no drastic price changes have either taken effect in recent weeks or appear imminent. Bag lots of paper-makers' starch are quoted at 2.57 cents a pound, while powdered starch is 1/10 of a cent lower.

SULPHUR.—The 1922 schedule price of \$18 to \$20 per ton on brimstone is holding firm, and demand continues to be regular in this market.

SULPHATE OF ALUMINA.—Another price advance was registered in the aluminum sulphate market last week. Iron free sulphate is now listed at 2.50 to 2.75 cents a pound and consumers are freely paying 1.50 cents for spot quantities of the commercial grade. The two more important factors tending to bring about this increase are the difficulty in securing adequate quantities of bauxite and the high cost of coal.

Market Quotations

(Continued from page 67)

Solid Ledger Stock.	2.25	@	2.50	New Black Soft.	.06 1/4	@	.06 1/2
Writing Paper.	2.00	@	2.25	New Light Sec-			
No. 1 Books, heavy.	2.25	@	2.50	onds	.02 3/4	@	.02 3/4
No. 2 Books, light.	1.40	@	1.50	Khaki Cuttings.	.03 1/2	@	.04 1/4
No. 1 New Manila.	2.75	@	3.00	Corduroy	.03 1/4	@	.03 3/4
No. 1 Old Manila.	1.50	@	1.75	New Canvas	.07 1/2	@	.08
Container Manila.	1.35	@	1.40	New Black Mixed	.04	@	
Old Kraft.	2.25	@	2.50	Old			
Overissue News.	150	@	1.60	White, No. 1—			
Old Newspaper.	1.20	@	1.25	Repacked	.06	@	.06 1/2
No. 1 Mixed Paper.	1.10	@	1.15	Miscellaneous	.04 1/4	@	.04 3/4
Common Paper.	.80	@	.90	White, No. 2—			
Straw Board, Chip.	.80	@	.90	Repacked	.03	@	.03 1/2
Binders B'l. Chip.	.80	@	.90	Miscellaneous	.03	@	.03 3/4
Domestic Rags—New.				Thirds and Blues—			
Price to Mill, f. o. b. Phila.				Repacked	200	@	2.25
Shirt Cuttings—				Miscellaneous	1.85	@	1.90
New White, No. 1.	11 1/4	@	11 3/4	Black Stockings	2.75	@	3.00
New White, No. 2.	.06	@		Roofing Stock—			
Silicias, No. 1.	.06 1/4	@	.07	No. 1	1.30	@	1.35
New unbleached.	.10 1/4	@		No. 2	1.20	@	1.25
Washables	.03 3/4	@		No. 3	1.10	@	1.15
Fancy	.04 3/4	@	.05 3/4	No. 4	1.10	@	1.15
Cottons—according to grades—				No. 5A	1.05	@	1.10
Blue Overall.	.05 1/4	@	.05 3/4	B.			nominal
New Blue.	.02 1/4	@	.02 3/4	C.			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper				Wood, Vat Lined.	.60	@	.65
Bonds	.07 1/2	@	.65	Filled News Board.	.52	@	.50
Ledgers	.08	@	.55	Solid News Board.	.60	@	.65
Writings	.08	@	.42	S. Manila Chip.	.70	@	.75
Superfine	.15	@	.22 1/2	Pat. Coated	.85	@	.90
Fine	.15	@	.18				
Books, S. & S. C.	.08	@	.12	Old Papers			
Books, M. F.	.06	@	.10	Shavings—			
Books, coated.	.08 1/2	@	.16	No. 1 Hard White	4.25	@	4.50
Label	.09 1/2	@	.13	No. 1 Soft White	3.30	@	3.45
News, sheets.	4.50	@	4.75	No. 1 Mixed	1.50	@	1.75
News, rolls.	4.00	@	4.25	Ledgers & Writings	1.75	@	2.00
Manilas—				Solid Books	2.50	@	3.00
No. 1 Manila.	\$5.50	@	7.00	Blanks	1.70	@	1.80
No. 1 Fiber.	.07 1/4	@	.12	No. 2 Light Books.	1.50	@	1.80
No. 1 Jute.	10.50	@	12.00	Folded News, over-			
Kraft Wrapping.	.06 1/4	@	.12	issues	22.00	@	25.00
Common Bogus.	3.00	@	3.50	Gunny Bagging	.85	@	.90
				Manila Rope.	5.75	@	6.00
Boards				Common Paper.	.80	@	.90
(Per Ton Destination)				Old News.	.80	@	.90
Chip	\$60.00	@	\$65.00	Old Kraft	2.00	@	2.40
News, Vat Lined.	60.00	@	65.00				

