AGENT'S ANNUAL REPORTS AND

STATISTICS

YEAR 1902.

#2071

ANNUAL REPORTS AND STATISTICS

DEPARTMENT OPERATIONS

YEAR ENDING NOV. 30, 1 9 0 2

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THE CLEVELAND-CLIFFS IRON COMPANY

PIONEER FURNACE DEPARTMENT

ANNUAL REPORT

1 9 0 2

GLADSTONE, MICHIGAN

Mr. W. G. Mather, President,

Cleveland, Ohio.

Dear Sir:-

I beg to submit my report covering the operations of the Pioneer Furnace Department of the Cleveland-Cliffs Iron Company for the year ending November 30th, 1902.

FURNACE OPERATING

The furnace was in blast during the year 1902 about 362 days, a trifle over three days being lost due to time taken up cleaning stoves.

See next page

	1902	1901
Total Time Delayed	272.07 H.	178.47 H.
Avg. delay per day exc. of Cleaning Stoves	31.3 M.	25.9 M.
Avg. tons made per hour	4.54	4.44
Total number of casts for year	1438	1444
Avg. Tons per Cast	27.4	26.8
Avg. Tons per Day	109.1	106
Avg. Burden for Year (Ore)	2970	2971
Avg. Burden for Year (Limestone)	171	151
Avg. Burden for Year (Charcoal)	1200	1200
Total Avg. Burden for Year	4341	4322
Total number of Full Charges for Year	56289	55645
Total number of Blank Charges for Year	37	12
Total number of Charges for Year	56326	55657
Avg. number of Charges per Day	155.4	152.8
Avg. Heat of Stove No.1 for Year	1147	1195
Avg. Heat of Stove No.2 for Year	1147	1195
Avg. Steam Pressure for Year	90	88
Avg. Blast Pressure for Year	6⅜	6¼
Avg. Revolutions of Engines for Year	36	35

COMPARATIVE DETAILED STATEMENT OF DELAYS

	1902		1901	
	Hrs.	Min.	Hrs.	Min.
Casting	140	55	137	55
Repairing Engines		50		35
Cleaning and Putting in Blow Pipes	6	02	8	41
Repairing Hoist		30		10
Replacing Tuyeres	1	40	8	10
Changing Gas Valves	9	00	22	00
Cleaning and Repairing Stoves	83	15		00
Repairing Water Pipes		00	1	16
Cooler Plates	21	10		00
Bell and Hopper	8	45		00
TOTAL DELAYS	272	07	178	47

Outside of the time lost cleaning stoves and repairing bell and hopper the delays are purely nominal. The increase in percentage of limestone is due to the high alumina contained during the greater part of the year in the Lake and Salisbury ores. The output for the year was 38399 tons non-Bessemer pig iron, 926 Bessemer. The total for the year 39325 tons. The following is a detailed statement of percentages of different grades produced:

COMPARATIVE STATEMENT OF PIG IRON MADE

GRADES	1902 Tons	1902 Percent	1901 Tons	1901 Percent
A Scotch	832	2.1	497	1.3
B Scotch	469	1.1	646	1.6
C Scotch	584	1.4	900	2.4
No.1 Special	1765	4.4	1608	4.2
No.1 Foundry	3639	9.2	4963	12.7
No.2 Low	4467	11.2	4357	11.2
No. 2 High	4939	12.3	4262	11.0
No.3 Low	6500	16.0	5632	14.5
No.3 High	4019	10.2	2935	7.6
No.3 Malleable	1170	2.6	896	2.3
No.4 Low	2195	5.5	1923	5.0
No.4 High	2698	6.8	2475	6.4
No.5	2925	9.4	1510	3.9
No.6	2197	5.5	1841	4.7
Bessemer 3 High			19	.0
Bessemer 4 Low			45	.1
Bessemer Special	926	2.3	4301	11.1
Bessemer 3 Malleable			8	.0
Total	39348	100	38818	100

There was consumed during the year the following quantities of material:

Ore	Used Tons	Used Lbs.	Percentage	Overrun Tons	Overrun Lbs.	Shortage Tons	Shortage Lbs.
Lake	47626	1669	63.8				
Lake Bessemer	856	960	1.1			32	716
Salisbury	14782	1037	19.8				
Bedford	213	580	.3			5	1348
Foster	4797	254	6.4	254	2103		
Cliffs Shaft	5442	1384	7.3	79	172		
Pewabic	757	1390	1.0			25	1904
Tilden Silica	101	1660	.2			3	1372
Volunteer	68	1980	.1				
Total	74646	1954	100	334	35	67	860
Limestone	4306	1300					
Charcoal	3397612½ Bushels					5540	

The average ore yield for the year was 52.5. The bushels of coal per ton of pig iron 86.3. The pounds of limestone per ton of iron 245.

	Non-Bessemer Yield		Bessemer Yield	
	1902	1901	1902	1901
Ore	52.6	52.4	53.9	58.9
Coal	86.3	86.4	90.3	87.2
Flux	243	218	333	212

Leaving out the Bessemer yield, our ore mixture for the year 1902 was two-tenths of one percent higher than for 1901.

Our coal per ton of iron was one-tenth of a bushel lower.

Our limestone per ton of iron increased twenty-five pounds.

The Bessemer mixture shows a decrease in yield of five percent. Coal an increase of three and two-tenths bushels per ton. Limestone an increase of 121 pounds per ton.

3

There was consumed during the year 3,997,613 bushels of charcoal at an average cost delivered at the furnace of .0696. The cost of pig iron for the year was $14.00 as against $14.39 for the preceding year, being a decrease of .383 per ton over the year 1901. The following statement shows comparative costs:

	1902	1901	Increase	Decrease
General Expense	.576	.500	.076	
Maintenance	.225	.227		.002
Operating	1.124	1.124		
Stock	11.037	11.449		.412
Depreciation	.623	.666		.043
Loading	.072	.074		.002
Total	13.657	14.040	.076	.459
Cleveland Office Expense	.350	.350		
Total	14.007	14.390		.383

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The only item increasing is General Expense. This is due to increase in taxes.

There was shipped during the year 40,326 tons of pig iron. Of this amount 28,789 tons were forwarded by rail. 11,537 tons by vessel. The average cost of loading cars was .072,- a decrease of .002. The cost of loading vessels was 13.5 cents,- an increase of .001. This increase is due to repairs on pig iron dock. The excess of shipments over product was 1001 tons. We closed the season of navigation with 363 tons of pig iron on the dock as against 1341 tons in 1901,- a decrease of 978 tons in stock carried.

The following betterments were added to the furnace plant during the Fiscal year: 5 new tenement houses at a cost of $5010.64, one club house steam-heated and electric-lighted $3259.09.

At the close of the fiscal year the furnace had finished her 38th consecutive month on her second blast and as far as we can judge is in good condition. With the exception one heavy slip due to the use of all fine ore in making Bessemer iron we have had no mishaps worth mentioning. The furnace has not been run to her full capacity for the reason that we could not obtain an adequate supply of charcoal. Our stock house should be enlarged as we are experiencing the same old trouble with the setting in of severe weather.

CHARCOAL SUPPLY

The predictions regarding an insufficient supply of charcoal made in my last year's report have been fully verified, the pinch coming shortly after the close of the past fiscal year. The reports show that up to the end of the year our receipts were 67758 bushels less than for the preceding year. Had it not been for husbanding our resources at Felch and Ford River we would have been much worse off. The jobbers along the lines of both the Northwestern and Soo Railways are practically out of business, although we shall still be able to get a small amount

from these sources next year. The Felch Mountain location has been abandoned and turned over to the Land Department. At Ford River we expect to get a small amount of wood from farmers and, with the 200 odd cords we have left on Section 27, can probably keep this location in operation from three to four months. Although I recommended the erection of 24 80-cord kilns with a corresponding increase in the chemical plant, I was authorized to erect 20. These kilns are completed and we commenced firing them early in November. We derived no benefit from them during the past fiscal year and, owing to insufficient fan capacity and shortage of labor in the woods, we have been unable to get the maximum amount of work out of our old kilns and the new ones referred to.

FREIGHT ON CHARCOAL

	1902 Cost Per Bu.	1901 Cost Per Bu.
FORD RIVER		
Freight on C.& N.W. from location to Larch	.0060	.0064
Freight on Soo Line to Furnace	.0021	.0022
TOTAL	.0081	.0086
FELCH		
Freight on C.& N.W. from location to Larch	.0081	.0080
Freight on Soo Line to Furnace	.0023	.0024
TOTAL	.0104	.0104
OUTSIDE JOBBERS		
Freight on C.& N.W. various places to Larch	.0081	.0084
Freight from Larch various places to furnace	.0023	.0023
Total	.0104	.0107
Total freight on coal over C.& N.W.	.0104	.0107
Total freight on coal over Soo Line only	.0040	.0038
Total freight on coal from Jobbers (Note)	.0070	.0075
Total freight on coal from Elk Rapids	.0259	
(Note) Does not include coal from Elk Rapids		
Bus. Coal over C.& N.W. from Ford River	181400	78080
Bus. Coal over C.& N.W. from Felch	125980	35980
Bus. Coal over C. &.NW. from Various places	422570	462840
Bus. Coal over Ann Arbor via Manistique	94508	81304
Bus. Coal over Soo Line only	152930	386937
Total Bus. from outside sources	977388	1045141

We received from Elk Rapids, according to railroad weights furnished by the Elk Rapids Iron Company, 93592 bushels of coal. The furnace records show that we received 76140 bushels, or a loss of about 18 percent, making the net price of this coal at the furnace 11.2 cents per bushel.

PIONEER FURNACE KILNS

The results of the years operations at the Pioneer Furnace Kilns closely approximates those of the preceding year. There was an increase in the number of bushels obtained per kiln of 31 and a decrease in the coal per cord of seven-tenths of a bushel. This is largely due to the somewhat irregular working of the kilns, owing to insufficient draft due to connecting up with the new condensers and main made necessary by the additions to the No.1 Plant. During the month of November much of the smoke was allowed to escape in the air for the reason that our new fans are not yet installed and, owing to the shortage of coal, we fired up the additional kilns and only took the best smoke from both batteries. We also lost some time in moving our outfit from Parson to the Whitefish and during the last three months of the fiscal year just closed have been greatly hampered through an insufficient supply of labor, making it impossible to get in a sufficient amount of wood to work our kilns to their full capacity. This shortage of labor still exists.

COMPARATIVE STATEMENT OF KILN OPERATIONS

Pioneer Furnace Kilns	1902	1901
Number of kilns filled during year	767	770
Number of kilns emptied during year	758	774
Cords wood put into kilns during year	41839	39803.04
Cords wood in Kilns Dec. 1st.	2670	3214
Total Cords	44509	43017.04
Cords Wood carbonized during year	41682	42312
Balance cords in kilns	2827	705.04
Inventory Nov. 30th (cords)	3850	2670
Over-run (cords)	1023	1964.28
Total bushels coal made during year	1802890	1894860
Average bushels coal per kiln	2378 —	2347
Average bushels coal per cord	44.6	45.3
Average time turning kilns (days)	23.7	23.5
Average brands per kiln	5.2	5.3
Average cords per kiln	53.9	53.4
Total	59.1	58.7
Average number kilns turned per month	63.1	64.5
Number of kilns in battery to Oct. 1st	50	50
Number of kilns in battery to Dec. 1st	70 —	50

Note:
Did not get any benefit from new kilns in year 1902

FORD RIVER LOCATION

This location was operated during the entire fiscal year. We had held back this resource for emergencies. The location turned out a total of 181400 bushels of coal. The yield per cord was 41.4 bushels. We expect to obtain from farmers tributary to the kilns about 1000 cords of wood. This in addition to the 200 cords remaining on Section 27 will last us from three to four months. After this we expect to turn the location over to the land department.

COMPARATIVE STATEMENT OF KILN OPERATIONS

Ford River Kilns	1902	1901
Number Kilns filled during year	101	43
Number Kilns emptied during year	101	43
Cords wood put into kilns during year	4517.24	1978
Cords wood carbonized in kilns	4381.24	1864
Total bushels coal made	181400	78080
Average bushels coal per kiln	1803	1812
Average bushels coal per cord	41.4	41.9
Average cords per kiln	43.2	43.1
Average brands per kiln	2.8	2.9
Total cords	46	46
Average days turning kilns	26.8	25.7
Number of kilns in battery	8	8

Note: Operated during the entire year.

FELCH MOUNTAIN LOCATION

This located was operated on wood obtained from farmers from the first of the past fiscal year up to November 1st. The resources of the location are exhausted and it has been turned over to the Land Department.

COMPARATIVE STATEMENT OF KILN OPERATIONS

Felch Mountain	1902	1901
Number kilns filled during year	68	19
Number kilns emptied during year	63	19
Cords wood put in kilns during year	2947.20	893⅝
Cords wood carbonized during year	2947.20	835⅝
Total bushels coal made during year	125980	35980
Average bushels coal per kiln	1851	1893
Average bushels coal per cord	42.6	43.1
Average cords per kiln	42.8	43.1
Average brands per kiln	4.2	3.9
Total cords per kiln	47	47
Average days turning kilns	24.1	23.3
Number Kilns in Battery	6	8

Note:
Ceased operating and location abandoned October 30th, 1902.

PARSONS JOB

Refer to Plat "A"

It will be seen the changes in the condition of this tract of land have been less marked than in previous years. The area cut over on Section 28 amounts to less than half a section. We discontinued the use of the engine last Winter and hauled from the N.E.¼ of Section 3 and the East ½ of 33 to the main line of Russells Spur. In the Spring we projected our Portable Railway from the end of Russells Spur through the East ½ of Section 28, thence to the N.W. corner of the section and then Easterly across the North row of forties of this section. This was made necessary by a high line of hills which rendered it impossible for us to do the work by wagon-haul. We finished up our work the last week of August. We had shipped up to our choppers as close as possible without sending in green wood. We had taken up and shipped to the Whitefish the bulk of our ties and track and transferred our engine and teams to that location. During the latter part of December, owing to the failure of

Caron & Rough to properly carry out their contract, we were compelled to take over this work. We purchased eight teams and six from Caron & Rough and carried on the work by company account from April 1st. There still remains about 2¾ sections of the Parsons Tract to operate. It will be ourpolocy to chop wood ahead and allow it to dry, then withdraw the steel in Russells Spur and extend it in a Northeasterly direction, making the timber on Section 2, 3 and 10 accessible. There has been considerable inquiry by propective purchasers of land on this tract, still we have optioned but little during the past year. Indications, however, seem to point to the fact that we will be able to make a better report for the year to come.

DETAILED STATEMENT OF PARSONS OPERATING

MONTHS	Number of Men		Cords Cut		Cords Shipped	
	1902	1901	1902	1901	1902	1901
December	24	79	1357.08	2860	2580.08	3627
January	26	82	1115	3449	2508.24	3186
February	28	91	1026	3366	2661.08	2567
March	35	106	1345.08	2074	3735.08	2684
April	37	110	1466.28	5680	4648.24	8435
May	37	86	1302.12	3210	4437.08	5150
June	29	59	858.04	2667	4043.08	4542
July	22	55	348.04	1762	4338.08	4215
August	19	38	883.24	1702	3203.08	4114
September	23	29	1865.04	1311		3996
October	32	24	2404.08	1069		3855
November	43	23	2207.24	683		4803
Shortage	-	-	-	-	188.24	
Total			16179.28	29839	32345	46193

On Hand December 1st, 1901	25113	Cords
On Hand December 1st, 1902	8947⅞	"
Reduction during year	16165⅛	"

The price for chopping was 80 cents per cord throughout the entire year. Referring to the foregoing table, we note the average number of men employed per month was 29.6 as against 63½ for the preceding year. The average cords cut per man per month was 45.6 as against 46.9 for the preceding year. We tried very hard to keep the average choppers

at 60 but, owing to the scarcity of labor, have been unable to reach this figure. Since the 1st of December our price for chopping has been increased to 90 cents, but the number of men have not materially increased.

Timber Sales:

During the year we sold 140,366 feet of elm and 460,031 feet of basswood. These logs were sold at a price of $8.00 per thousand delivered alongside of Russels Spur and cost us, including equipment, chains, etc., which we immediately sunk off, $4.92 per thousand, leaving a net profit on the elm and basswood of $3.08 per thousand. In addition to the above we sold 3389 feet of scattering pine for $11.00 per thousand alongside of the railroad. The cost for operating was the same as for the elm and basswood, leaving us a net profit of $6.08 per thousand. We also logged some hemlock logs and bark, but as this operation is not yet closed it will come under the head of next year's report. We have gone far enough however to state that we will make a very handsome profit in the operation.

Parsons Land Sales:

During the year we have placed under option two forties in Section 9 and two in Section 18 as shown by red crosses on plat "A"

PARSONS PORTABLE RAILWAY

Refer to Plat "A":

There was no Portable Railway constructed at Parsons during the year. All of the ties and rails had been removed except that shown by the red lines on the East ½ of Section 28, which has since been removed and shipped to the Whitefish. The average cost of operating the road, including the taking up of the track, for the year was 16.1 cents per cord as against 19.4 cents for the preceding year, being a decrease of 3.3 cents per cord. The details of cost are as follows: Tracks 7.2 cents, Operating engine and crew 6.9 cents, Depreciation 2 cents. This shows a reduction in tracks and operating which is due entirely to the larger

cordage handled and is .9 cents less per cord than our original estimate which was 15 cents not including depreciation. I feel very much encouraged at this showing as I believe that we can still further reduce this cost even up the Whitefish, where we will be enabled to handle a larger cordage? We have also been enabled to collect considerable data relative to the distance we will be warranted in constructing these spurs, their distance apart and the amount of timber which must be available to admit of economical working.

Cords timber cut per acre total
Compared with original estimate

Parsons Teaming:

The average cost of teams for the year was 57 cents per cord. This included quite a heavy sinking fund and the expense of moving the outfit from Parsons to Mathews.

MATHEWS JOB

Refer to Plat "C":

An examination of Plat "C" will show that we have made considerable inroad on the territory where a year ago we had standing timber. We have cut during the year the entire S.E.¼ of Section 23 and finished up the East ½ of the S.W. ¼ of the same section. We have also cut about eleven forties of Sutherland-Innes stumpage on Section 21. In addition to this we have nearly completed the cutting of the S.W.¼ of Sec. 15, which stands diagonally to Section 21. Our next chopping will be done on Section 28 through which our Portabe Railway extends. As indicated by the topography this country is much broken by swamps and the cost of operating and building spurs is thereby necessarily largely increased to say nothing of the difficulty of securing the increased quantity of wood which our present plant at Gladstone demands. The great problem of the year has been to secure and retain choppers enough to keep ahead of our shipping and make our investment in railroad and equipment of permanent use until the Mathews tract had been operated. The outlook is very discouraging. So far it has been absolutely impossible to obtain

anything like an adequate force of choppers and teamsters. In spite of the increase in wages we are still short of both classes of labor, which has necessarily run up our cost of teaming owing to the expense of feeding and caring for teams not working, to say nothing of a short supply of wood for the furnace. While the timber is fair and the camp location a good one, it is hard to induce men to go there and keep them after we have once secured them. The two greatest difficulties which confront us are First: the large number of small jobbers operating for outside companies and in cedar who, by misrepresentations and all sorts of promises, induce our men to leave us and go with them; Second: the presence of the saloons which are run absolutely without restraint. The bulk of the wages of our men are spent before they are earned. The industrious men seem loath to go there for this reason. We are about establishing a camp on Sutherland-Innes stumpage about six miles North of Trenary on the Rapid River Branch. Owing to its isolation we hope to induce some men to locate there. We are short for the Gladstone furnace about 90 men and it may be possible that if all else fails we will be compelled to raise the price of chopping to $1.00. We have organized a regular employment agency and have sent Henry Hillman to the principal Finn centers and are making every effort to direct men to our locations.

Referring to Plat "C": The red line shows the course of Mathews Spur and our Portable System, joining it at a point on the South line of Section 29. You will note that this Portable System connects with the Buckeye Spur No.2 and enables us to bring out the wood from the Sutherland Innes stumpage on the same rate as fixed by the Soo Line for wood from the Mathews Tract. We estimate that the wood to be brought out this way w will amount to about 3000 cars, which at a saving of $1.00 per car will be considerable. We have also made an arrangement with the Buckeye people by thwich they will pay one-half the construction of the Mathews Spur and Portable System. This will make our railroad show up well.

DETAILED STATEMENT MATHEWS OPERATING

MONTHS	Number of Men 1902	Number of Men 1901	Cords Cut 1902	Cords Cut 1901	Cords Shipped 1902	Cords Shipped 1901
December	35	73	844	2661	1668	1627
January	27	89	721.26	2741	2274.24	1642
February	27	84	994.24	2252	1798.16	1434
March	45	71	1029.16	1322	645	1364
April	66	96	3684.20	4940		316
May	72	84	3784.20	3735		
June	68	61	3269.16	2053		
July	66	45	3688.08	1492		
August	71	65	3086.12	2638	694	
September	72	64	2030.04	2589	4199.08	
October	56	54	1607.12	2198	5771.08	
November	47	44	2426.08	1193	4566.24	
Total			27167	29819	21617.16	6385

On Hand December 1st, 1901 41698⅝ Cords

On Hand December 1st, 1902 47248⅛ "

Increase during year 5549½ "

Referring to the foregoing table you will note that the average number of men working per month is 54.3, the average cords per man 41.6. At the present time the number of choppers reported at Mathews is but 30, or more than 24 less than the average for the year. I have already touched on this shortage of men and explained the steaps we have taken to increase our forces.

Mathews Portable Railway:

By referring to Plat "C" you will note that the general plan of railway extension up the Whitefish is practically the same as outlined under the head of general plan wood operations in last year's report. Owing to the topography and the long distance to be operated it was deemed best to construct about a mile and half of spur which could be operated by the Soo Railway and save work for our engines. This has been done and the road carried on from that point in the shape of our Portable Railway. This work was not completed at the end of our fiscal year and I therefore do not submit figures of cost. This feature will be treated fully in my next year's report where it properly belongs. For

your information would state that the main spur, although a very heavy fill for the same was required, compares favorably with similar work done at Parsons. We have not operated our Portable System long enough to beduce accurate costs for a long period of time but to date the figures show about 17 cents per cord. I believe that we will make a showing in the future which will compare favorably with the work done on the Parsons Tract.

Mathews Teaming:

The cost for the year for Mathews teaming has averaged 74 cents per cord. This high cost is chiefly due to the inability to work our teams to their full capacity. As the number of teamsters have increased we have gradually brought down the cost and are to-day making a considerably better showing. Owing to the character of the country we must however expect a considerably higher cost on the Whitefish than on the Parsons. Mr. Redfern estimated this difference to be at least 20 cents per cord. This estimate has further been borne out by bids received from men whom we tried to have take the contract. We were also greatly hampered by rain and muddy roads during the month of October and early in November.

GENERAL PLAN OF WOOD OPERATIONS

We closed the fiscal year with a total of 56,196 cords of wood at our two locations as follows:

Parsons - - - - - - -	8,948 cords
Mathews - - - - - - -	47,248 "
Total - - - - - -	56,196 cords

being a decrease over the preceding year of 11,073 cords

At our present rate of consumption this is about nine month's supply. If conditions do not improve at the rate we are now cutting this will keep the Gladstone furnace going for about 21 months. The labor conditions are therefore serious. On the other hand we have a large surplus at the

Marquette furnace. If the labor situation does not improve we could divert some of this wood to Gladstone without seriously affecting Marquette,- in fact: we are already taking some wood from Chatham and Slap Neck to the Gladstone kilns. It is a question in my mind whether it would not be better for us to pay the additional freight of 40 cents asked by the Munising Railway rather than increase our price in chopping. The general railroad scheme for the coming year will be about the same as for the year just ended, and outside of the strained labor conditions referred to there will be no extraordinary difficulties to overcome.

MUNISING JOB EAST

Refer to Plat "D":

You will note that we have cut over a large territory during the year just ended. The character of the timber was very uniform, the land being dry and sandy. We should consider ourselves exceptionally fortunate in not having suffered from fire losses with the large stock of wood we have carried through two Summers at this camp. In preparation for the starting of the Marquette furnace we have done a good deal of railroad building at this location to put us in shape for the Spring work. The red line on Plat "D" shows the course of Coalwood Spur No.1 and the passing track of 1200 feet at the location. It was thought best to make the grade good enough for the engines of the Munising Ry. rather than operate our own engines until the time comes when we will be obliged to do so. Owing to the dry condition of the bottom this job will naturally become our principal resource for wood during the Spring and Summer months. It will be necessary for us in the Summer of 1903 to build a spur extending from the main line of the Munising Ry. at a point near the South Shore Junction running in an easterly direction for taking out the wood from the valley which our present tracks cannot reach. We have been chopping at this location about two years and our books call for a balance of 84,796 cords.

DETAILED OPERATING STATEMENT MUNISING JOB EAST

Month	Number of Men 1902		Number of Men 1901	Cords Cut 1902	Cords Cut 1901
December	124			7090.28	
January	132			6088.20	
February	99		11	5287.08	186
March	90	Mch&Apl	40	2607.16	2442
April	82			8174.20	
May	82		42	3981.12	2263
June	54		53	3310.12	2442
July	50		67	3405	2776
August	50		62	4301.24	3854
September	50		85	3965.24	4596
October	48		94	2983.16	6155
November	49		110	3433.16	5449
Total				54630.04	30166

On Hand December 1st, 1901 30166 Cords

On Hand December 1st, 1902 84796 "

Increase during year 54630

Referring to the foregoing statement you will note that the average number of choppers reported was 76, the average cords per man 60. This statement is misleading. During the Summer a considerable number of men hung around the camp but would not take strips. These men would from time to time work with regular choppers and sell their wood to them, chopping about enough wood to pay their board. I think that a fair average would be about a cord and a half as shown at the other locations.

MUNISING JOB WEST

Refer to Plat "B"

Reference to Plat "B" will show that during the past year we have cut over all of Section 36 except the 40 we do not own, and a trifle more than the Southwest quarter of section 24. The choppers would not stand the long walk and we therefore moved them onto Section 34. In preparing for the work of supplying the Marquette furnace with wood we built two short spurs which we call Rumley 1 and 2. One of these spurs will be extended in the Summer of 1903 in a Northeasterly direction to make accessible the wood which is chopped on Section 24. Itbecame necess ary this Fall to provide teams for the Marquette furnace in order

that they might be acclimated before commencing heavy work in the Spring. After getting competitive bids from a half-dozen of the largest dealers we found the best we could do was $425.00 per team. We sent a buyer into the field and, including his commission, Mr. Noble's expenses in going up to settle for the horses, etc., the average price per team was $387.60, being a saving of $37.40 per team or a total of $1346.40 on the 36 teams purchased.

DETAILED OPERATING STATEMENT MUNISING JOB WEST

1902.

Month	No. Men	Cords Cut
December	10	301.28
January	20	791.28
February	49	2082
March	69	2215.20
April	76	4922.20
May	69	3426.08
June	65	3094.04
July	70	3685.04
August	95	4810.08
September	96	4513.08
October	97	5971.16
November	115	5854.16
Total		41669

On Hand December 1st, 1902 41926

Note: 257 cords were cut in year 1901.

Referring to the foregoing report, we find that the average number of choppers was 69.3, the average cords cut per man per month 50. This large average was undoubtedly due to exceptionally good timber and a very hard-working set of men.

LOT AND LAND SALES

There was one lot sold in the city of Gladstone, namely 21, block 79, First Addition, to the Roman Catjolic Church for $10.00. This was practically a donation. Our revenue from lease-holders on Govt. Lot 3 decreased $70.00, being $273.00 as against $343.00 for the preceding year. This decrease was partly due to a small-pox epidemic and also to the fact that some of these holders bought lots in other localities. We have issued options on Parsons Tract for 160 acres of land.

and extended options or issued them to parties who took up defaulted options amounting to 320 acres. On the Mathews Tract we sold the N.E.¼ of N.E.¼ Sec. 6-43-21 for $200.00.

COMPARATIVE STATEMENT OF TAXES

	1902		1901		1902	
	Valuation	Taxes	Valuation	Taxes	Increase	Decrease
City of Gladstone:						
Real	16140.00	580.85	21940.00	577.50		
Personal	623.00	19.89	780.00	19.65		
Total	16763.00	600.74	22720.00	597.15	3.59	
Masonville:						
Furnace	245000.00	6540.14	245000.00	5027.48	1512.66	
Lands	25060.00	669.52	27860.00	572.15	97.37	
Total	270060.00	7209.66	272860.00	5599.63	1610.03	
Outside Kilns						
Ford River:						
Real	1600.00	75.26	1600.00	69.49	5.77	
Personal	3400.00	112.25	7140.00	208.87		96.62
Felch Mountain						
Real Only	1000.00	42.00	1000.00	41.83	.17	
Total	6000.00	229.51	9740.00	320.19	5.94	96.62
Limestone:						
Real Only	6620.00	315.45	5020.00	288.58	26.87	
Mathias:						
Real	15100.00	757.88	12650.00	702.27	55.61	
Personal	20800.00	1043.87	6400.00	354.11	689.76	
Total	35900.00	1801.75	19050.00	1056.38	745.37	
Garden:						
Real Only	1600.00	23.83	1600.00	20.24	3.59	
Harrison:						
Real Only	3460.00	83.39	3140.00	88.59		5.20
Inwood:						
Real	15298.00	399.67	15187.00	526.93		127.26
Personal	2400.00	62.79	11200.00	388.64		325.85
Total	17698.00	462.46	26387.00	915.57		453.11
GRAND TOTAL	358101.00	10726.79	360517.00	8886.33	1840.46	

Referring to the foregoing statement you will note that there has been a net increase in taxes amounting to $1840.46. Of this amount

$1610.03 is in Masonville Township. You are already familiar with the conditions existing in this township. This increase is simply due to increased expenditures in the Village of Rapid River and the gradual retiring of lumber interests, Our valuation having been the same in the preceding year. The next large increase is in Mathias Township. This is solely due to increased personal property in the shape of cord-wood. The real estate was also increased but this was done by the tax commission. The decreases are due to decrease in personal property and lower valuation on cut-over lands.

CHEMICAL PLANT NO. 1

Chemical Plant No.1 was operated 362 days during the preceding year. The time lost was due to stoppages made necessary by the additions to take care of the new kilns. For a detailed report of operations please refer to Laboratory Report accompanying. Owing to the starting of the new kilns the data for the month of November is not reliable and that month is cut out. We took care of the best smoke from both batteries, the green smoke being allowed to escape, hence we could not determine accurately the cordage. There has been a n increase in the cost of alcohol over the preceding year of 1.2 cents per gallon. The total gallons of alcohol produced during the year 1902 was 147,312, as against 143,213 the year 1901, being an increase of 4,099 gallons. The average yield of alcohol per cord of wood carbonized was 353 gallons as against 354 the preceding year, being a decrease of .01 of a gallon. The average gallons per day were 406.9 as against 392.4 gallons for the preceding year, being an increase of 14½ gallons per day. The improvements added to the plant are as follows: The old wooden primaries were replaced with continuous copper stills. The boilers were thoroughly overhauled, the flues being taken out and replaced. Owing to the interruptions due to the new construction work the operation of the plant has been irregular and the results not as unfform or as satisfactory as we may expect in the future.

ACETATE PLANT NO.1

Acetate Plant No.1 operated during the year 360 days. 5 days were lost tearing out the old plant and erecting a temporary one until the new and larger plant made necessary by the increase in the kiln capacity was completed. There was produced during the year 1,595,312 lbs. as against 1,718,670 lbs. for the preceding year, being a decrease of 123,358 lbs. This decrease is entirely due to our inability to take of the liquor at our temporary plant. The average per day for the year 1902 was 4431 lbs. as against 4586 for the preceding year, being a decrease of 155 lbs. per working day. The average cost for the year was 39.5 cents per 100 lbs. against 38.4 cents for the preceding year, being an increacse of 1.1 cents per 100 lbs. Owing to the reasons already given it is impossible to give an accurate yield per cord for the past year.

STATEMENT OF RETORT OPERATIONS

Pioneer Furnace:

	1902	1901
Number of Retorts filled	2781	2366
Number of Retorts emptied	2781	2366
Cords Wood put in Retorts during year	13151	11356
Less Brands not put back	214	440
Less Overrun	300	203
Cords, less overrun, carbonized during year	12637	10713
Total bushels coal made during year	583960	503955
Average bushels coal per retort	210	213
Average bushels coal per cord	46.2	47
Average time turning retorts	31 H 5 M	27 H 4 M
Average cords per retort	4.8	4.8
Average retorts turned during month	232	197
Number of retorts in battery	10	10
Pounds fuel per cord of wood	574	426

No.2 Chemical Plant:

The results obtained from No. 2 Chemical Plant have been more satisfactory than for the preceding year. We have succeeded in making a first-class alcohol which is almost as good as that obtained in the No.1 plant. We have not had a single complaint during the entire year as

to quality. Owing to the fairly tight condition of our retorts the yield has increased. The plant has been somewhat hampered by retorts off for repairs,- in fact during the greater part of the year we have averaged one retort idle for these reasons. There was produced during the year 104542 gallons of alcohol as against 85872 for the preceding year, being an increase of 18,670 gallons. The average yield per day was 286.4 gallons as against 266 for the preceding year, being an increase of 20.4 gallons per day. The average yield per cord of wood was 8.08 gallons as against 7.56 gallons the preceding year, being an increase of .52 gallons per cord. The cost for the year, including sinking fund, etc., was 41.1 cents as against 37½ cents for the preceding year, an increase of 3.6 cents. The items making up this increase are 1.9 cents for lime and chemicals made necessary by the more refractory liquor treated and 1.7 cents increased depreciation charges. I do not know that we can expect to do much better at this plant unless we can increase our output which is very doubtful owing to the heavy repairs needed on the retorts, and also to the fact that we find it impossible to run the retorts 24 hours and maintain them even with our improved setting. The plant was operated during the entire year.

Acetate Plant No.2

The plant wasoperated 360 days. The time lost was due to repairing retorts and cleaning condensers. There was produced during the year 1,689,311 pounds as against 1,301,613 pounds in the preceding year, being an increase for 1902 of 387,698 pounds. The cost for the year was 78.8 cents as against 82.3 cents for the preceding year, being a decrease of 3.5 cents per 100 pounds. The average per day was 4693 pounds as against 4190 for the preceding year, being an increase of 503 pounds per day. The yield of acetate per cord of wood carbonized was 132 pounds as against 115 pounds the preceding year, being an increase of 27 pounds.

Retort Plant:

The retort plant was operated during the entire year. Much time was however lost repairing the retorts and changing settings. During the year the settings of the retorts were radically modified. The fire-places were lowered and cast-iron baffle plates were put in to protect the bottoms from the direct action of the flame. It was found that the cast iron would not stand the high temperatures and to obviate this a lateral arch was put in extending the full length of the retort bottom. This has been a great benefit to us although it came too late as the bottoms were in very bad shape before the improved setting was developed. It will be necessary to renew all the bottoms except under No.2 Retort which was put in about a year and a half ago. These renewals will have to be made during the next three or four months. No.2, which was fitted with a new bottom, has stood up fairly well since the new setting was put in. Referring to the foregoig statement you will note that the output from the retorts increased over the preceding year 80,000 bushels. The cost of coal was 9.3 cents per bushel as against 8.9 cents the preceding year, being an increase of .004 cents per bushel. This is due to an increase in the amount set aside for depreciation amounting to .003 and to the increase in maintenance charges. It has been demonstrated that we cannot safely turn the retorts in 24 hours and I do not see much hope of decreasing the cost of coal from this source. I went into the question of retorts fuly in my last report and have no reason to change my opinion. We made a very wise decision in not installing them at Marquette.