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper				Sulphite, bleached.	.95	@	100.00
(Mill Prices to Jobbers f. o. b. Mill)				Sulphate	.70	@	—
Bond—				Old Waste Papers			
Sulphite	.11	@	.12 1/2	(In carload lots, f. o. b. Toronto)			
Light tinted	.12	@	.13 1/2	Shavings—			
Dark tinted	.13 1/4	@	.15	White Env. Cut.	3.75	@	—
Ledgers (sulphite).	.13	@	.13	Soft White Book			
Writing (sulphite)	.09 1/2	@	.12	Shavings	3.75	@	—
News, f. o. b. Mills—				White Blk News	2.00	@	—
Rolls (carloads)	3.50	@	—	Book and Ledger			
Sheets (carloads)	—	@	4.25	Flat Magazine and			
Sheets (2 tons or				Book Stock (old)	2.25	@	—
over)	—	@	4.50	Light and Crum-			
Book—				pled Book Stock	2.10	@	—
No. 1 M. F. (car-				Ledgers and Writ-			
loads)	9.00	@	—	ings	2.50	@	—
No. 2 M. F. (car-				Solid Ledgers.	1.95	@	—
loads)	8.00	@	—	Manilas—			
No. 3 M. F. (car-				New Manila Cut.	2.00	@	—
loads)	7.50	@	—	Printed Manilas.	1.55	@	—
No. 1 S. C. (car-				Kraft	2.50	@	—
loads)	9.50	@	—	News and Scrap—			
No. 2 S. C. (car-				Strictly Overissue	.90	@	—
loads)	8.50	@	—	Folded News.	.80	@	—
No. 1 Coated and				No. 1 Mixed Pa-			
litho.	14.00	@	—	pers	.70	@	—
No. 2 Coated and				Domestic Rags—			
litho.	13.00	@	—	Price to mills, f. o. b. Toronto.			
No. 3 Coated and				Per lb.			
litho.	12.25	@	—	No. 1 White shirt			
Coated and litho.,				cuttings	.11 1/4	@	.11 3/4
colored	14.25	@	—	No. 2 White shirt			
Wrapping—				cuttings	.06 1/2	@	—
Grey	4.50	@	—	Fancy shirt cut-			
White Wrap	5.00	@	—	tings	.06	@	.06 1/4
"B" Manila	5.50	@	—	No. 1 Old whites	.04	@	—
No. 1 Manila	6.75	@	—	Thirds and blues	.02	@	.02 1/2
Fiber	6.75	@	—	Per cwt.			
Kraft, M. F.	8.00	@	—	Black stockings.	2.50	@	—
M. G.	8.15	@	—	Roofing stock:			
				No. 1	1.50	@	—
Pulp				No. 2	1.40	@	—
(F. o. b. Mill)				Roofing stock:			
Ground wood.	\$28.00	@	\$35.00	Manila rope.	.06	@	.06 1/4
Sulphite easy bleach-				No. 2	.01 3/4	@	—
ing	65.00	@	70.00	Gunny bagging.	1.00	@	1.25
Sulphite news grade.	60.00	@	64.00				

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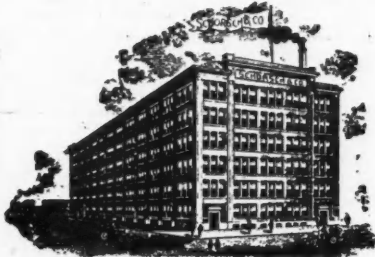
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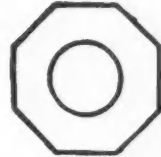
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WANTED—Experienced Printing Paper Salesman for New England territory. Must be capable of earning good salary. State your full experience in first letter. Address, Box 5423, care Paper Trade Journal. O-12

WANTED—A Competent Millwright to take care of all repairs in connection with a two Machine, Chip Board Mill with production of 60 tons 24 hours. Address, Box 5425, care Paper Trade Journal. O-5

WANTED—Boss Machine Tender. Must be capable, thoroughly experienced, give results and willing to prove himself on two Cylinder Machines making Bristol Boards. Good opportunity with chance of advancement. State experience, send copies of references in first reply. Address, Box 5426, care Paper Trade Journal. O-26

WANTED—Paper Boxboard also Container Board Salesman. Young man ambitious and efficient. State experience and salary desired. Address, C. L. LaBoiteux Company, Cincinnati, Ohio. O-12

WANTED—Paper Boxboard Salesman for New York City Trade. Address, C. L. LaBoiteux Company, Suite 914 Borden Bldg., 350 Madison Avenue, New York City. O-12

WANTED—For a Fifteen Ton Binders Board Mill, a practical foreman to look after the manufacturing end. Must be capable, submitting references and past record of making No. 1 Binders Board. No mechanical responsibility. Address, Box 5463, care Paper Trade Journal. O-12

WANTED—A competent Mill Wright to take care of repairs for Two Machine Tissue Mill. Reply immediately. Address, Box 5464, care Paper Trade Journal. O-26

WANTED—One Beater Engineer for Book and Bond Mill. Address reply to Box 5465, care Paper Trade Journal. O-5

WANTED—Superintendent for 60-ton one Machine Board Mill in suburbs of large city in New York State. Must be an up-to-date production man. Address, Box 5466, care Paper Trade Journal. O-5

WANTED—Capable Beater and Machine Room Help for new modern Paper Mill located in large Midwest City. Excellent opportunity for steady experienced men. Machine operating 500 feet. Three shifts. Write giving full details and references. Address, Box 5467, care Paper Trade Journal. O-12

WANTED—Machine Tender, Beater Engineer and Cutterman for M. F. Book Mill. Furnish references with reply. Address, Box 5468, care Paper Trade Journal. O-19

MACHINE TENDER for Fourdrinier, also one for Cylinder Tissue Machine, for Pacific Coast. Give full particulars about yourself. Address, Box 5440, care Paper Trade Journal. O-12

WANTED—First Class Machine Tenders, on Harper Fourdrinier with Edwards Attachment, making high grade waxing papers from 15 to 30 pounds. Only men able to keep up machine and get production and quality need apply. Address, Box 5485, care Paper Trade Journal. O-12

WANTED—3 experienced Back Tenders for Book and Bond Papers. Lybster Mill of Lincoln Mills, Limited, Merrittton, Ont. O-12

WANTED—Machine tender for 96" Machine making Book, Bond and Writings. None but first class man need apply. Address, Box 5441, care Paper Trade Journal. O-12

WANTED AT ONCE—Assistant Superintendent to take charge of one Machine Board Mill nights, making 25 tons Newsboard, Tag and Colored Stock. Steady work with future for man who can work hard and get results. State references, wages expected and how soon you could report, in first letter. Address, Box 5443, care Paper Trade Journal. O-12

AN EASTERN MANUFACTURER of Glazed and Plated surface coated box makers' papers wishes to employ experienced salesman familiar with the trade. References required. Address, Box 5390, care Paper Trade Journal. O-5

HELP WANTED

SLITTER on Meisel Machine. Good opportunity for capable experienced man. New York City. State all particulars. Address, Box 5469, care Paper Trade Journal. O-5

SITUATIONS WANTED

YOUNG MAN in Erie, Pa., 26 years old, well educated, 4 years' experience as inside man with mill's agency, has fair knowledge of merchandising and manufacture of high grade papers and specialties, comes from paper making family, desires connection with Manufacturer, Jobber or Converter in capacity with future. Possesses resourcefulness and initiative. Willing to start at bottom. Address, Box 5471, care Paper Trade Journal. O-5

POSITION WANTED as chief electrician with some large Paper Manufacturing Concern. Have had ten years' experience. Address, Box 5472, care Paper Trade Journal. O-5