GENERAL REMARKS

Gladstone Plant:

The operation of the plant for the preceding year has been satisfactory. The furnace, although completing the fourth month in her third year, is apparently in good condition and working well. Our chief drawback has been an insufficient coal supply which was predicted in

our last year's report. Steps have been taken to remedy this by the addition of twenty 80-cord kilns and our No.1 Chemical Plant has been enalrged and remodeled to take care of the increased kiln capacity. This work is about 95 percent completed and by the latter part of this month we will derive the benefits in the shape of an increased output of alcohol and acetate. We will also be enabled to handle our kilns in a more satisfactory manner and I hope increasettheir output. Our work at Gladstone has been most difficult as we have practically rebuilt the No.1 Chemical Plant and at the same time lost very little actual time. The next most important difficulty to contend with has been a universal shortage of labor in all departments. We have at times been very short-handed at the furnace but the principal pinch has come in the wood operations. While we have had plenty of wood and first-class equipment we have been unable to man it properly. The unprecedented activity in all lines of business and the starting up of three additional furnaces in this territory has caused the trouble. We are making every effort to overcome it and have an agent on the road now trying to procure men for us. Details relative to the additions at Gladstone will come under the head of the present year's report.

Marquette Furnace:

As stated in my last year's report, ground was broken for the construction of the Marquette furnace on the 31st day of May, 1901. The company account work pertaining to foundations, etc. was completed in a sh short time in the face of great difficulties. Work on the furnace proper was carried on by the contractors up to a few days before Christmas. By that time they were absolutely unable to hold their men owing to the severe weather prevailing and all work was stopped until about the middle of April. From that time on it has gone forward steadily. Everey contractor has been greatly behind in his work covering periods ranging from two months to one year. The American Bridge Company have been the most exasperating. They are not only more than one year behind

with their work, but they have kept back other contractors whose work was closely connected with theirs. At the present writing over 90 percent of the furnace proper is completed and we are using every effort to put it in blast on or before March 1st. We are held back now by the pipe-fitters and electric contractors. Owing to the delay in deciding the coal supply for Marquette we were most seriously hampered. This question was not decided until well along in April. As it necessitated and entirely different lay-out in the event of deciding on kilns or retorts we were unable to get up any plans until definite conclusions were arrived at. We commenced work on the kiln foundations at about the middle of May and owing to our holding off so long we did not receive brick deliveries until early in July. Sinee that time we have completed eighty 80-cord kilns with their wood trestles and approaches. Twenty of thesekilns are now filled with wood and we have commenced burning. The buildings for the chemical works are completed and the water mains laid for same. Part of the copper work is on the ground and we are pushing the work rapidly. I do not think we can start the Chemical Plant at Marquette earlier than the 1st of May even if we have no bad luck and further delays on the part of the contractors. Acting under your instructions, we will start up the furnace without waiting for the completion of the chemical plant. This will be quite a serious problem for the reason that the large kilns cannot be handled so rapidly without induced draft and, inasmuch as they are so close to the furnace, we will at times be greatly hampered in its operations through smoke from the kilns. We have already experienced trouble from this source in our stock house where men have been engaged in laying water mains, putting down tracks, etc. I however realize your anxiety to get iron from the new furnace and you can rest assured that I am straining every nerve to meet your wishes. It may interest you to know that since the 1st of July we have laid about five million red brick alone.

FINAL REMARKS

As soon as the present rush of construction work is over I would recommend that the stock house at the Gladstone furnace be increased and that we go into further economies in our steam consumption. I would recommend putting in a large triple pump at Gladstone or least compunding it; also the installation of a compound blowing engine. Gas engine?

Ore Mixture:

As stated under the General Furnace head, we have had more or less trouble during the entire year from high alumina in our Lake and Salisbury ore, The alumina in our slags rarely going before 16% and having been as high as 22 or 23. This with our comparatively low ore yield has increased our fuel consumption and percentage of limestone carried. It has also at times interfered with our output as the furnace has not been inclined to drive. This trouble has been more noticeable during the last six months of the year. The attention of the mine department has been called to this apparent change in the character ofthe ores and they are doing what they can to help us out. The high alumina seems to have been accounted for by considerable quantities of clay coming in the shape of a low grade ore.

Club House:

The club house, while completed during the past fiscal year, was not opened until early in December. So far it has more than met our expectations. There are from 25 to 40 men in the house every evening and it ia also used considerably during the day. The men are well-behaved and seem to thoroughly enjoy it. I hope that it is not a new broom

Telephones:

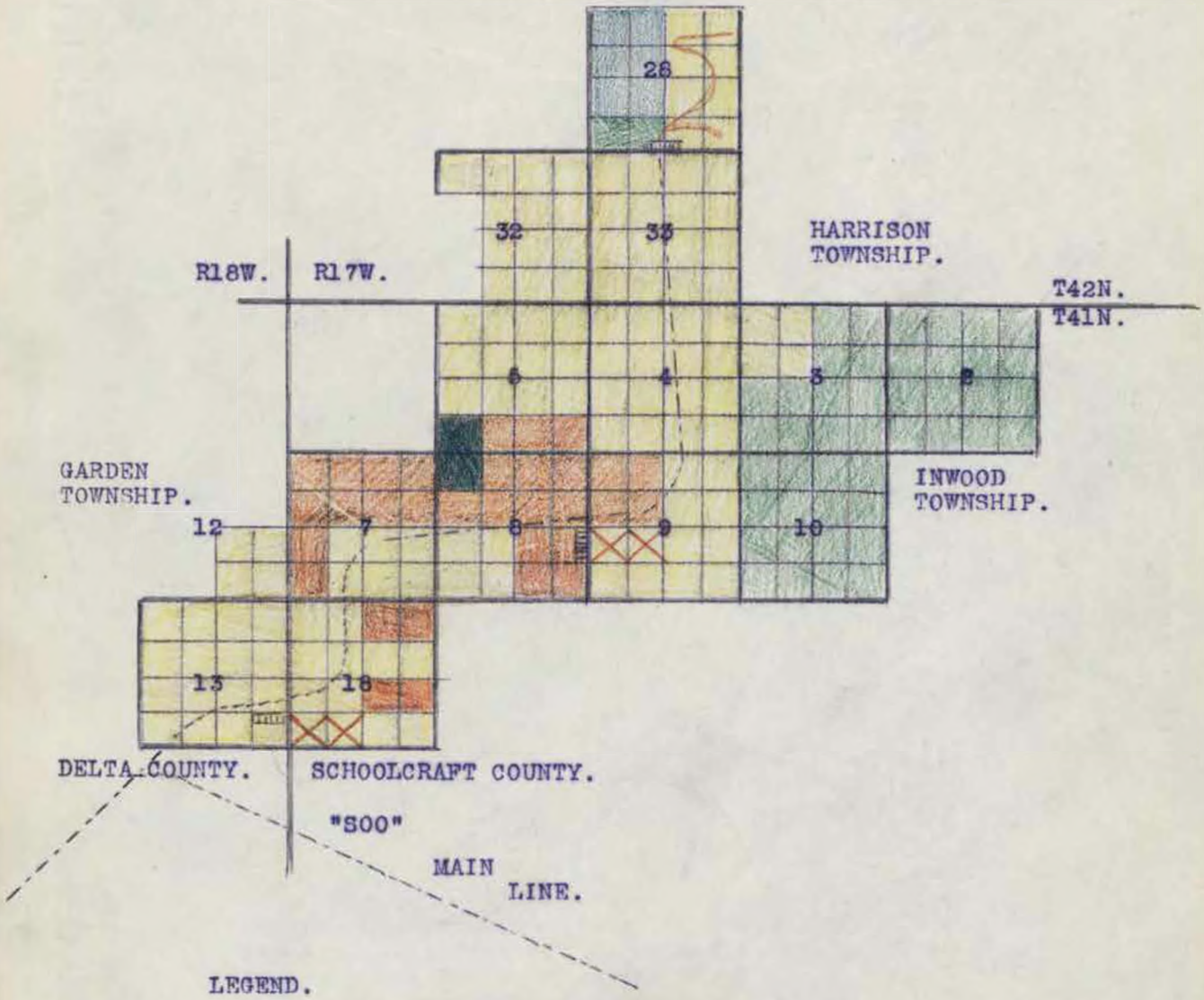
Owing to the large number of calls between Gladstone and Marquette I would strongly recommend that the company provide a telephone wire, taking in the wood camps, Marquette and the mines. Mr. Pennington of the Soo Road stated to me that we could have the use of their poles up the Rapid River Branch. Owing to the increasing importance of our wood

operations and the inaccessibility of our different camps a telephone would be of the greatest service to us in admitting of getting in close communication with our foremen. When the Marquette furnace is in operation it will be necessary for us to be in constant and quick communication with both plants and I do not know of any improvement of more importance and which would be of greater utility to us than a private telephone system of our own.

I believe the foregoing touches on all matters pertaining to my department and I trust the same will meet with your approval? Hoping this may be so, it is respectfully submitted.

Manager.

Gladstone, Mich., Jan. 14th, 1903.



LEGEND.

GREEN SHOWS STANDING TIMBER.

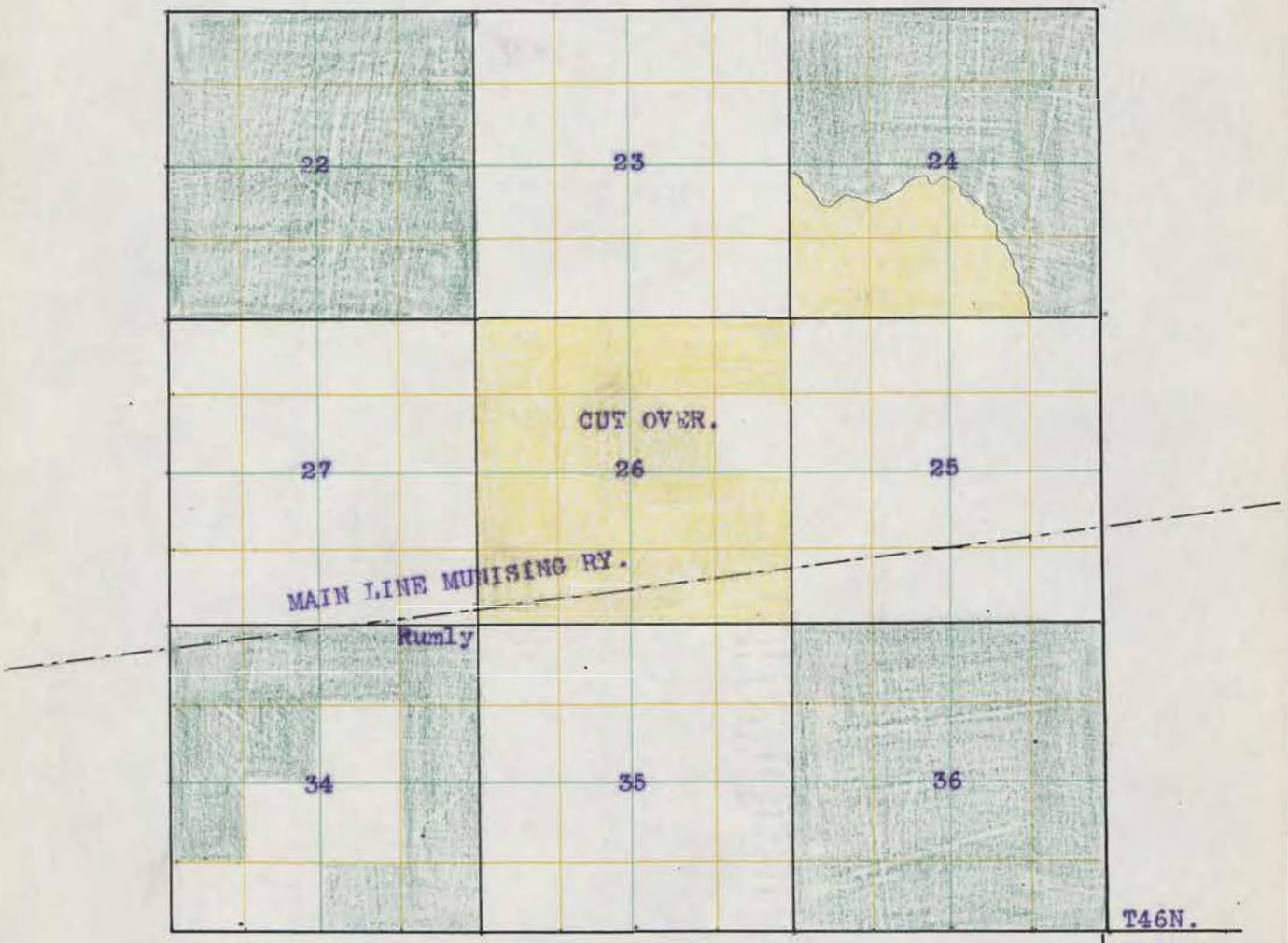
Y ELLOW SHOWS LANDS CUT AND HAULED.

RED SHOWS LANDS CUT HAULED AND SOLD.

BLUE SHOWS LANDS CUT BUT NOT HAULED.

Red crosses show options given in 1902.
Red Line forms probable Ry

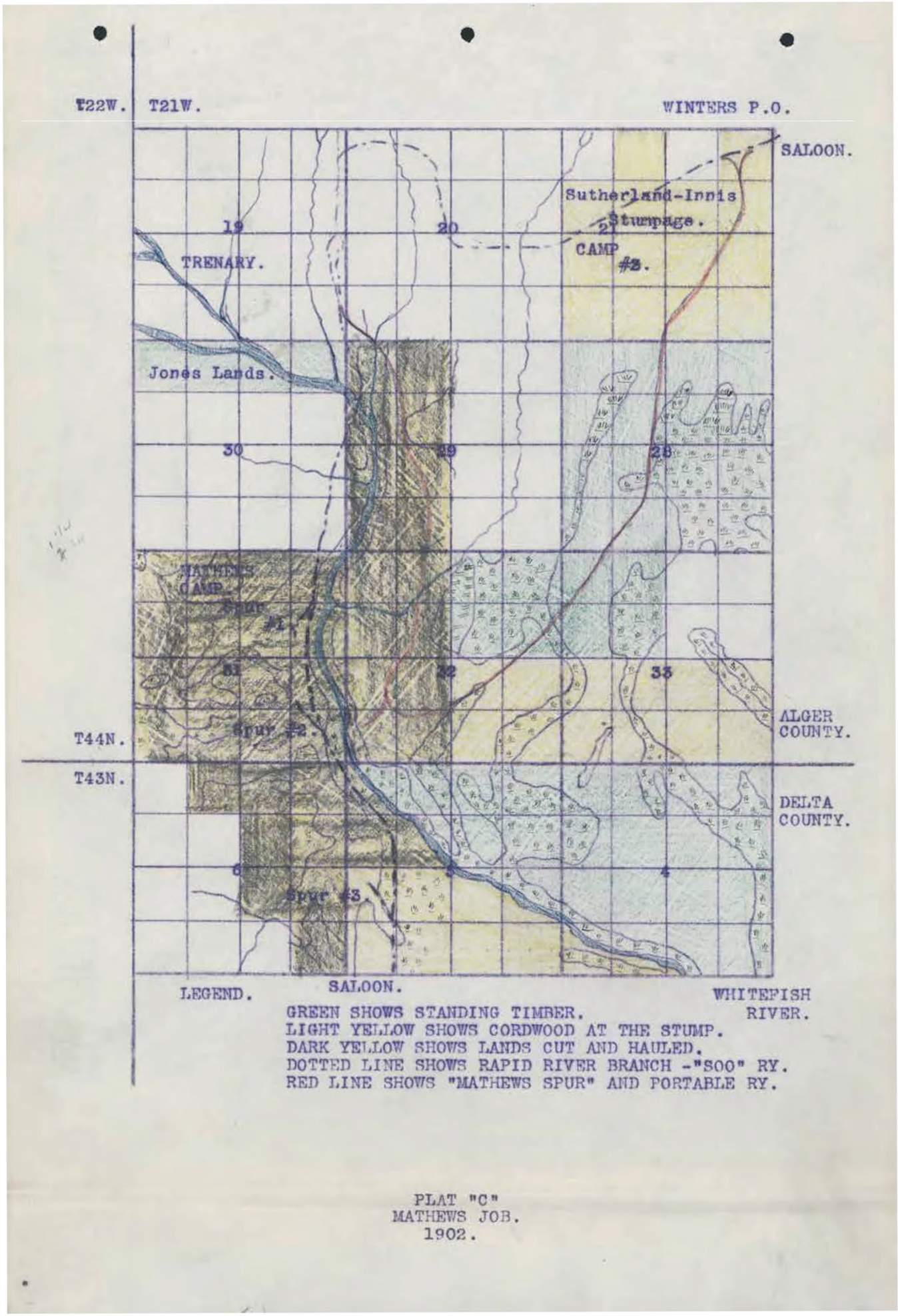
PLAT "A"
PARSONS TRACT.
1902.



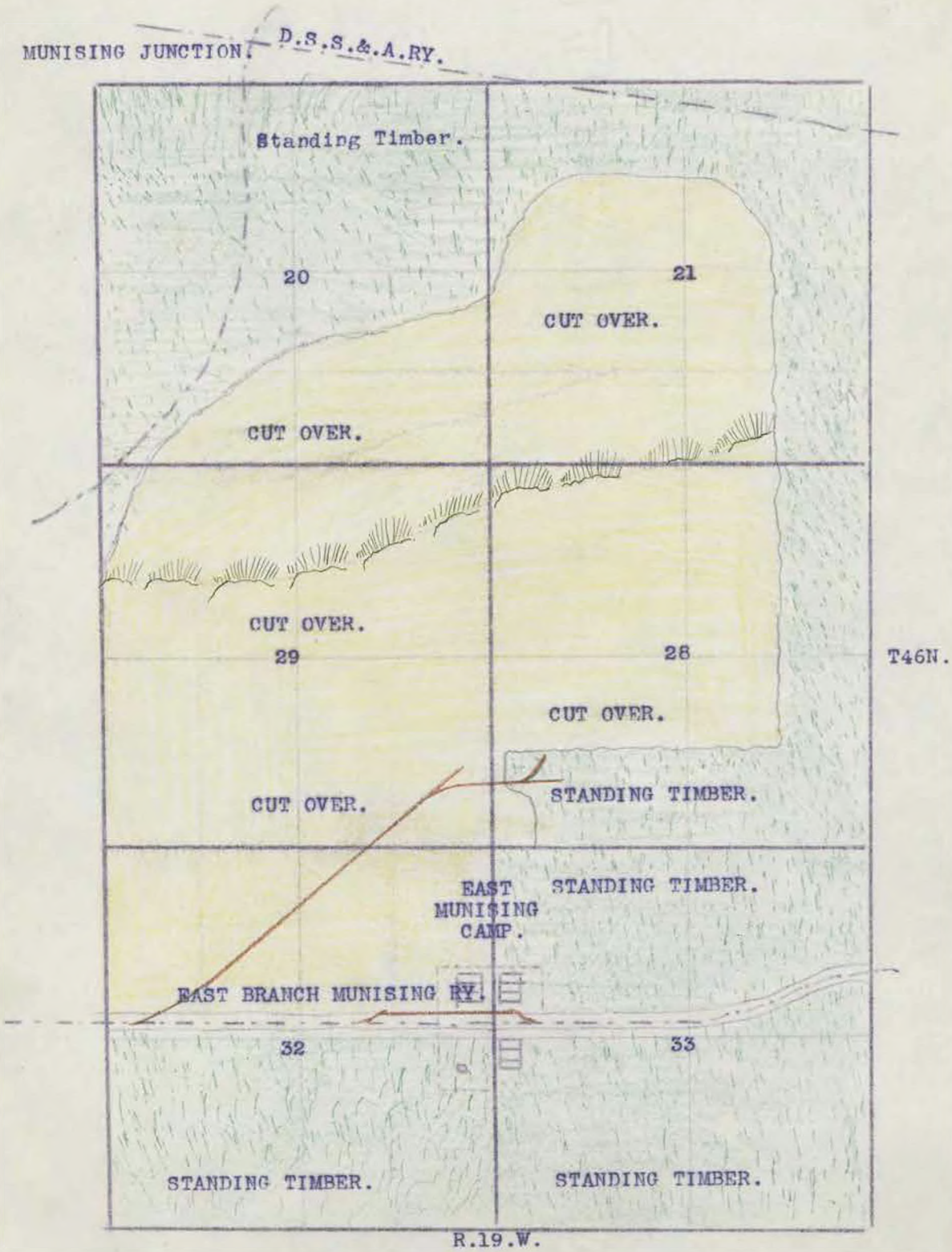
LEGEND.

GREEN SHOWS STANDING TIMBER-MUNISING LANDS.
RED SHOWS STANDING TIMBER -C.&.N.W.LANDS.
YELLOW SHOWS CORDWOOD AT THE STUMP.
BLUE SHOWS D.M.&.M.LANDS.

PLAT "B"
MUNISING CAMP-WEST.
1902.



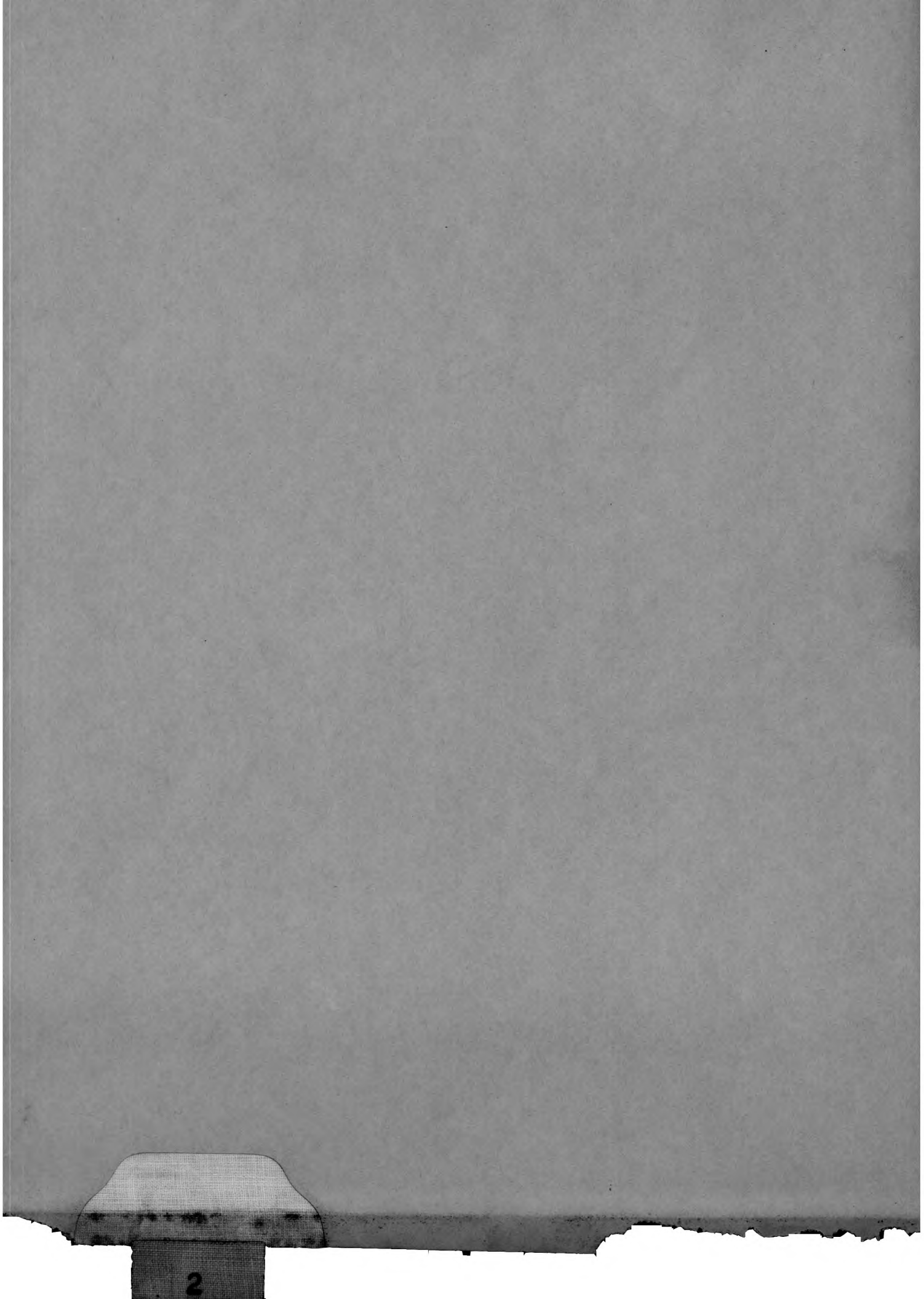
PLAT "C"
MATHEWS JOB.
1902.



PLAT "D"

MUNISING CAMP EAST.

1902.



INVENTORY

THE CLEVELAND-CLIFFS IRON COMPANY

PIONEER FURNACE

GLADSTONE MICHIGAN

1902

TRIAL BALANCE OF ACCOUNTS

Furnace Supplies	$11449.36	
Chemical "	716.99	
Mathews Barn"	450.85	
Portable Ry."	81.00	
Retort "	3027.95	
Laboratory "	112.53	
TOTAL SUPPLIES		$15838.68
Laboratory	139.49	
Office Furniture & Fixtures	257.70	
Machine Shop Machinery	1074.96	
Blacksmith Shop Machinery	181.67	
Carts, Wagons and Horses	777.28	
Charcoal Cars	3879.49	
Scales	668.54	
Ore Barrows	90.72	
Pig Iron Trucks	606.25	
Charcoal Buggies	302.35	
Charcoal Tram Cars	4.83	
Launch	184.75	
Locomotive	1522.83	
Pig Iron Loaders	92.09	
Scow	3.62	
Testing Machine	179.95	
Brown Pyrometer	24.80	
TOTAL FURNACE EQUIPMENT		9991.32
Mathews Wood Job Barn Equipment	11775.27	
Munising East Wood Job Barn Equipment	7337.80	
Munising West Wood Job Barn Equipment	7340.80	
TOTAL WOOD JOBS EQUIPMENT		26453.87
GRAND TOTAL SUPPLIES		$52283.87

I N D E X

SUPPLIES,- 1 to 21 Inclusive

Furnace Supplies	1 to 18 Inclusive
Chemical Supplies	19
Retort Supplies	19
Mathews Barn Supplies	19
Parsons Ry. Supplies	19
Laboratory Supplies	20 and 21

EQUIPMENT,- 22 to 38 Inclusive

Laboratory	22 and 23
Office Furniture & Fixtures	24
Machine Shop	25 to 28 Inclusive
Blacksmith Shop	29
Carts, Wagons and Horses	30
Charcoal Cars	31
Scales	32
Telephones	32
Ore Barrows	32
Pig Iron Trucks	32
Charcoal Buggies	33
Charcoal Tram Cars	33
Launch	33
Locomotive	33
Kiln Barrows	33
Pig Iron Loaders	34
Scow	34
Testing Machine	34
Brown Pyrometer	34
Mathews Wood Job	35 and 36
Munising East Wood Job	37
Munising West Wood Job	38

TOOLS IN GENERAL USE,- 39 to Inclusive

Blowing Engine	39
Dynamo	39
Crane Hoist Engine	39
Locomotive	39
Ore Crusher	39
Chemical Boiler House No. 1	39
Chemical Boiler House No.2	40
No.1 Chemical Plant Boilers	40
No.2 Chemical Plant Boilers	40
Furnace Boilers	40
Chemical Plant No.1 Fire Protection	40
Chemical Plant No.2 Fire Protection	40
Colliers Shanty	40
Acetate Plant No.1	40 and 41
Acetate Plant No.2	41
Chemical Plant No.1	41
Chemical Plant No.2	41 and 42
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Barn	43
Bottom Fillers & Coal Forkers	43
Casting House	43
Track Tools	43
Cinder Tools	43
Yard Tools	43

INDEX TO FURNACE SUPPLIES

Asbestos, Board	8
" Sheet	8
" Wick	8
" Cem. Felting	8
" Wool	8
" Fibre	8
Asphaltum	8
Axle Grease, Mica	8
Axe Helves	9
Axes	10
Breeches, Blow Pipe	2
Bosh Plates	2
Bell & Hopper	2
Brick	8
Brooms	8
Baskets, Coal	9
Baskets	10
Bckets for Crusher	9
Borax	9
Brushes, Whitewash	10
" Sand	10
" Scrub	10
" Horse	11
" Paint	11
Bell Cord	10
Brooms, Whisk	10
Brads	11
Butts	11
Blocks	13
Bolts, Various	13 & 14
Castings, Various	2 & 7
Concaves for Crusher	2
Cap for Crusher	2
Copper, Sheet	2
Condensers, Copper	2
Coal, Blacksmith	2
Cocks, Stop	7
Couplings, Hose	7
Couplers, Tower car	9
Candle Wick	8
Candles	8
Cup Grease, Arctic	8
Cable	8
Cable Sockets	9
Cable Clamps	15
Cement	9
Coal Forks	9
Carmovers, Sampson	9
Chalk	9
Chain, Brass	10
" Halter	10
Curry Combs	11
Cans, Paint	11
Cotters, Spring	15

INDEX TO FURNACE SUPPLIES,- CONTINUED

Doors, Gas Pit	1
" Cast	1
" Retort	2
Dust Ring for Crusher	2
Dies	9
Drifting Picks	9
Dust Pans	10
Dusters	10
Drills	16 & 17
Ells, Copper	2
Emery Paper	10
" Dust	11
Electrical Supplies	12 & 13
Fire Clay	9
Fork Handles	9
Flatters	9
File Cleaner	10
Files	12
Grate Bars	2
Grates	2
Grate Castings	2
Grease Cup Glasses	7
Grease Cups	7
Glass, Oil Pump	7
Glass	9
Gaskets	8 & 17
Glue	8
Gasoline	8
Graphite	8
Gauge Glasses	11
Gauge Glass Gaskets	11
Halters	7
Horse Hair	8
Hoes, Mortar	9
Hoe Handles	9
Harness Dressing	10
" Snaps	10
Headlight Glasses	10
Hose	10 & 17
Hose Couplings	11
" Rings	11
" Clamps	11
Hammer Handles	10
Hammers	10
Hinges	11
Hasps	11
Horse Shoes	15
Hay	17
Iron, Round	1
" Square	1
" Swedish	1
" Band	1
" Structural	1
" Woods Refined	1
" Galv. Corrugated	1

INDEX TO FURNACE SUPPLIES,- CONTINUED

Leather, Harness	8
Leathers, Governor	11
Link Belt	9
Lamp Glasses	10
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Lantern Globes	10
" Burners	11
Lanterns	17
Locks	11
Manganese Wheels	2
Metal Polish	8
Magnolia Metal	9
Mogul Metal	9
Milk Kettles	10
Nails, Copper	2
" Horseshoe	10
" Various	11
Needles, Sewing	11
Nuts	16
Oil Cups	7
Oil, lubricating	8
" Linseed	8
" Harness	10
Oilers, Spring	10
" Hand	10
Oats	17
Piston, Condenser Pump	1
" Feed Pump	1
Pump Springs, Brass	2
Pipe, Brass	2
" Iron	2 & 3
" Galvanized	3
" Fittings	3,4,5 & 6
Pipes, Hose	7
Pulleys, Window Cord	7
Pulleys	17
Packing	8
Paint	8
Pike Poles	9
Pick Handles	9
Pole Picks	9
Potassium Cyanide	9
Pails	10
Quartz	9
Rods, Brass	2
Rivets, Copper	2
Rivets	15 & 16
Rubber	8
Rakes	9
Rope	9
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Soda Ash	8
Salt	8
Shovels	9
Smoothon	9
Shears, Tin	9
Scales	9
Shovel Handles	9
Sledge Handles	9
Sidewalk Cleaners	9
Sprockets	9
Soda	9
Suplate Aluminum	9
Solder	9
Sledges	9
Sand Screens	9
Saws	9 & 10
Squares	9
Salammoniac	10
Slate Surfacer	10
Screens	10
Sprinkling Cans	10
Sand Paper	10
Screw Eyes	11
Screws	14 & 15
Storm Covers	17
Sand	17
Turnbuckles	2
Tubing, Copper	2
Tacks, Copper	2
Tubes, Copper	2
" Boiler	2
" Sterling	2
Tuyeres	2
Turpentine	8
Tin	9
Twine	10
Toe Calks	11
Taps	16
Trowels, Brick	17
Valves	7 & 8
" Rubber	8
" Leather	10

INDEX TO FURNACE SUPPLIES,- CONTINUED

Wagon Skeins	2	
Wire, Brass	2	& 11
" Copper	2	
" Piano	11	
Wheels, Tender	2	
"	9	& 10
Wheel, Borundum	9	
Wheelbarrows	10	
Waste	8	
White Lead	8	
Wooden Shoes	10	
Wrenches	10	
Window Cleaner	11	
Washers, Leather	13	
" Wrot	15	

FURNACE SUPPLIES

200#	¼ Round Iron	@	2.00	per C	$ 4.00
200#	¼ Square Iron	@	2.00	" "	4.00
88#	5/16 Round Iron	@	2.05	" "	1.80
140#	⅜ Round Iron	@	2.05	" "	2.87
500#	½ Round Iron	@	2.50	" "	12.50
300#	7/16 Round Iron	@	2.00	" "	6.00
1002#	⅝ Round Iron	@	2.40	" "	24.05
244#	¾ Round Iron	@	2.15	" "	5.25
143#	⅞ Round Iron	@	2.15	" "	3.07
216#	1" Round Iron	@	2.50	" "	5.40
3000#	1¼ Round Iron	@	1.90	" "	57.00
302#	1⅜ Round Iron	@	2.00	" "	6.04
905#	1½ Round Iron	@	1.95	" "	17.65
2552#	1¾ Round Iron	@	3.00	" "	76.56
162#	2" Square Swedish Iron	@	6.00	" "	9.72
50#	¼ x 1 Iron	@	2.25	" "	1.12
116#	¼ x 1½ "	@	2.20	" "	2.55
36#	¼ x 2 "	@	2.20	" "	.79
600#	⅜ x 1 "	@	1.95	" "	11.70
89#	⅜ x 2 "	@	2.05	" "	1.82
476#	½ x 1½ "	@	2.00	" "	9.52
2908#	⅝ x 2 "	@	2.00	" "	58.16
2264#	⅝ x 2½ "	@	2.00	" "	45.28
354#	⅜ x 2½ "	@	2.10	" "	7.43
1386#	½ x 3 "	@	1.95	" "	27.02
556#	½ x 4 "	@	2.25	" "	12.51
720#	¾ x 3 "	@	2.10	" "	15.12
528#	¾ x 4 "	@	2.15	" "	11.35
516#	¾ x 4½ "	@	2.15	" "	11.09
69#	1 x 3 "	@	2.25	" "	1.55
1664#	3" Band "	@	2.15	" "	35.78
150#	½ Square "	@	2.00	" "	3.00
128#	⅝ Square "	@	2.00	" "	2.56
145#	¾ " "	@	2.00	" "	2.90
1506#	1" " "	@	2.00	" "	30.12
1719#	1¼ " "	@	2.10	" "	36.10
613#	1½ " "	@	2.25	" "	13.80
2640#	2½ " "	@	2.00	" "	52.80
159#	2 x 4 "	@	2.25	" "	3.57
442#	⅛ Plate Steel	@	2.55	" "	11.27
4836#	3/16 Plate "	@	2.50	" "	120.90
840#	⅛ " "	@	2.25	" "	18.90
427#	¼ " "	@	2.00	" "	8.54
2120#	5/16 " "	@	2.00	" "	42.50
202#	Structural Iron	@	2.00	" "	4.04
25#	Woods Refined Iron	@	3.50	" "	.87
165#	6½ x 6½ Hammered Steel	@	5.10	" "	8.41
34#	⅝ Square Machine Steel	@	5.00	" "	1.70
31#	¼ to ⅝ Self-Hard. "	@	.50	" #	15.50
45#	¾ Oct. High Grade "	@	.16	" "	7.20
2301#	¼ to 1½ Oct. Tool "	@	.07	" "	161.07
111#	Black Diamond " "	@	.08	" "	8.88
6	Gas Pit Doors & Frames				35.85
170#	Fan Shafting	@	.04	" "	6.80
1	Condenser Pump Piston				4.10
2	Feed Pump Pistons	@	3.00	each	6.00
559#	Galv. Corrugated Iron	@	3.90	per C	21.80
					$1117.78