SALES AGENT or assistant in New York City and vicinity for Paper Mill making good product. Desires permanent connection, willing to work hard if future is assured. 14 years' experience in jobbing trade. Address, Box 5473, care Paper Trade Journal. O-5

WANTED—Position as cylinder machine tender. Have had ten years' experience on chip news, manillas and Patent Coated. Address, Box 5474, care Paper Trade Journal. O-12

CHEMIST AND CHEMICAL ENGINEER with previous experience in Sulphite and Paper Mills, is open for engagement. Now employed. Good references. Address, Box 5475, care Paper Trade Journal. O-19

BOSS FINISHER of wide experience in Box Boards, Book, Bond and all Cylinder and Fourdrinier Specialties. Seeks engagement with good mill that will appreciate a practical leader who can get production and has a thorough knowledge of Finishing Equipment. Address, Box 5476, care Paper Trade Journal. O-19

SUPERINTENDENT wants position; have life time experience in the paper business. Making Light Waxing Bond, Book, Kraft, Wrapping Board, Colors on Fourdrinier, Harpers, and Cylinders. Address, Box 5477, care Paper Trade Journal. O-12

WANTED—Position as Machine Tender on Cylinder, Harper or Fourdrinier. Am used to tissue and heavy weights, high and coarse grades. Address, Box 5478, care Paper Trade Journal. O-5

AN EXECUTIVE SALESMAN of high capacity, college graduate, nine years' thorough experience with paper industry, desires connection with a progressive house. Possesses proper vitality and enthusiasm. Address, Box 5483, care Paper Trade Journal. O-5

YOUNG LADY, 22, at present employed by well known retail paper concern, desires to make a change. Have held responsible position as bookkeeper, managing and office work. Full knowledge of paper lines. Best references. Address, Box 5484, care Paper Trade Journal. O-5

WANTED—By man with years of experience in the manufacture of all grades of Rope Paper, position as superintendent or office executive. Can get production and quality and well qualified to handle men. Want to make connections with concern where there is a good future. Address, Box 5470, care Paper Trade Journal. O-5

BOSS FINISHER residing in vicinity of New York City is open for engagement in Coating Mill making Book, Lithographic, Glazed, Embossed Fancy Papers and Coated Specialty. Address, Box 5431, care Paper Trade Journal. O-12

SUPERINTENDENT and technical man with nine years' experience in paper making and laboratory research desires opportunity to learn all phases of office administration in up-to-date paper mill. Nominal salary required. Address, Box 5408, care Paper Trade Journal. tf

SITUATIONS WANTED

MASTER MECHANIC with a large experience in construction, reconstruction and efficiency, desires to make change. Address, Box 5383, care Paper Trade Journal. tf

SUPERINTENDENT: Now employed desires to make change. Well up on all grades of Board. Can handle help and get production. Can handle own repairs and construction. Address, Box 5409, care Paper Trade Journal. O-12

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. O-5

SULPHITE SUPERINTENDENT, 20 years' practical and technical training, wishes to get in communication with Managers of Mills who want the best and are not getting it. Address, Box 5353, care Paper Trade Journal. O-5

MECHANICAL ENGINEER; 12 years' experience with thorough knowledge of power plant operation and engineering. Will submit record for investigation to executive requiring reduction in power costs and coal consumption. Address, Box 5400, care Paper Trade Journal. O-5

SALESMAN—Ten years' experience as paper Broker, Coated, Book and Fine. Wants to make new connections, for Philadelphia District. Address, Box 5444, care Paper Trade Journal. O-12

MILL CONNECTION WANTED by young man with several years' experience in manufacture and sale of Wood Pulp, Wrapping, Waxed Papers, and Paper Specialties. Will open office to represent mills and sell on commission basis in New England. Address, Box 5445, care Paper Trade Journal. O-12

POSITION WANTED—Young man with several years' experience with manufacturers and jobbers of paper would like position as manager of mill. Address, Box 5446, care Paper Trade Journal. O-12

ASSISTANT to General Manager or President as Plant Manager. Experienced on Ground Wood and News. Capable taking entire charge as Executive. Desirable connection wanted rather than immediate large salary. Address, Box 5447, care Paper Trade Journal. O-5

SALESMAN with University and Practical Education, 36 years old, wishes to affiliate with mill making bonds, writings and envelope stocks. To travel the middle west or Pacific Coast. Address, Box 5448, care Paper Trade Journal. O-12

PURCHASING AGENT open for engagement. Fifteen years paper mill experience, ten years with one of largest Paper Mills in the country. References furnished from present employer. Address, Box 5449, care Paper Trade Journal. O-12

WANTED—A position as tour foreman in mill making Manillas, Bond, Kraft, or Wrappers by middle aged married man with 25 years' experience. Will accept position as Machine Tender where there is a chance for advancement. At present employed. Address, Box 5451, care Paper Trade Journal.

PULP AND PAPER CHEMIST with thorough technical training and twelve years' practical experience with present employers, wishes to change to progressive company desiring to improve efficiency of manufacturing operations. Competent to organize and direct technical department for testing, control of mill operations, experimental and research work. Address, Box 5452, care Paper Trade Journal. O-19

YOUNG MAN, age 26, honest, reliable and discreet; having learned paper making under my father, who was a Mill Superintendent. Have worked in all departments of mill. Ran Fourdrinier, Cylinder and Yankee Machines, am running news machine now, but am ambitious and want to advance. Would make good assistant to President, Manager or Superintendent. Address, Box 5457, care Paper Trade Journal. O-5

SITUATIONS WANTED

WANTED: POSITION as Machine Tender on Straw, Corrugating and Chip. Can furnish best references from different concerns. Address, Box 5461, care Paper Trade Journal. O-5

TECHNICAL ADVISER & PAPER MAKER, young man, 32 years of age; technical education, 10 years' experience covering Physical and Chemical Testing of Pulps and Paper, Chemicals, etc.; Experimental and Development Work on Cotton Linters, Long Leaf Pine, Sugar Cane (Bagasse), etc. Have a thorough knowledge of Pulp and Paper Machinery and Operation of same. If you have a position open in your organization which requires technical and practical knowledge of Paper Making Processes let me confer with you personally regarding my experience, ability, etc. Best of references. Open October 1st. Address, Box 5458, care Paper Trade Journal. O-5

SUPERINTENDENT of ability, now employed, desires to make change. Twenty-five years' experience on all grades of board. Expert on colors. Can handle repairs and get production. Address, Box 5455, care Paper Trade Journal. O-5

FOR SALE

FOR SALE—Protected Paper Specialty; highly profitable; suitable for Pickup Paper Machine. Address, Box 5481, care Paper Trade Journal. O-5

FOR SALE—Deane Duplex Fire Pump, 14x 8½x10, capacity 600 gallons per minute. Address, Box 5482, care Paper Trade Journal. O-5

FOR SALE—One "Sheridan," new model, 36-inch Guillotine Automatic Paper Cutter, belt driven, with one extra knife and fifteen cutter knife sticks. Address, Box 5433, care Paper Trade Journal. O-12

FOR SALE—6 Farnum Drives. Complete Triple-Deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. O-5

MISCELLANEOUS

WANTED—One Supercalendar 110 to 130" wide, direct connected, motor driven. Address reply to Box 5479, care Paper Trade Journal. O-5

SAN FRANCISCO OFFICE, well established, selling paper and paper specialties on Pacific Coast and Export, desires Representation, Eastern Manufacturers' Paper Specialties. Address, Box 5480, care Paper Trade Journal. O-26

WANTED—One Nash Hytor Turbine Vacuum Pump, Number four or number six. Write Mill Department, Rose Lithographic Corporation, 55 33rd Street, Brooklyn, N. Y. O-5

FOURDRINIER MACHINE WANTED—State size, condition, and price fully and where can see machine. Price must be f.o.b. cars. Address, Box 5455, care Paper Trade Journal. O-12

A well known and long established Firm in Sweden, with excellent Pulp Mill connections in Scandinavia, desires to be represented in United States. We desire a party who is well acquainted with users and buyers of high grade pulps. Address, Box 5439, care Paper Trade Journal. O-5

MISCELLANEOUS

In the Matter of the Great Eastern Paper Company, Limited, Authorized Assignor.