1449#	Brake Shoe Castings	@	2.25	per C	$ 32.60
376#	Blow Pipe Breeches	@	2.75	" "	10.33
160#	Cast Door and Frame	@	2.00	" "	3.20
1122#	5½ x 38 Grate Bars No.2 Boilers	@	3.00	" "	33.66
3808#	5¾ x 24 Grate Bars Retorts	@	3.00	" "	114.24
166#	Dump Grates No.3 Loco.	@	2.00	" "	3.32
1468#	Loco. Grate Castings	@	2.00	" "	29.36
212#	Loco. Rub. Iron	@	2.00	" "	4.24
1350#	Draw Head Castings	@	2.00	" "	27.00
100#	Ring Castings	@	1.95	" "	1.95
120#	Castings	@	1.95	" "	2.34
157#	Managanese Wheels	@	9.00	" "	14.13
12	Concaves for Crusher				80.00
1	Cap for Crusher				2.50
1	Dust Ring for Crusher				2.76
4	Wagon Skeins	@	2.15	each	8.60
2	Wagon Skeins	@	1.50	"	3.00
5	1¼" Turnbuckles	@	.62		3.10
21	⅝" "	@	.25		5.25
51#	Brass Castings (Blow Eng.)	@	.25		12.75
61#	Brass Rod	@	.17		10.37
79#	Brass Rod	@	.19		15.01
64#	Brass Spring Wire	@	.21		13.44
103	Brass Pump Springs	@	.10		10.30
17#	⅛" Brass Pipe	@	.42		7.14
25#	⅜" Brass Pipe	@	.35		8.75
63#	¾" Brass Pipe	@	.25		15.75
20#	1" Brass Pipe	@	.25		5.00
203#	1¼" Brass Pipe	@	.25		50.75
48#	2" Brass Pipe	@	.25		12.00
213#	2½" Brass Pipe	@	.20		42.60
987#	3" Brass Pipe	@	.20		197.40
560#	2½" Copper Tubing	@	.23		128.80
742#	Sheet Copper	@	.20		148.40
77#	Copper Nails	@	.18¼		14.05
20#	Copper Tacks	@	.20¼		4.05
86#	Copper Rivets	@	.32		27.52
767#	(50) Copper Tubes 2 x 8	@	.23	—	176.41
25#	10" Copper Ells	@	.35		8.75
51#	Copper Wire	@	.20		10.20
1381#	Bronze Bosh Plates	@	.25		345.25
729#	Tuyeres	@	.22		160.38
1	Copper Condenser				495.00
1	Bell and Hopper				198.00
1	Iron Still				145.00
1	Retort Door				64.50
25	Tons Blacksmith Coal	@	4.25		106.25
3	Pairs Tender Wheels	@	24.00	each	72.00
199	ft. 4" Boiler Tubes	@	.27½		54.72
411	ft. Sterling Tubes 4"	@	.30		123.30
141	No.1 to No.11 3¼ Sterling Tubes	@	.21		29.61
42	ft⅛ ¼" Pipe	@	.03		1.26
175	ft. ⅜" Pipe	@	.03		5.25
200	ft. ½" Pipe	@	.03½		7.00
246	ft. ¾" Pipe	@	.04		9.84
160	ft. 1" Pipe	@	.05½		8.80
198	ft. 1¼" Pipe	@	.08¼		16.33
200	ft. 1½" Pipe	@	.09		18.00
83	ft. 2½" Pipe	@	.20¼		16.81
					$3178.32

72	ft. 3" Pipe	@	.30	$ 21.60
49	" 4" "	@	.40	19.60
52	" 5" "	@	.53	27.56
24	" 6" "	@	.58	13.92
14½	" 6" Galv. Pipe	@	.85	12.11
88	" 2" Gal.Dbl.Ex.Hy.Pipe	@	.70	61.60
131	" 2" Ex. Hy. Pipe	@	.27	35.37
22	" 2½" Dbl. Ex. Hy. Pipe	@	.93	20.46
39	" 3" Ex. Hy. Pipe	@	.54½	21.25
150	1" Returns	@	.15	22.50
56	¼" Ells	@	.02	1.12
21	⅜" "	@	.02½	.52
11	½" "	@	.03	.33
28	¾" "	@	.03	.84
18	1" "	@	.05	.90
13	1¼" "	@	.07	.91
12	1¼" St. Ell	@	.07	.84
10	1½" Ells	@	.07½	.75
24	2" "	@	.10	2.40
6	2½" "	@	.15	.90
5	3" "	@	.26¼	1.32
9	4" "	@	.42	3.78
3	3½" "	@	.31½	.95
2	5" "	@	.60	1.20
4	6" "	@	.85	3.40
1	10" "			5.00
12	⅜ 45 Ells	@	.02	.24
15	½ " "	@	.02	.30
2	2½ Flanged Ells	@	1.80	3.60
2	3" " "	@	3.00	6.00
6	¾ 45 Ells	@	.03	.18
15	1" " "	@	.04	.60
19	1¼ " "	@	.05	.95
8	1½ " "	@	.08	.64
1	2" " "			.12
10	2½ " "	@	.20	2.00
2	3" " "	@	.29	.58
2	3½ " "	@	.38	.76
6	4" " "	@	.50	3.00
2	5" " "	@	.70	1.40
2	6" " "	@	1.00	2.00
1	8" " "	@	2.20	2.20
7	⅛" Tees	@	.02	.14
8	¾" "	@	.02½	.20
9	⅜" "	@	.03	.27
15	½" "	@	.03¼	.49
20	¾ "	@	.04	.80
18	1" "	@	.05	.90
21	1¼ "	@	.08	1.68
17	1½ "	@	.11	1.87
10	2½ "	@	.28	2.80
12	3" "	@	.40	4.80
8	4" "	@	.55	4.40
2	5" "	@	.90	1.80
3	6" "	@	1.15	3.45
1	6x5x4 Reduced Tee			.15
1	5x4x2½ " "	@	.90	.90
1	4 x 1 " "			.50
1	4x3x1¼ " "			.50
2	4 x 1¼ " "	@	.50	1.00
2	3 x 3 " "	@	.35	.70
11	1¼ x ½ " "	@	.08	.88
				$ 333.93

13	1" Crosses	@	.20	$ 2.60
11	1¼ "	@	.25	2.75
2	2" "	@	.30	.60
5	3½ "	@	.95	4.75
2	4" "	@	.95	1.90
5	¼" Unions	@	.04	.20
7	⅜ "	@	.05	.35
5	½ "	@	.05½	.27
9	¾ "	@	.06	.54
12	1" "	@	.10	1.20
10	1¼" "	@	.11	1.10
7	1½ "	@	.14	.98
16	Pairs 1¼" Flanged Unions	@	.23	3.68
7	" 1½" " "	@	.30	2.10
7	" 2" " "	@	.36	2.52
3	" 2½ " "	@	.45	1.35
7	" 3" " "	@	.50	3.50
3	" 4" " "	@	.80	2.40
3	" 6" " "	@	1.35	4.05
2	" 7" " "	@	1.46	2.92
15	⅜" Couplings	@	.02	.30
12	½" "	@	.03	.36
18	¾" "	@	.04	.72
44	1" "	@	.05½	2.42
30	1¼ "	@	.06	1.80
70	1½ "	@	.07	4.90
50	2" "	@	.10	5.00
8	2½ "	@	.14	1.12
24	3" "	@	.20	4.80
7	4" "	@	.34	2.38
6	6" "	@	.80	4.80
9	7" "	@	1.00	9.00
7	8" "	@	1.30	9.10
5	10" "	@	2.25	11.25
1	12" "			3.10
1	14" "			4.00
1	2" Compression Cplg.			2.35
7	⅛ x ¼ Bushings	@	.01	.07
10	¼ x ⅜ "	@	.01	.10
10	¼ x ½ "	@	.01¼	.12
20	⅜ x ½ "	@	.01¼	.25
6	½ x ¾ "	@	.01½	.09
10	¾ x 1 "	@	.02	.20
32	1¼ x ¾ "	@	.02½	.78
64	1¼ x ½ "	@	.01½	.96
16	⅜ x ¾ "	@	.05	.80
32	2 x ½ "	@	.03	.96
5	1¼ x ⅜ "	@	.03	.15
12	2 x 1½ "	@	.05	.60
3	2 x 1¼ "	@	.05	.15
4	1½ x 1 "	@	.03	.12
3	1¼ x 1 "	@	.03	.09
9	3 x 2½ "	@	.09½	.85
6	3 x 2 "	@	.09½	.57
6	3½ x 3 "	@	.15	.90
1	4 x 2½ "	@	.16½	.16
5	4 x 3 "	@	.16½	.82
1	6 x 2 "			.25
2	5 x 4 "	@	.23	.46
12	3 x 1½ "	@	.09½	1.14
8	2½ x 2 "	@	.06	.48
				$ 118.23

6	3/8 x 1/4 Reducers	@	.01	$ .06
5	1/4 x 1/2 "	@	.01½	.07
14	3/4 x 3/8 "	@	.03	.42
3	3/4 x 1/2 "	@	.03	.09
3	1 x 3/4 "	@	.07	.21
8	1¼ x 1 "	@	.06	.48
4	3/4 x 2 "	@	.15	.60
6	2½ x 2 "	@	.16	.96
9	2 x 1¼ "	@	.15	1.35
23	2 x 1½ "	@	.15	3.45
8	5 x 4 "	@	.55	4.40
6	1/8" Plugs	@	.00½	.03
8	3/8 "	@	.00½	.04
21	1/2 "	@	.01	.21
15	3/4 "	@	.01	.15
13	1" "	@	.01¼	.16
34	1¼ "	@	.04	1.36
4	2½ "	@	.06	.24
16	3" "	@	.08	1.28
2	3½ "	@	.11	.22
7	4" "	@	.13	.91
6	6" "	@	.36	2.16
11	1" Caps	@	.02½	.27
10	1¼ "	@	.03¼	.32
5	1½ "	@	.08	.40
11	2" "	@	.10	1.10
14	2½ "	@	.15	2.10
25	3" "	@	.24	6.00
2	4" "	@	.30	.60
24	1/8" Nipples	@	.02	.48
8	3/8 "	@	.02	.16
24	1/4 "	@	.02	.48
36	1/2 "	@	.02	.72
18	3/4 "	@	.02	.36
39	1" "	@	.03	1.17
24	1¼ "	@	.03	.72
32	1½ "	@	.03½	1.12
33	2" "	@	.05½	1.81
4	2½ "	@	.07	.28
8	3" "	@	.12	.96
3	5" "	@	.40	1.20
3	6" "	@	.80	2.40
2	7" "	@	1.05	2.10
2	8" "	@	1.20	2.40
12	1/8" Brass Ells	@	.04	.48
11	1/4 " "	@	.07	.77
10	3/8 " "	@	.06	.60
11	1/2 " "	@	.10	1.10
3	3/4 " "	@	.16	.48
6	1" " "	@	.20	1.20
6	1¼ " "	@	.26	1.56
10	1½ " "	@	.31	3.10
15	2" " "	@	.45	6.75
6	2½ " "	@	.98	5.88
6	3" " "	@	1.30	7.80
1	2" " 3-way Ell			.50
2	1¼ " " "	@	.25	.50
7	1½ " Crosses	@	.60	4.20
2	3" " "	@	2.10	4.20
2	4" " "	@	4.35	8.70
				$ 93.82

16	3/8" Brass Tees	@	.18	$ 2.88
13	1/2 " "	@	.24	3.12
12	3/4 " "	@	.30	3.60
3	3/4 Finished Brass Tees	@	.35	1.05
11	1" Brass Tees	@	.30	3.30
3	1 1/4 " "	@	.48	1.44
6	1 1/2 " "	@	.50	3.00
9	2" " "	@	.50	4.50
7	2 1/2 " "	@	1.30	9.10
6	3" " "	@	1.60	9.60
10	3 x 2 Brass Reducers	@	1.30	13.00
6	3 x 4 " Bushing	@	1.40	8.40
10	2 x 3 " "	@	.70	7.00
4	2 1/2 x 2 " "	@	.45	1.80
12	2 x 1 1/2 " "	@	.30	3.60
12	1 1/2 x 1 1/4 " "	@	.20	2.40
9	1 1/4 x 1 " "	@	.18	1.62
12	1 1/2 x 3/4 " "	@	.20	2.40
8	3/4 x 1 " "	@	.13	1.04
13	1/2 x 1 " "	@	.13	1.69
9	1/2 x 3/4 " "	@	.06	.54
13	3/8 x 3/4 " "	@	.06	.78
16	3/8 x 1/2 " "	@	.04 1/2	.72
3	3/8 x 1/8 " "	@	.04	.12
6	2" Brass Returns	@	2.10	12.60
3	1" Boiler Plugs	@	.30	.90
6	1 1/4 Brass Plugs	@	.15	.90
9	1 1/2 " "	@	.16	1.44
5	2" " "	@	.25	1.25
1	2 1/2 " "			.50
5	4" " "	@	1.20	6.00
10	1/4" Asb. Discs	@	.05	.50
24	1/2 " "	@	.10	2.40
20	1" " "	@	.13	2.60
33	1 1/4 " "	@	.20	6.60
11	1 1/2 " "	@	.20	2.20
6	3" " "	@	.35	2.10
12	3/4" Brass Ball Jt. Unions	@	1.85	22.20
12	1" " " " "	@	2.30	27.60
12	1 1/4 " " " "	@	2.75	33.00
10	1 1/4 " Spec.Gr.Jt. "	@	1.30	13.00
16	1/8 " Unions	@	.11	1.76
18	1/4 " "	@	.14	2.52
7	1/4 Fin. Brass Unions	@	.15	1.05
10	3/8 Rough " "	@	.18	1.80
6	1/2 " " "	@	.22	1.32
12	1/2 Fin. " "	@	.26	3.12
5	3/4 " " "	@	.27	1.35
6	1" " " "	@	.35	2.10
6	1 1/4 " " "	@	.50	3.00
3	Pr. 1 1/4 Rgh." Flg. "	@	2.10	6.30
3	1 1/2 Rough " "	@	.62	1.86
2	1 1/2 Fin. " "	@	.65	1.30
15	2" Rough " "	@	1.12	16.80
3	3" Fin. " "	@	2.33	6.99
12	3/4" Kewanee Unions	@	.18	2.16
61	1" " "	@	.28	17.08
35	1 1/4 " "	@	.39	13.65
43	1 1/2 " "	@	.46	19.78
				$ 326.43

10	2½ Grease Cup Glasses	@	.15	$ 1.50
1	2" " " "			.10
100	Window Cord Pulleys	@	.03	3.00
2	1½ Stop Cock	@	1.00	2.00
1	2" " "			1.20
7	1" Angle Checks	@	.56	3.92
6	1" Checks	@	.56	3.36
1	2½ I.B. Angle Valve			1.95
4	1¼ Angle Checks	@	.78	3.12
2	½ Checks	@	.30	.60
2	¾ "	@	.40	.80
2	⅛ Globe Valves	@	.25	.50
6	⅛ Angle "	@	.25	1.50
4	¼ Globe "	@	.25	1.00
10	⅜ " "	@	.25	2.50
5	⅜ Gate "	@	.40	2.00
2	½ Globe "	@	.36	.72
8	¾ " "	@	.45	3.60
3	¾ Gate "	@	.59	1.77
10	1" Globe "	@	.65	6.50
7	1¼ " "	@	.80	5.60
6	1¼ Angle "	@	.80	4.80
4	1½ " "	@	1.05	4.20
10	1½ Globe "	@	1.05	10.50
6	1" Angle "	@	.65	3.90
7	2" Gate "	@	2.25	15.75
14	2" Globe "	@	1.75	24.50
1	2" Angle "			1.40
11	1" Check & Waste Cocks	@	.83-1/3	9.17
12	1½ Gate Vlaves	@	1.50	18.00
3	2½ " "	@	4.25	12.75
2	2½ Globe Valves	@	3.65	7.30
1	2½ Angle "			3.50
1	4½ I.B. Gate Valve			8.15
7	3" Brass Gate Valves	@	6.80	47.60
6	2½ I. B. " "	@	3.30	19.80
6	3" I.B. Angles	@	3.75	22.50
3	3" I.B. Gate Valves	@	5.50	16.50
1	3" Stop Cock	@	5.25	5.25
3	2" Hose Valves	@	2.50	7.50
4	½" Fairbanks Valves	@	.45	1.80
14	¾ " "	@	.82	11.48
14	1" " "	@	1.18	16.52
11	1¼ " "	@	1.45	15.95
6	1½ " "	@	2.10	12.60
8	2" " "	@	3.15	25.20
8	¼" Air Cocks	@	.25	2.00
8	⅜ " "	@	.25	2.00
2	½ Water Cocks	@	.60	1.20
1	set Gauge Glass Valves			1.80
12	Brass Valve Studs	@	.50	6.00
6	" " " & Guards	@	1.00	6.00
1	#3 "T" Hdl. Tiger Grease cup			.50
1	#00 Grease Cup			.20
1	¾" Oil Cup			.90
2	2" Plain Hose Pipes	@	1.20	2.40
7	2" Screw Top Hose Pipes	@	1.30	9.10
1	1-qt. Oil Pump Glass			.75
14	Ore Buggy Castings	@	2.00	28.00
2	Hose Couplings	@	2.25	4.50
1	Halter			1.10
				$ 440.31