TIMBER LIMITS, PULP AND SAW MILLS

NOTICE OF SALE BY TENDER

NOTICE IS HEREBY GIVEN that, pursuant to the Bankruptcy Act, The Royal Trust Company, Montreal, as Authorized Assignee of the property of the Great Eastern Paper Company, Limited, Authorized Assignor, duly authorized for the purpose, offers for sale by tender all the moveable and immovable property of the Authorized Assignor, including approximately 1400 acres of freehold timber lands situated in the Township of Denoue, in the County of Gaspe, in the Province of Quebec, being Blocks "B" and "C" of the said Township; 450 square miles more or less of timber limits under license from the Crown, consisting of Limits River Magdalen Nos. 2, 3, 4, 5 and 6 North, Limits River Magdalen Nos. 1, 2 and 3 South, Limits River Pierre and Claude No. 29, Township of Taschereau No. 30 and Township of Denoue No. 19, together with water powers, saw mill, (Pulp mill partially damaged by fire), machinery, equipment, stock, stores, supplies and provisions, and all the issued capital stock of the Magdalen River Valley Railway Company. All open for inspection.

The sale is to be subject to all existing contracts and a reserve of all accounts receivable and cash on hand.

Tenders for the above will be received by The Royal Trust Company, as Authorized Assignee, up to and including the 3rd day of November, 1922.

The sale will be made en bloc for cash and any intending purchaser must enclose with his tender as a deposit an accepted cheque of a Chartered Bank in Canada, to the order of The Royal Trust Company, as Authorized Assignee for a sum equal to ten per cent. of the amount of the tender, which deposit, in the event of the acceptance of the tender, will be applied on account of the purchase price, and if the tender is not accepted will be returned. Should any purchaser whose offer has been accepted fail to comply with the conditions of the sale or to pay the full amount of the purchase price within one week from the acceptance of his tender, then, in such event, the said deposit shall be forfeited and shall belong absolutely to The Royal Trust Company, as Authorized Assignee, as liquidated damages.

The Authorized Assignee shall not be bound to accept the highest or any tender.

Information may be obtained by application to the undersigned.

THE ROYAL TRUST COMPANY,
Authorized Assignee,
105 St. James Street, Montreal.

O-26

MISCELLANEOUS

SHARTLE

can fill your requirements in used or new machinery.

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About 35,000,000 Kilowatt Hours per year available at Tonawanda, or North Tonawanda, New York.

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Rail transportation facilities unsurpassed. Labor and Living Conditions Good.

Tonawanda Power Company
North Tonawanda, N. Y.

O-5

Rebuilt Paper Mill Machinery

In Stock and Guaranteed

Not Where Is and As Is

FOURDRINIER TISSUE MACHINE—One 68" FOURDRINIER PARTS—Pusey & Jones 118", 100". Kutter Trowbridge 96"

PRESS PARTS FOR PAPER MACHINES—Pusey & Jones bell crank housing with rolls 18" x 117". Black & Clawson swing arm housing.

DRYERS—Four 48" x 111", one 36" x 80", two 36" x 73", four 48" x 68", one 84" x 67", eleven 42" x 66", two 36" x 48", four 20" x 39".

CHILLED CALENDERS—One 86" six roll, one 82" five roll, one 66" five roll, one 54" five roll, two 58" five roll.

DILLON DOCTOR—For machine calender 60" to 144" face.

SLITTERS & WINDERS—One 120" Warren, one 108" Kidder, one 110" two drum Moore & White.

REELS—Pusey & Jones two drum, Rice, Barton & Fales two drum.

BEATERS—Four N. & W. 72" x 42", one Dils 62" x 50" iron tub, one Jones 62" x 52", one Dillon 60" x 48", two Emerson 54" x 60", three Downingtown 54" x 42" iron tub, two Emerson 53" x 52", seven Horne 36" x 36", two No. 2 Claffins, two No. 1 Claffins. One 36" x 26" N. & W.

JORDANS—One Appleton Wagg Majestic, two No. 2 Dillon Improved, one Large Horne, two Monarch, one Jones Standard, one Pope brushing engine.

SCREENS—Two 12 plate, two 8 plate, open side Packer screens. Two 6 plate, one Moore & White auxiliary.

STUFF PUMPS—Deane triplex 9" x 8", Goulds triplex 8" x 10", Sandusky triplex 4" x 6", Moore & White duplex 8" x 12", One Beloit duplex 6" x 14". Two 6" Post.

REVOLVING SHEET CUTTERS—One 82" and 62" Clark, five 61" Hamblets, four 61" Finlays, one 50" Hamblet diagonal, one 42" Finlay.

REAM CUTTERS—One 48" Acme, one 45" Holyoke Seybold.

SUPER CALENDERS—One 52" Holyoke, one 45", one 42", one 36".

WET MACHINES—Four 72" Bagley & Sewall Hydraulic, one 48" Noble & Wood. One Manistee Hog Chipper. One Ryther & Pringle Shredder. We have a large number of pumps and over five hundred calender, press and couch rolls in stock.

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SHELDON SPRINGS VERMONT

White and Tinted Bristols—White Blanks—Index Bristol and Specialties in Card Boards.

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For Sale—Cylinder Paper Machine

Twelve molds 28" x 72". Five pair primary presses, three pair press rolls 14" in diameter. 74—36" x 68" dryers complete with frames and drives arranged triple-deck. Two stacks of calenders, 5 rolls each, 14" in diameter. Two single cutters, one 68" and the other 48" knife. Two small machines could be made up from this large one if desired. Price very reasonable for quick action. Immediate delivery.

For Sale—Calender Stack

One Farrel Seven-Roll. Bottom Roll 18" diameter. Second, third, fourth, fifth and sixth rolls 12" diameter. Seventh roll 14" in diameter. All rolls 62" face. Calender stack complete in every way. Provided with hydraulic lift complete with hand pump. Equipped with Warren Automatic Paper Feed Doctors, Pusey and Jones steam joints driven from right hand side. Stack strictly new, used only a few times. Price reasonable. \$4,500 f. o. b. Mass. New similar stack would cost at least two or three times this amount.

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Chicago Address—166 West Jackson St.

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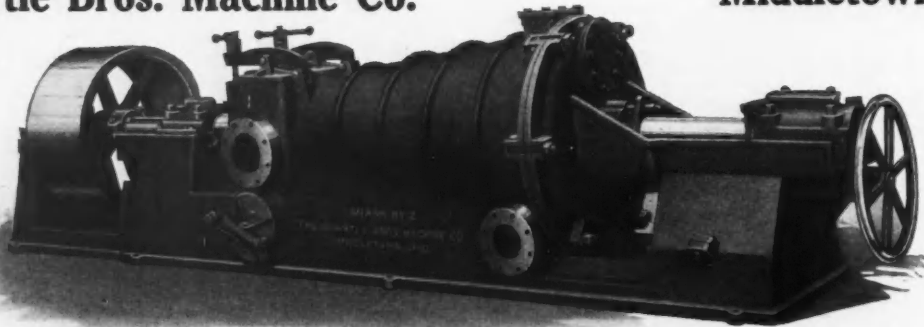
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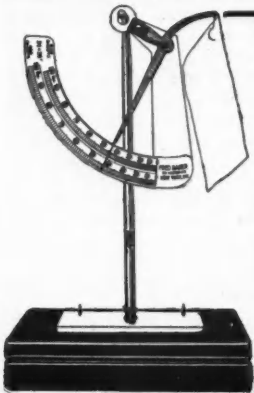
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FOR SALE

Paper Bag Manufacturing Plant

Acting under an order of the District Court of the United States for the Eastern District of Virginia, the undersigned will on

THURSDAY, OCTOBER 12th, 1922

Beginning at 10:30 O'clock, A. M.

offer for sale at public auction on the premises Nos. 1400-1408 West Marshall Street, Richmond, Virginia, the office furniture and fixtures, machinery, appliances, tools and supplies, formerly owned and used by the Eagle Paper Company in the conduct of the manufacture of paper bags on said premises.