60#	Asbestos Board	@	.05½		$ 3.30
18#	Vulc. Rubber Valves	@	1.00		18.00
23⅞#	Rubber Condenser Valves	@	1.17		27.95
42½#	Rubber Valves	@	.90		38.25
22#	Composite Valves "J"	@	.95		20.90
17½#	Bumper Rubbers	@	.60		10.50
23#	Gum Rubber	@	1.00		23.00
29#	Pure Rubber Sheet	@	1.25		36.25
26#	Rubber Sheet	@	.15		3.90
180#	Rainbow Rubber	@	.44½		80.10
364#	A.B.S. Sheet Rubber	@	.10½		38.22
120#	Peerless Piston Packing	@	.63		75.60
153#	Square Duck Packing	@	.33		50.49
7#	1" Sq. Hydraulic Packing	@	.44		3.08
40#	Eclipse Gasket	@	.63		25.20
49#	Flax Packing	@	.21		10.29
14#	Asbestos Sheet	@	3.50	per C	.49
9#	Asbestos Wick	@	.20	per #	1.80
20#	Candle Wick	@	.21		4.20
21#	Harness Leather	@	.31½		6.61
31	Yds. Canvass	@	.12½		3.87
4#	Horse Hair	@	.35		1.40
300#	Waste	@	.07½		21.75
65	Gals. Eocene Oil	@	.12¾		8.28
23	" Lard "	@	.53		12.19
20	" Cylinder "	@	.30		6.00
45	" Engine "	@	.20		9.00
10	" Zero "	@	.11		1.10
300#	Ammonia Soap	@	.05¼		15.75
40#	Home Soap	@	.06		2.40
60	Cakes Olive Soap	@	.05¼		3.15
59#	Plumbers' Candles	@	.10½		6.19
2	Gals. Turpentine	@	.60		1.20
3	" Asphaltum	@	.90		2.70
75#	White Lead	@	.07		5.25
100#	Dry White Lead	@	.06		6.00
5	Cans Glue	@	.34		1.70
10	Cans Metal Polish	@	.34		3.40
20#	Arctic Cup Grease	@	.05		1.00
5	15-lb. Kits Mica Axle Gr.	@	.75		3.75
120	Gals. Eng. Oxide Paint	@	.90		108.00
17	Gals. Flat Black Paint	@	1.80		30.60
194	Gals. Linseed Oil	@	.47		91.18
433#	Graphite Axle Grease	@	.04		17.32
410#	Flake Graphite	@	.12		49.20
20	Gals. Elastic Black Paint	@	.70		14.00
42	Gals. Green R Mixed "	@	1.15		48.30
150	Gals Gasoline	@	.16		24.00
427	Ft. ⅞" Hoist Cable	@	.19½		83.00
14000	Crescent Fire Brick	@	33.00		462.00
24500	Common Red Brick	@	10.00		245.00
8	Woodland Spl. G. Valves	@	5.80		46.40
11	Bags Asb. Cem. Felting	@	3.00		33.00
16	Bags No.1 Asbestos Wool	@	2.25		36.00
500#	Asbestos Fibre No.205	@	.11½		57.50
2450#	Soda Ash	@	2.00		49.00
4	Brls. Salt	@	1.10		4.40
121	B. Deck Brooms	@	.24		29.04
8	House Brooms	@	.29		2.32
5	Heavy W. H. Brooms	@	.35		1.85
4	Ex. Heavy W. H. Brooms	@	.38		1.52
					$2027.84

7	#8 Scoop Shovels	@	.85	$ 5.95
4	#5 " "	@	1.10	4.40
12	#3 " "	@	.85	10.20
12	Snow & Coal Shovels	@	.45	5.40
1	coal basket			1.00
64½	Bbls. Cement	@	2.80	180.60
10	" Fire Clay	@	1.80	18.00
1	Tower Coupler			16.50
2	Cable Sockets	@	1.00	2.00
5	Pike Poles	@	1.00	5.00
1	Can Smoothon			.45
1	Pair Tin Shears			.50
1	set U. S. Scales			1.25
10	Sets. Bolt Dies	@	3.75	37.50
26	Champion Moulders' Shovels	@	.78	20/28
81	Chisholm Sq. Pt. Shovels	@	.78	61.18
23	" Rd. " "	@	.65	14.95
1	Long Handled Shovel			.65
18	Short Shovel Handles		.18	3.24
35	Long Shovel Handles		.14	4.90
7	Fork Handles		.25	1.75
23	Coal Forks	@	2.50	57.50
2	Mortar Hoes	@	.35	.70
1	Sampson Car Mover			4.50
6	Rakes	@	.40	2.40
10	Hoe Handles	@	.20	2.00
100	Sledge Handles	@	.10	10.00
72	R. R. Pick Handles	@	.10	7.20
24	Axe Helves	@	.28	6.72
36	Drifting Picks	@	.40	14.40
13	Pole Picks	@	.50	6.50
120	Drifting Pick Handles	@	.15	18.00
38	Pick Handles	@	.10	3.80
24	7" Sidewalk Cleaners	@	.35	8.40
16	5" " "	@	.30	4.80
3	Sprockets	@	3.25	9.75
5	Buckets for Crusher	@	.50	2.50
25#	Borax	@	.10	2.50
65¼	ft. Link Belt	@	.31½	20.55
9594	Soda	@	.02¾	263.82
2450#	Suplhate Aluminum	@	.02½	61.25
1400#	Quartz	@	.60	840.00
4	Large Wheels	@	25.00	100.00
18	Panes Glass, 12 x 16	@	.10	1.80
16	Panes Glass, 12 x 28	@	.15	2.40
19#	Solder	@	.22	4.18
32#	Pure Tin	@	.18	5.76
122#	Magnolia Babbitt	@	.23	28.06
112#	Mogul Metal	@	.22½	25.20
8#	2 Flatters	@	.13	1.04
18#	4 Sledges	@	.06½	1.17
188#	⅝ Manila Rope	@	.13½	25.38
124#	¼ " "	@	.13½	16.74
12#	⅜ " "	@	.13	1.56
150#	1" " "	@	.13½	20.25
119#	1¼ " "	@	.11	13.09
15	Circular Sand Screens	@	.10	1.50
3	Hand Saws	@	.60	1.80
2	Dz. Carpenters' Chalk	@	.05	.10
2	Squares	@	.50	1.00
18#	Rosin	@	.10	1.80
1	12" Car borundum wheel			.85
4#	Potassium Cyanide	@	.30	1.20
				$1997.87

25#	Salammoniac	@	.14½	$ 3.62
1	Bx. #0 Brass Chain			.45
1	" " "			.55
3	Pint cans slate surfacer	@	.35	1.05
7	Pairs wooden shoes	@	.60	4.20
5	Dust Pans	@	.10	.50
5	cans Harness Oil	@	.45	2.25
1	Gal. Harness Dressing			.40
7	Bingham Axes	@	.60	4.20
6	Large Lamp Glasses	@	.15	.90
5	Headlight Glasses	@	.05	.25
24	Lantern Globes	@	.04½	1.08
1	Spring ZOiler			1.00
5	sand screens	@	.90	4.50
50	ft. ½" Air Hose	@	.20	10.00
100	ft. ¾" Garden Hose	@	.10¼	10.25
175	ft. ¾" 4-ply Steam Hose	@	.41	71.75
2	sprinkling cans	@	.35	.70
4	harness snaps	@	.05	.20
4	milk kettles	@	1.05	4.20
3	Oak Pails	@	.38	1.14
18	Wood Pails	@	.20	3.60
12	Galv. Pails	@	.23½	2.82
4	Wheelbarrows	@	1.50	6.00
6	Extra Wheels	@	1.00	6.00
5	Bushel Baskets	@	.15	.75
60	Hammer Handles	@	.04	2.40
7	barrel speckets	@	.15	1.05
23	Whitewash Brushes	@	.85	19.55
25	12" Hack saws	@	.07	1.75
24	9" " "	@	.05	1.20
5	Halter chains	@	.15	.75
6	Hand Oilers	@	.18	1.08
27#	Horse Shoe Nails	@	.17	4.59
91	Sand Paper	@	.00½	.45
446	Emery Paper	@	.03	13.38
10¼#	Twine	@	.21	2.15
9#	Bell Cord	@	.40	3.60
4	Machine Hammers	@	.46	1.84
4	Claw Hammers	@	.25	1.00
5	8" Stillson Wrenches	@	.73	3.65
8	10" " "	@	.92	7.36
7	14" " "	@	1.25	8.75
6	18" " "	@	1.60	9.60
2	24" " "	@	2.25	4.50
2	18" " Jaws	@	.54	1.08
3	24" " "	@	.80	2.40
8	6" Monkey Wrenches	@	.46	3.68
6	8" " "	@	.46	2.76
7	15" " "	@	.63	4.41
12	12" " "	@	.70	8.40
2	21" " "	@	2.00	4.00
124	1¼ x 7 Leather Valves	@	.05	6.20
28	Large " "	@	.50	14.00
9	Whisk Brooms	@	.12	1.08
3	Feather Dusters	@	.50	1.50
4	Hair Dusters	@	.50	2.00
2	Dandy Brushes	@	.25	.50
2	Scrub Brushes	@	.25	.50
3	Wire Sand Brushes	@	.50	1.50
1	File Cleaner	@	.20	.20
				$ 285.22

1	Window Cleaner			$ .25
1	Horse Brush			1.05
14	Curry Combs	@	.14	1.96
12	½" Sash Brushes	@	.06	.72
14	¾" " "	@	.07	.98
3	No.6 Round Varnish Brushes		.48	1.44
1	4" No. 21 Duster			.40
6	No. 228 Brushes	@	.55	3.30
6	4" Paint Brushes	@	.70	4.20
1	#7 Extra Round Duster			.50
10	1-Gallon Cans	@	.18	1.80
1	2-Gallon Can			.24
5	3-gallon cans	@	.30	1.50
1	5-gallon can			.40
1	5-gallon Crescent can			.75
2	kegs. 8d. Wire nails	@	2.50	5.00
13	" 10d. " "	@	2.45	31.85
1	" 8d. Fin. "			2.75
46	" 20 to 60 Wire Nails	@	2.20	101.20
800#	R. R. Spikes	@	.02½	20.00
20#	Bridge Spikes	@	.02½	.50
1	Gross No. 8 Screw Eyes			.45
1	" No. 8 " Hooks			.65
1	Box 7/16 Never-slip toe calks			1.20
16#	Brads	@	.10	1.60
3½#	Clout Nails	@	.06	.21
2	¾" Hose Couplings	@	.15	.30
10	1¼ Hose Rings	@	.25	2.50
21	2" Hose Rings	@	.18	3.78
6	¾" Hose Clamps	@	.10	.60
18	1¼" Hose Clamps	@	.15	2.70
12	Pairs 1¼" Butts	@	.01½	.18
11	" 1½" "	@	.01¾	.20
11	" 1¾" "	@	.02½	.27
10	" 2" "	@	.02-2/3	.26
11	" 2½" "	@	.03	.33
12	" 3" "	@	.03¾	.45
1	" 1" Spring Hinges			.30
9	" 3" Strap Hinges	@	.45 per Doz.	.34
3	" 4" " "	@	.55 " "	.14
3	" 5" Lt. Strap Hinges	@	.65 " "	.16
3	" 5" Hy. " "	@	.85 " "	.21
9	" 6" " " "	@	1.20 " "	.90
3	" 8" " " "	@	2.00 " "	.50
2#	Emery Dust	@	.10	.20
5	Lantern Burners	@	.05	.25
2	Spools Brass Wire	@	.37½	.75
10	B.B.B. Locks	@	.20	2.00
1	#440 Padlock			.20
6	Yale Locks	@	.60	3.60
31	½ x 14 Gauge Glasses	@	.10	3.10
12	½ x 16 " "	@	.10	1.20
12	⅝ x 16 " "	@	.10	1.20
12	Fishers Gov. Leathers	@	.13-1/3	1.60
1	Gro. ½" Gauge Glass Gaskets			2.10
24	¾" Gauge Glass Gaskets	@	.01¼	.30
4	sewing needles	@	.02	.08
16	4½" Hinge Hasps	@	.50 per doz.	.66
18	6" " "	@	.65 " "	.97
				$ 217.23

1½#	Piano Wire	@	.25	$ .37
2	No.1 Grobet Knife Files	@	.25	.50
3	No.0 Crossing "	@	.28½	.85
2	#1 Dbl.Cut Equal. "	@	.23½	.47
2	#0 Round Files	@	.17½	.35
2	#4 " "	@	.18	.36
3	#3 " "	@	.17½	.52
2	#1 Half-round Files	@	.22½	.45
1	#3 " " "			.25
3	#00 " " "	@	.22½	.67
2	#4 Narrow Pillow Files	@	.21	.42
3	#1 " " "	@	.20½	.61
1	#2 " " "	@	.20½	.20
1	#00 " " "	@	.20½	.20
3	#6 Round Files	@	.18½	.55
3	#00 Square Files	@	.18½	.55
3	#1 " "	@	.18½	.55
2	#2 " "	@	.18½	.37
1	#2 Crossing File	@	.28½	.28
3	#5 Knife Files	@	.25	.75
3	#00 " "	@	.25	.75
2	#3 " "	@	.26	.52
3	Dbl.Cut. Equal. Files	@	.23½	.70
3	#2 Hand Files	@	.23	.69
3	#1 " "	@	.23	.69
11	Horse Rasps	@	.60	6.60
7	12" Mill Files	@	.17	1.19
6	8" " "	@	.10	.60
2	12" Bastard Files	@	.20	.40
7	12" Sq. Bast. Files	@	.17	1.19
6	10" " " "	@	.12½	.75
7	12" Rd. " "	@	.14	.98
17	10" " " "	@	.13	2.21
12	12" Hf.Rd." "	@	.26½	3.18
22	6" Rd. "	@	.06	1.32
17	6" Square "	@	.09	1.53
2	6" Taper Files	@	.07½	.15
4	5" " "	@	.06	.24
8	6" Flat "	@	.11	.88
10	2" Hand "	@	.15	1.50
43	Elec. Lamps. 16 C.P.100V.	@	.20	8.60
11	" " 32 C.P.100V	@	.20	2.20
10	Bryant Rosettes	@	.15	1.50
68	Fuse Plugs	@	.05	3.40
65	Duggan Cleats	@	.02	1.30
10	Security Insulators	@	.02¼	.23
7	⅜" Fletchers Gem Hldrs.	@	.13	.91
86	Porcelain Insulators	@	2.20 per C	1.89
12	Extension Plugs	@	.12	1.44
15	Swinging Insulators	@	.25	3.75
20	¾ x 6 Porcelain Tubes	@	.04	.80
61	Key Sockets	@	.18	10.98
3	Wall Sockets	@	.25	.75
6	35-Amp. Switches	@	.65	3.90
6	Cut-outd	@	.19	1.14
18	Lamp Guards	@	.10	1.80
41	Shade Holders	@	.05	2.05
6	sets. Arc Brushes	@	.45	2.70
1	Dipper			.18
21	Carbon Holders	@	.25	5.25
5#	Bell Wire	@	.30	1.50
49#	#14 Wire	@	.40	19.60
100	450 Hemp Fuses	@	.13	13.00
				$ 124.21

100	75 Hemp Fuses	@	.033		$ 3.30
100	15 HP Carbon Brushes	@	.05½		5.50
24	75 KW " "	@	.10		2.40
1460	Carbons ½ x 12	@	11.00	per M	16.06
950	Carbons for Manhattan Lamps	@	33.30	" "	31.64
229	Lamps, 8 CP and 16 CP	@	.19		43.51
1	25-amp. Switch				.25
1	32 CP 220 V Lamp				.41
5	Dry Batteries	@	.19		.95
145	Lamps 8 and 16 CP 220 V	@	.22		31.90
1	set Pole Climbers, Comp.				3.25
12#	6oz. Tacks	@	.09		1.08
2	Iron Snatch Blocks	@	2.25		4.50
5624	ft. Maple	@	18.50	per M	104.04
294	" Oak	@	34.00	" "	10.00
4200	" Hemlock	@	12.50	" "	52.50
720	" Washington Fir	@	26.50	" "	19.08
300	" Battens	@	.70	" C	2.10
186	" Beaded Ceiling	@	6.00	" "	11.16
1	Clarion Street Blanket				5.90
2	Street Blankets 141 & 143	@	4 .60		9.20
2	Boxes Leather Washers 1-1/16 x 1⅜	@	.20		.40
2	" 1-1/16 x 1-7/16	@	.20		.40
½	" 11/16 x 15/16	@	.15		.07
½	" 15/16 x 1-4/16	@	.15		.07
1	" 3/16 x 1-9/16				.25
1	" 1-5/16 x 1-12/16				.25
123	3/16 x 2½ Tire Bolts	@	.50	per C	.61
63	5/16 x 2 " "	@	.50	" "	.31
135	5/16 x 2½ " "	@	.50	" "	.67
100	¼ x 1 Machine Bolts	@	.55		.55
120	¼ x 1½ " "	@	.60		.72
70	¼ x 2 " "	@	.63		.44
125	¼ x 2¼ " "	@	.65		.81
30	5/16 x 2 " "	@	.70		.21
36	" x 2½ " "	@	.75		.27
92	" x 3 " "	@	.80		.73
88	" x 3½ " "	@	.83		.73
39	⅜ x 1 " "	@	.75		.30
43	⅜ x 1½ " "	@	.80		.34
60	⅜ x 2 " "	@	1.00		.60
87	⅜ x 3 " "	@	1.00		.87
88	⅜ x 3½ " "	@	1.10		.96
100	⅜ x 4 " "	@	1.15		1.15
185	½ x 1½ " "	@	1.30		2.40
55	½ x 2 " "	@	1.30		.71
81	½ x 2½ " "	@	1.50		1.21
90	½ x 3 " "	@	1.55		1.40
190	½ x 3½ " "	@	1.60		3.04
98	½ x 4 " "	@	1.75		1.71
43	½ x 4½ " "	@	1.85		.80
33	½ x 5 " "	@	1.90		.63
64	½ x 5½ " "	@	1.95		1.25
31	½ x 6 " "	@	2.00		.62
25	⅝ x 1½ " "	@	1.90		.47
191	⅝ x 2 " "	@	1.85		3.53
68	⅝ x 2¼ " "	@	1.90		1.29
51	⅝ x 2½ " "	@	2.00		1.02
70	⅝ x 3½ " "	@	2.10		1.47
					$ 391.99

85	5/8 x 4	Machine Bolts	@	2.10	$ 1.78
74	5/8 x 4½	" "	@	2.15	1.60
68	5/8 x 5	" "	@	2.15	1.46
135	5/8 x 5½	" "	@	2.2o	2.97
43	5/8 x 6	" "	@	2.80	1.20
750	5/8 x 7	" "	@	2.90	21.75
49	3/4 x 2	" "	@	3.00	1.47
50	3/4 x 3½	" "	@	3.25	1.62
17	3/4 x 4	" "	@	3.40	.57
60	7/8 x 2	" "	@	3.50	2.10
50	1 x 2	" "	@	5.00	2.50
81	1/4 x 2	Carriage Bolts	@	.42	.34
170	1/4 x 2½	" "	@	.45	.76
200	1/4 x 2½	" "	@	.45	.90
200	1/4 x 3	" "	@	.48	.96
60	1/4 x 3¼	" "	@	.50	.30
125	5/16 x 1	" "	@	.45	.56
68	5/16 x 1½	" "	@	.48	.32
530	5/16 x 2	" "	@	.50	2.65
218	5/16 x 2½	" "	@	.55	1.20
200	5/16 x 3	" "	@	.60	1.20
20	5/16 x 3½	" "	@	.63	.13
100	5/16 x 4	" "	@	.66	.66
50	5/16 x 5	" "	@	.70	.35
74	3/8 x 1	" "	@	.60	.44
47	3/8 x 1½	" "	@	.65	.30
100	3/8 x 2	" "	@	.70	.70
225	3/8 x 3	" "	@	.80	1.80
187	3/8 x 3½	" "	@	.85	1.58
25	3/8 x 4	" "	@	1.00	.25
55	3/8 x 5	" "	@	1.05	.57
77	3/8 x 5½	" "	@	1.10	.85
50	3/8 x 6	" "	@	1.15	.57
50	3/8 x 6½	" "	@	1.20	.60
75	7/16 x 2½	" "	@	.80	.60
50	1/2 x 3½	" "	@	1.27	.63
40	1/2 x 4	" "	@	1.30	.52
125	3/8 x 3½	Whiffletree Bolts	@	2.75	3.44
48	3/16 x 3/4	Stove Bolts.RH	@	.18	.08
75	3/16 x 1	" " "	@	.22	.16
60	1/4 x 1	" " "	@	.35	.21
75	1/4 x1½	" " "	@	.35	.26
100	1/4 x ½	" " FH	@	.50	.50
½	Gro. 12 x 1	Wd.Screws FH	@	.15	.07
½	" 12 x 1¼	" " "	@	.16	.08
1	" 12 x 1½	" " "	@	.18	.18
1	" 10 x ¾	" " "	@	.12	.12
½	" 10 x 1	" " "	@	.12	.06
½	" 10 x 1¼	" " "	@	.14	.07
1½	" 10 x 1½	" " "	@	.15	.22
¾	" 8 x 1	" " "	@	.12	.09
¾	" 8 x 1¼	" " "	@	.13	.10
½	" 8 x ¾	" " "	@	.30 (Brass)	.15
¾	" 7 x ¾	" " "	@	.35 (")	.27
¾	" 10 x 2½	" " Blue	@	.24	.18
½	" 16 x 2¼	" " FH	@	.30	.15
2	" 16 x 2½	" " "	@	.32	.64
1	" 18 x 3½	" " "	@	.60	.60
10	3/8 x 2	Lag Screws	@	.75 per C	.07
60	3/8 x 2½	" "	@	.82	.49
					$ 66.95

25	3/8 x 3 Lag Screws	@ .90	$ .22
44	3/8 x 3½ " "	@ .85	.37
50	½ x 2 " "	@ 1.05	.52
50	½ x 2½ " "	@ 1.14	.57
150	½ x 3 " "	@ 1.30	1.95
30	½ x 3½ " "	@ 1.45	.43
34	5/8 x 2 " "	@ 1.30	.44
16	5/8 x 3 " "	@ 1.50	.24
52	5/8 x 4 " "	@ 1.75	.91
18	¼ x ¾ Set "	@ .00¾	.12
26	¼ x 1 " "	@ .01	.26
23	5/16 x 1" "	@ .00½	.12
20	5/16 x1½" "	@ .00¾	.15
15	3/8 x 1 " "	@ .00½	.07
25	3/8 x 1½ " "	@ .01	.25
8	3/8 x 2 " "	@ .01	.08
40	7/16 x¾ " "	@ .01	.40
20	7/16 x1 " "	@ .01¼	.25
32	7/16x1½ " "	@ .01½	.48
8	7/16x1¼ " "	@ .01½	.12
46	½ x 1 " "	@ .01¼	.57
37	½ x 1¼ " "	@ .01¼	.46
23	½ x 1½ " "	@ .01¼	.27
24	½ x 2 " "	@ .01½	.36
24	9/16x1 " "	@ .01¼	.30
28	5/8 x ¾ " "	@ .02	.56
2	5/8 x 1½ " "	@ .02½	.05
4	9/16 x 3" "	@ .03	.12
14	¼ x 1¼ Cap Screws	@ .01¾	.24
30	5/16 x ¾ " "	@ .01½	.45
33	5/16 x 1½" "	@ .02	.66
36	3/8 x 1 " "	@ .01¾	.63
79	3/8 x 1½ " "	@ .01¾	1.36
15	7/16 x 2¼" "	@ .03	.45
36	7/16 x 1¼" "	@ .02½	.90
10	7/16 x 3 " "	@ .03½	.35
32	½ x 1½ " "	@ .04	1.28
42	½ x 2 " "	@ .05	2.10
13	½ x 3½ " "	@ .05½	.71
5	3/8 Cable Clamps	@ .22	1.10
180	3/8 x 3 Spring Cotters	@ .90	1.62
241	3/32 x 1 " "	@ .10	.24
800	3/16 to 5/16 " "	@ .15	1.20
50#	¼" Wrot. Washers	@ .06	3.00
10#	5/16 " "	@ .06	.60
35#	⅜" " "	@ .06	2.10
265#	½" " "	@ .05	13.25
365#	⅝" " "	@ .05	18.25
14#	¾" " "	@ .04½	.63
85#	1 to 1¼ "	@ .04	3.40
469#	Horse Shoes	@ .05	23.45
165#	5/16 x ⅜ Rivets	@ .06	9.90
176#	¼ x 2 "	@ .06	10.56
25#	¼ x 1 "	@ .06	1.50
219#	3/8 x 2 "	@ .06	13.14
122#	¼ x ½ "	@ .06	7.32
152#	¼ x ½ " Fl.Hd.	@ .05	7.60
98#	3/8 x 1 "	@ .07	6.86
50#	½ x 1½ "	@ .03½	1.75
			$ 147.24

50#	5/8 x 1½	Rivets	@	.03½	$ 1.75
191#	5/8 x 1¾	"	@	.03½	6.68
92#	5/8 x 2½	"	@	.03½	3.22
90#	5/8 x 3	"	@	.03½	3.15
100#	5/8 x 4	"	@	.03½	3.50
93#	5/8 x 4½	"	@	.03½	3.25
130#	¾ x 1¾	"	@	.03¾	4.86
100#	¾ x 2	"	@	.03¾	3.75
28#	¾ x 2¼	"	@	.03¾	1.05
83#	¾ x 3	"	@	.03¾	3.12
100#	¾ x 3½	"	@	.03¾	3.75
100#	¾ x 4	"	@	.03¾	3.75
297#	⅞ x 2¼	"	@	.04¼	12.62
75#	⅞ x 3	"	@	.04¼	3.19
100	1 x 3	"	@	.04¼	4.25
11#	5/16 Sq.Top Nuts		@	.08	.88
18#	⅜ " " "		@	.08	1.44
9#	⅜ Hex." "		@	.09	.81
176#	7/16 " Blank "		@	.05	8.80
38#	7/16 Sq. " "		@	.05	1.90
425#	½ " Top "		@	.05	21.25
200#	⅝ " Blank "		@	.04½	9.00
174#	¾ " Top "		@	.06	10.44
25#	¾ Hex.Blank"		@	.05½	1.37
75#	¾ " Top "		@	.06	4.50
130#	⅞ Sq. " "		@	.06	7.80
50#	⅞ Hex.Blank"		@	.05½	2.75
40#	1" " " "		@	.05	2.00
45#	1" Sq. Top "		@	.05	2.25
185#	1⅛ " " "		@	.04½	8.32
100#	1½ " " "		@	.04½	4.50
2	⅞.32 x 9 Machine Tap		@	.75	1.50
4	⅝.32 x 11 " "		@	.45	1.80
3	½.32 x 13 " "		@	.40	1.20
1	¼ Pipe Tap				.30
1	⅜ " "				.50
1	5/64-60-thd. Hand Tap				.35
5	#8 32 " " "		@	.12¼	.61
1	7/32 24 " " "				.18
4	¼ 24 " " "		@	.20	.80
3	¼ 20 " " "		@	.22	.66
1	5/16 16 " " "		@	.25	.25
1	⅜ 16 " " "		@	.25	.25
6	Center Reamers		@	.35	2.10
7	5/64 Twist Drills		@	.05	.35
12	1/16 " "		@	.04	.48
5	3/32 " "		@	.05	.25
5	⅛ " "		@	.05	.25
4	9/64 " "		@	.06¼	.25
4	5/32 " "		@	.07	.28
11	3/16 " "		@	.07	.77
4	13/64 " "		@	.08½	.34
9	7/32 " "		@	.10	.90
10	15/64 " "		@	.11¼	1.12
4	¼ " "		@	.12	.48
2	17/64 " "		@	.12½	.25
3	9/32 " "		@	.13	.39
5	19/64 " "		@	.14½	.72
3	5/16 " "		@	.16	.48
4	21/64 " "		@	.16½	.66
5	11/32 " "		@	.17	.85
5	⅜ " "		@	.20½	1.02
4	25/64 " "		@	.21	.84
					$ 171.08

7	13/32 Twist Drills	@	.21½	$ 1.50
11	27/64 " "	@	.18	1.98
7	7/16 " "	@	.24	1.68
6	29/64 " "	@	.25¼	1.51
5	15/32 " "	@	.26	1.30
4	31/64 " "	@	.27	1.08
6	½ " "	@	.30	1.80
6	17/32 " "	@	.46	2.76
8	9/16 " "	@	.49	3.92
2	19/32 " "	@	.45½	.91
2	⅝ " "	@	.62	1.24
2	21/32 " "	@	.67	1.34
11	11/16 " "	@	.58	6.38
12	23/32 " "	@	.61¼	7.35
1	¾ " "			.75
5	25/32 " "	@	.74	3.70
3	13/16 " "	@	.75	2.25
3	27/32 " "	@	.80½	2.41
1	29/32 " "			1.04
2	15/16 " "	@	1.00	2.00
2	1" " "	@	1.05	2.10
1	1-1/32 " "			1.28
2	1-3/16 " "	@	1.70	3.40
2	1⅛ " "	@	1.33	2.66
1	1⅜ " "			1.80
1	6x6x1⅝ Wood Pulley			1.05
1	5x6x1⅝ " "			1.01
1	6x7x1⅝ " "			1.10
1	Gro. ⅝ Rainbow Gaskets			1.93
3	Storm Covers	@	2.60	7.80
12	No.40 Cold Blast Lant.	@	.65	7.80
12	Slide Lift "	@	.40	4.80
3	10" Brick Trowels	@	.85	2.55
18½	Sq. Lace Leather	@	.20	3.70
10	Soapstone Crayons	@	.02½	.25
6	Lgths. 6'6"1¼" Wire Wnd.Hose			18.41
15	Tons Hay	@	9.00	135.00
134	Bushels Oats	@	.33½	44.87
10	Cars Sand	@	12.25	122.50
				$ 410.91

RECAPITULATION OF FURNACE SUPPLIES

Sheet No. 1 - - - - - -	$ 1117.78
" " 2 - - - - - -	3178.32
" " 3 - - - - - -	333.93
" " 4 - - - - - -	118.23
" " 5 - - - - - -	93.82
" " 6 - - - - - -	326.43
" " 7 - - - - - -	440.31
" " 8 - - - - - -	2027.84
" " 9 - - - - - -	1997.87
" " 10 - - - - - -	285.22
" " 11 - - - - - -	217.23
" " 12 - - - - - -	124.21
" " 13 - - - - - -	391.99
" " 14 - - - - - -	66.95
" " 15 - - - - - -	147.24
" " 16 - - - - - -	171.08
" " 17 - - - - - -	410.91
Total Furnace Supplies -	$11449.36

CHEMICAL SUPPLIES

10	Bbls. Bungs	@ 5.30	$ 53.00
109	Alcohol Barrels	@ 1.49	162.41
430	Acetate Sacks	@ .08	34.40
173#	Glue	@ .126	21.80
60#	Sewing Twine	@ .17	10.20
260#	Muriatic Acid	@ .01¾	4.55
56	Carboys	@ 1.50	84.00
3806#	Bleaching Powder	@ 2.25	85.63
300	Bbls. Bulk Lime	@ .87	261.00
		Total	$ 716.99

MATHEWS BARN SUPPLIES

22½	Tons Hay	@ 10.00	$ 225.00
674	Bushels Oats	@ .33½	225.85
		Total	$ 450.85

PARSONS RY. SUPPLIES

44000	Lbs. Coal	@ 3.30	$ 72.60
21	" Waste	@ .06¾	1.41
11	Gals. Cylinder Oil	@ .29	3.19
19	" Engine "	@ .20	3.80
		Total	$ 81.00

RETORT SUPPLIES

349 Tons 1147#	Anthracite Screenings	@ 2.367 per ton	$ 827.24
422 Tons 100#	Youghiougheny Coal	@ 3.34 " "	1408.90
610 Tons 510#	Pocahontas Coal	@ 2.287 " "	1391.81
		Total	$3027.95

3027.95 OKE

LABORATORY SUPPLIES

1	lbs.	Potassium Chlorate	$ .50
½	"	" Cyanide	.50
2	"	" Nitrate	.60
3	"	" Permanganate	3.00
7	"	" Hydrate	4.90
1	"	" Dichromate	.50
1¼	"	" Iodide	1.00
1½	"	Sodium Nitrate	.20
1	"	" Phosphate	.30
4	"	" Carbonate	1.00
½	"	" Bisulfite	.25
4	"	Ammonium Acetate	3.30
1	"	" Sulfite	.35
2	"	" Oxalate	1.50
2	"	" Ferrous Sulfate	1.00
½	"	" Molybdate	.80
30	"	Ammonia	2.85
5	"	Manganese Droxid	.75
1	"	Magnesium Chlorid	.70
1	"	Manganese Sulfate	.60
2	"	Ether	1.80
5	"	Phosphoric Acid	2.50
1	"	Lead Peroxid	1.00
1	"	Potassium Acid Sulfate	.60
1	"	Zinc Oxid	.50
1	"	Calcium Carbonate	.30
1	"	Oxalic Acid	.50
2	"	Calcium Chlorid	.60
1	"	Potassium Sulfid	1.10
1	"	" Ferro Cyanid	.60
1	"	Borium Hydrate	1.50
2	"	" Chloride	.50
2	"	Microcosmic Salt	1.00
½	"	Hydrofluoric Acid	.40
2	"	Stannous Chlorid	1.00
½	"	Chloroform	.75
3	"	Ferrous Sulfate	.75
½	"	Litmus	1.10
1/5	"	Hydriodic Acid	1.50
½	"	Copper Oxid	.50
1¼	"	Tannic Acid	1.20
1¼	"	Copper Sulfate	.05
3	"	Granulated Tin	3.00
1	"	Carbolic Acid	.40
1	"	Salicylic Acid	1.00
⅛	"	Silver Nitrate	1.50
1/16	"	Cobaltic Nitrate	.30
½	"	Glycerine	.25
150	"	Sulfuric Acid	11.25
200	"	Hydrochloric Acid	17.64
75	"	Nitric Acid	7.10
1	gal.	C.P. Alcohol	1.50
40	lbs.	Copper & Potassium Chlorid	20.00
¼	"	Iron Wire	.40
6	"	Molybdic Acid	10.20
½	"	Iodin	2.00
3	"	Asbestos	3.00
7	"	Chromic Acid	5.60
2	"	Mercuric Chlorid	1.50
1	"	Zinc Chlorid	.50
		Forward	$ 131.49

Laboratory Supplies,- Continued.

		Brought Forward,-	$ 131.49
1	lbs.	Acetone	.50
1	"	Arsenious Acid	1.00
½	oz.	Methyl Orange	.40
½	"	Phenolphthalein	.50
1	"	Yellow Phosphorus	1.25
1	"	Red Phosphorus	2.25
7	lbs.	Powdered Zinc	4.20
4	"	Granulated Zinc	1.60
1	"	Cadmium Chlorid	2.50
4	"	Carbon Bisulfid	1.50
¼	"	Tartaric Acid	.45
3	"	Acetic Acid	.90
½	"	Benzoic Acid	1.25
¼	"	Citcric Acid	.25
		Total	$ 150.04
		Less 25% Discount	37.51
		Net	$ 112.53

LABORATORY EQUIPMENT

1	Becker Balance and Weights	$ 50.00
1	Pulp " " "	20.00
1	Westphal " " "	15.00
1	Common " " "	5.00
2	Suction Pumps	2.00
1	Gasoline Tank and Pump	5.00
1	Gasoline Can	.25
2	Gasoline Stoves	8.00
1	Aluminum Scoop and Counterpoise	1.25
2	Hoskins Furnaces	18.00
1	Specific Gravity Bottle	2.00
10	Carboys	17.50
1	Crock	.20
6	Thermometers	12.00
5	Beaker Clamps	1.00
1	set Hydrometer	5.00
1 200	Sheets Filter Paper	9.60
2	Aspirator Jars	7.00
1	set cork borers and sharpener	1.65
1	Test Tube Rack	.25
3	Kipp Generators	9.00
6	ft. Tin Pipe	.50
5	Funnel Racks	1.25
1	Iron Condenser	1.50
20	Test Tubes	.40
1	Burette Stand	1.70
4	Copper Stills	35.00
2	Copper Drying Ovens	9.75
12	Potash Bulbs	12.00
4	Copper Steam Baths	3.75
2	Copper Air Baths	9.75
5	Pails	.75
1	Gal. Iron Steam Bath	2.00
1	Granite Ware Pan	.25
6	Jugs	.90
7	Nipper Taps	.35
1	Anvil	.60
2	Dessicators	2.50
2	Sets. Porcelain Rings	1.80
2	Batteries	1.00
65	Reagent Bottles	16.00
2	Alkalimeters	4.00
163	Odd Bottles	11.60
136	Sample Bottles	8.20
1	Doz. Clay Crucibles	3.00
6	Doz. Cupels	3.00
2	Hoskins Burners	10.80
5	Alcoholmeters	6.10
1	set Sieves	5.00
1	Gasoline Lamp	2.00
83	Beakers	10.35
1	Hoskins Lamp	5.00
7	Condensers	3.50
1	Pump	3.00
6	Large Precipitating Jars	1.50
10	Small Precipitating Jars	2.50
1	Desk	5.50
5	Chairs	12.00
	Forward	$ 388.50

LABORATORY EQUIPMENT,- Continued.