The property offered for sale embraces office furniture and supplies and the following machinery: 4 Potdevin bag machines, 33 Phelps bag machines, 10 Remington square bag machines, all belt driven and fully equipped; 2 National Machine Company's 5 pitch screw machines; 2 Champion paper blower machines; 1 White washing machine; 1 Seybold cutting machine; 2 Re-winding machines; 10 bundling machines; 1 Cincinnati milling machine; 1 shaper machine; 1 drill press; 1 belt lacing machine; 1 Rotary printing press; 1 waste paper baling press; 1 stencil cutting machine; 3 freight trucks; 1 Ford truck; 173 square 4 roller trucks; cabinets for stencil plates, knives, labels, belts and tools; time recording clocks; steam, bundling, printers and lunch tables; portable scales; 1 set of blacksmith tools and large assortment of fine first-class tools.

A complete inventory of the property will be promptly forwarded by the undersigned on application therefor.

Responsible bidders may arrange satisfactory terms by communicating with the undersigned in advance of sale.

For a number of years the property now offered for sale was used on the said premises in the conduct of an extensive and profitable paper bag business. The buildings in which the property is located consist of two large concrete and brick four story buildings with 100,000 square feet of floor space. They were planned and constructed for a paper manufacturing plant and are equipped with boilers, engines, dynamo and a modern sprinkler system. A railroad siding, R. F. & P. Railroad, runs alongside of the buildings. All machinery and other equipment are believed to be in good condition and ready to be put into active operation. The owners of the lot and buildings are ready and willing to open negotiations with prospective purchasers for a lease thereon and communications to this end may be addressed to the undersigned.

The undersigned will give prospective purchasers an opportunity of seeing and examining said property before the day of sale.

ROBT. N. POLLARD, RECEIVER,
 TIMES-DISPATCH BUILDING
 RICHMOND, VIRGINIA.

MILLER & MILLER, Attorneys for plaintiff,
 Richmond, Va.

0-5

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ENTIRE PRODUCT FOR 1922 CONTRACTED
Mills at
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Various degrees of fineness and either fibrous or granular.
Made from first growth Spruce and Pine, by approved processes.
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NOW IS THE TIME TO BUY OUR RAW MATERIALS
Out of our forty different grades of paper stock you are assured a steady, reliable source
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Having specialized for 35 years in this one field you can depend upon a clean, well-packed,
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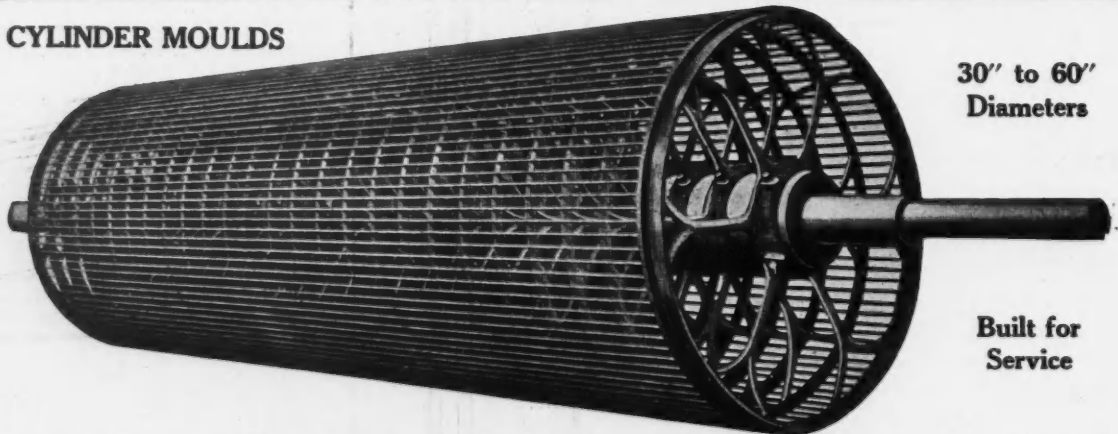
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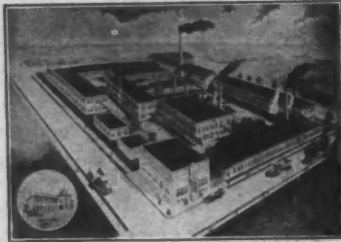


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