	Brought Forward	$ 388.50
41	Funnels	6.58
1	Porcelain Mortar and Pestle	.80
2	Agate Mortars and Pestles	13.00
10	Evaporating Dishes	2.00
1	Diamond Mortar	5.80
10	Graduated Cylinders	5.00
4	Thistle Tubes	.60
10	Brushes	1.00
58	Flasks	17.40
1	Magnet	.25
6	Copper Boxes	.90
1	Spatula	.25
1	Filter Basket	.50
1	Gas Tongs	.75
8	Burette Clamps	4.00
4	Tripods	1.00
5	Precipitating Jars	9.00
80	Watch Glasses	9.60
10	Pipettes	.90
2	Crucible Tongs	1.00
2	Pairs Plyers	.50
1	Sufur Apparatus	4.00
1	Acetate Apparatus	11.75
4	Fractional Columns	2.00
1	Monkey Wrench	.50
3	Glass Tubing	1.50
1	Iron Still	3.00
1	Hot Plate	1.50
25	Glass Rods	1.25
25	Cylinders	15.00
6	Distillation Flasks	1.75
1	Chamois Skin	.25
3	lbs. Rubber Tubing	4.60
3	" " Corks	6.00
10	Sulfuric Acid Tubes	1.50
20	Separatory Funnels	24.00
3	5-gallon Cans	1.50
3	Glass Retorts	1.50
3	Carbon Tubes	2.25
7	Iron Stands and Rings	1.75
2	Alcohol Lamps	1.50
5	Adapters	1.50
	Total	$ 557.93

Balance November 30th 1901		$ 224.37
Depreciation 1902 15%	$ 83.68	
Items worn out(cotton, labels ink well, scratcher, dust pan, scrub brushes, waste basket and duster)	1.20	84.88
Balance November 30th, 1902		$ 139.49

E Q U I P M E N T

Office Furniture & Fixtures

1	Square Desk	Manager's	$ 25.00
1	High "	Genl. Office	15.00
1	Typewriter Desk		8.40
1	Roll-top Desk	Auditor	24.00
1	Shipper's Desk	Foreman	11.60
1	Chair	Auditor	5.00
3	Office Chairs	GenL. Office	3.00
1	Stool	" "	1.50
1	High Stool with Back	" "	2.00
1	Revolving Chair No. 411	Manager's	11.16
1	" " No. 411	"	11.70
3	Office Chairs	"	28.80
1	Stenographer's Chair		6.60
1	Press and Stand		27.00
1	Drafting Table		2.00
1	Levelling Table Rod		13.00
4	Waste Paper Baskets		.50
4	Wire Letter Baskets		1.50
2	Wicker Letter Baskets		.25
1	Time Lock Safe		275.00
1	Rapid Filing Cabinet and Base		47.50
48	Transfer Cases & Filing Indexes		18.90
1	No.4 Smith-Premier Typewriter with Tabulator		149.00
1	Large Counter 15' x 2½' x 3'		45.00
1	Rapid Roller Copier		35.00
1	Lightning Check Punch		18.00
1	Challenge Eyelet Machine		3.00
1	Hand Level		18.00
1	U. S. Postal Scale		2.50
1	18" Flexible Ruler		.50
1	Drawing Pen		.50
1	Smith & Wesson Hammerless Revolver		5.00
4	Steel Erasers		1.75
4	Sponge Dishes		.20
6	Ink Wells		.90
2	Pen Racks		.05
1	Pair Shears		.50
2	Glass Paper Weights		.10
1	Whisk Broom		.25
9	Curtains		11.42
2	Small Rugs		1.00
1	Large Rug		3.30
1	Brass Towel Rack		.10
1	Rand-McNally Atlas		1.00
1	Hair Brush and Comb		.15
		Total	$ 836.63

Net Balance November 30th, 1901	$ 383.20
15% Depreciation in 1902	125.50
Net Balance November 30th, 1902	$ 257.70

E Q U I P M E N T

Machine Shop Machinery

1	42 x 20 New Haven Lathe	$ 420.00
1	4" Jack Chuck	
1	Large Face Plate	
1	Small Face Plate	
1	Steady Rest	
1	Following Rest	
1	Slide Rest	
1	Boring Bar	
1 set	Gears	
1	Crane	
1	Ton Chain Block	
1	Friction Counter Shaft	
	66½ lbs. Tools	
1	Set Belts	
1	Schumacher & Boye Lathe 26 x 14	705.00
1	Large Face Plate	
1	Small Face Plate	
1	4" Jaw Chuck	
1	Steady Rest	
1	Following Rest	
1	Extra Slide Rest	
1	Set Gear	
1	Friction Counter Shaft	
1	set Belts	
	57 lbs. Tools	
	Complete set belts for all tools	218.70
1	Flather & Co. Lathe 18 x 6	75.00
1	Large Face Plate	
1	Small Face Plate	
1	4" Jaw Chuck	
1	Small 3" Jaw Chuck	
1	Little Giant Drill Chuck	
1	set Gears	
1	Following Rest	
1	Steady Rest	
1	Friction Counter Shaft	
1	Set Belts	
	17½ lbs. Tools	
1	Flather & Co. Lathe 14 x 40	215.00
1	Large Face Plate	
1	Small Face Plate	
1	4" Jaw Chuck	
1	Little Giant Drill	
1	Steady Rest	
1	Following Rest	
1	Friction Counter Shaft	
1	Set Belts	
	23 lbs. Tools	
		$1633.70

MACHINE SHOP EQUIPMENT,- Continued

1	Woodward & Powell Planer 27 x 27 x 8	$ 832.00
1	Chuck	
1	Counter Shaft	
1	Set Belts	
	94 lbs. Tools	
1	Dresser, Miller & Co. Radical Drill #30	395.35
1	Set Twist Drills 1/16, ½ to 2"	
1	Counter Shaft	
1	Set Belts	
1	Little Giant Drill Chuck	
1	Barnes 16" Drill Press	78.50
1	Set Twist Drills by 1/64, 1/16 to ½"	
1	Little Giant Drill Chuck	
1	Counter Shaft	
1	Set Belts	
1	Smith & Mills 15" Shaper	212.45
1	Chuck	
1	Counter Shaft	
1	Set Belts	
	13 lbs. Tools	
1	No.12 Garvin Milling Machine	265.80
1	Pair Senders	
1	Chuck	
1	Arbor	
25	Milling Cutters	
1	Counter Shaft	
1	Set Belts	
1	Saunders & Son Pipe Cutter 6"	75.00
1	Set Open Pipe Dies 1¼ to 6" Inclusive	
1	Counter Shaft	
1	Set Belts	
1	No.3 Meriam Bolt Cutter	75.00
1	Set Chasers from ½ to 2"	
1	Set Taps from ½ yo 2"	
1	Counter Shaft	
1	Set Belts	
1	Davis Key Setter No. 1	160.75
12	Cutters	
1	Counter Shaft	
1	Set Belts	
1	Power Hack Saw No. 10	6.88
1	Set Belts	
1	Challenger Grinder No.4	5.00
1	Emery Wheel	
1	Felt Wheel	
1	Polishing Wheel	
1	Counter Shaft	
1	Set Belts	
		$2106.73

MACHINE SHOP EQUIPMENT,- Continued.

1	Yankee Twist Drill Grinder	$ 65.00
1	Set Belts	
1	Main Shaft 85 ft.	160.32
	22 Pulleys	
	8 Hangers	
1	New York Safety Engine 5" x 6"	50.00
1	Main Belt	
1	400# Fairbacnks Scale No. 11½	15.60
1	No.50 Springfield Straightening Machine	27.50
1	Hill Vale Facing Machine	20.25
1	Overhead Trolley	15.00
1	Two-Ton Chain Block	5.00
1	Set Hand Taps ½ x 1	15.00
5	Armstrong Tools	5.00
1	No. 18 Vise	5.00
1	No. 20 Vise	4.00
1	No. 3 Vise	4.00
1	Hand Saw	.50
1	No.2 Brass Pipe Wrench	4.00
1	No.1 Brass Pipe Wrench	3.70
1	Cyclone Box Opener	.50
1	No.1 Tap Wrench	1.00
1	No.75 Tap Wrench	1.00
1	Set Pipe Taps ⅛ to 2½	15.00
3	Hatchets	6.00
1	Set Carpenters' Bits ¼ to 1"	1.00
2	Extension Bits	1.50
1	Set Mound Scrapers	1.00
1	Folding Machine	9.25
1	Pair Rollers	10.00
1	Turning Machine Stow's	9.82
1	Wiring " "	9.14
1	Double Reamer	6.00
1	Champion Forge #401½	15.00
1	Screw Punch ⅜ to ¾	10.65
1	Riveting Hammer	.50
1	4" Roller Flue Expander	2.00
1	2" " " "	2.00
1	Whitewash Machine	25.00
1	Set LeCount Lathe Dogs	2.50
22	Hand Screws	2.20
1	Copper Pipe Expander	2.00
3	Turban Flue Cleaners	30.00
1	Beading Tool	.10
1	Ratchett Brace	.50
1	Adj. Die Stock & Taps ¼ to ½	2.00
1	Set Steel Alphabet Stamps	1.00
1	Set Steel Numbers	1.00
2	24" Stilson Wrenches	1.00
2	18" " "	1.00
2	12" " "	.50
2	4-foot Chain Tongs	2.00
2	4-foot No. 13½ Vulcan	2.00
2	4-foot Common Chain Tongs	1.00
1	6-foot " " "	1.00
1	24" " " "	1.00
1	No.2 Pipe Cutter	1.00
1	No.1 " "	.50
1	No.0 Oster Pipe Dies ⅛ to ½	1.00
		$ 579.53

MACHINE SHOP EQUIPMENT,- Continued.

1	#1½ Oster Pipe Dies ¼ to 1"	$ 2.00
1	#3 " " " 1 to 2"	3.00
1	#6 " " " 2½ to 4"	4.00
1	#5 Phoenix Howe Pipe Vise	1.00
1	Fred. Macey Roll Top Desk	34.80
1	Revolving Chair	7.75
1	Pair Bachelder Indicators	90.00
1	Ideal Reducing Wheels	10.00
1	Universal "T" Square	2.50
1	Pair Shears	.50
1	Ink Stand	.25
4	Filing Cases	1.00
1	Duster	.25
1	Whisk Broom	.25
1	Mirror	2.00
1	Planetary Pencil Sharpener	3.50
1	Tape	.50
2	Shannon Bill Files	.70
1	Steel Eraser	.50
1	Doz. Blue Print Clasps	.60
2	Door Mats	1.00
1	Revolution Counter	2.00
1	Fig. 72 A Separating Calorimeter	45.00
1	9½" Westinghouse Air Pump	100.00
1	Pump Governor	15.00
1	Main Reservoir 20½ x 72	22.33
1	Fig. 12 Portable Tachometer	60.00
1	9" Cleveland Air Hammer #8347	159.40
1	3" " " " #3038	80.00
1	1¾" " " " #2049	75.00
1	#2 Little Giant Air Drill	125.00
1	#3 " " " "	100.00
1	#11 " " " "	125.00
1	½-ton chain block	11.00
1	1¼" Tube Expander	9.00
1	Crosby Guage Tester	50.00
1	Carpenters Calorimiter	70.50
		$1215.33
	Total Sheet No.	1633.70
	Total Sheet No.	2106.73
	Total Sheet No.	579.53
	Total	$5535.29

Depreciation	15%	'98	$280.47	
"	15%	'99	283.26	
"	15%	'00	2465.13	
"	15%	'01	601.18	
"	15%	'02	830.29	4460.33

Net Balance Nov. 30th, 1902 $1074.96

E Q U I P M E N T

Blacksmith Shop Machinery

1	No. 313 Bement & Son Steam Hammer	$ 685.22
1	Anvil	41.00
1	Small Anvil	
1	Rivet Cutter	
1	Pair Bellows	
1	Large Vise	
36	Shaping Tools	
40	Cutter Pinchers & Chisels	
1	No. 16 Sledges	
2	No. 8 Sledges	
1	No. 6 Sledge	
34	Pair Tongs	
1	Hand Bolt Header $\frac{3}{8}$ x $1\frac{1}{4}$ Heading Tools	
1	Set $\frac{1}{4}$ x $\frac{1}{2}$ x 1/16 Hand Dies	
1	Set $\frac{5}{8}$ x 1 x $\frac{1}{8}$ " "	
1	300# Sledge Block	
1	No. 12 Mandle	
1	No. 2 Billings Clamp	
1	No. 1 " "	
1	Each $\frac{3}{4}$ to $\frac{1}{4}$ Solid Wrenches	
1	set cold chisels	
2	Surface Plates	
4	Calking Irons	
2	Reamers	
		$ 726.22

Less	15%	Depreciation in '98	$ 108.91	
"	15%	" " '99	108.91	
"	15%	" " '00	108.91	
"	15%	" " '01	108.91	
"	15%	" " '02	108.91	544.55
		Net Balance November 30th, 1902		$ 181.67

EQUIPMENT

Carts, Wagons and Horses

One	Gray Horse, Purchased in 1902	$ 193.80
"	Team Black Mares "Maud & Mary"	265.00
1"	" Bay Mares "Nell & Maggies"	271.00
"	Black Horse "Frank"	200.00
"	Sorrel Horse "Dan"	87.50
"	Iron Gray Mare "Maud"	145.00
"	Bay Horse "Captain"	175.00
"	Bay Horse "King"	150.00
"	Iron Gray Mare "Lid"	225.00
"	Top Road Wagon	25.00
"	Buggy	52.00
"	No.50 Wagon, Canopy Top	124.63
"	No.11 Rubber Tired Top Buggy	142.00
"	Set D. Team Harness	38.00
"	Set Light Single Harness	10.00
"	Set Light Double Harness	25.00
"	Single Harness	38.00
"	S.R.O.R. Single Harness	21.99
"	Portland Cutter	35.00
"	Jump Seat Cutter	35.00
"	Double Sleigh	34.30
"	No.5 Sleigh	36.00
1	Lumber Wagon	53.00
1	Lumber Wagon	40.00
4	Cinder Dump Carts	166.49
1	Cinder Dump Cart	66.07
1	Braize Cart	24.16
5	Cart Saddles and Breeching	17.00
4	Buffalo Robes	55.00
2	Cushions	39.00
1	No. 163 Cutter	54.60
		$2844.54

Net Balance Nov.30th, 1901	$1201.45	
Additions 1902	248.40	
	$1449.85	
Depreciation 25% in 1902 $ 649.04		
Gr. Horse "Charlie" died 22.50		
(1 lap robe, 2 light poles,		
1 lt. N.Yoke worn out) 1.03	672.57	
Net Balance Nov.30th, 1902	$ 777.28	

E Q U I P M E N T

Carts, Wagons and Horses

One	Gray Horse, Purchased in 1902	$ 193.80
"	Team Black Mares "Maud & Mary"	265.00
1"	" Bay Mares "Nell & Maggies"	271.00
"	Black Horse "Frank"	200.00
"	Sorrel Horse "Dan"	87.50
"	Iron Gray Mare "Maud"	145.00
"	Bay Horse "Captain"	175.00
"	Bay Horse "King"	150.00
"	Iron Gray Mare "Lid"	225.00
"	Top Road Wagon	25.00
"	Buggy	52.00
"	No.50 Wagon, Canopy Top	124.63
"	No.11 Rubber Tired Top Buggy	142.00
"	Set D. Team Harness	38.00
"	Set Light Single Harness	10.00
"	Set Light Double Harness	25.00
"	Single Harness	38.00
"	S.R.O.R. Single Harness	21.99
"	Portland Cutter	35.00
"	Jump Seat Cutter	35.00
"	Double Sleigh	34.30
"	No.5 Sleigh	36.00
1	Lumber Wagon	53.00
1	Lumber Wagon	40.00
4	Cinder Dump Carts	166.49
1	Cinder Dump Cart	66.07
1	Braize Cart	24.16
5	Cart Saddles and Breeching	17.00
4	Buffalo Robes	55.00
2	Cushions	39.00
1	No. 163 Cutter	54.60
		$2844.54

Net Balance Nov.30th, 1901	$1201.45	
Additions 1902	248.40	
	$1449.85	
Depreciation 25% in 1902	$ 649.04	
Gr. Horse "Charlie" died	22.50	
(1 lap robe, 2 light poles, 1 lt. N.Yoke worn out)	1.03	672.57
Net Balance Nov.30th, 1902		$ 777.28

CHARCOAL CARS

Class A 34 Ft.	Class B 33 Ft.	Class C 32 Ft.
No. 101	No. 112	No. 113
102	116	114
103	117	115
104	119	118
105	120	126
106	121	130
107	122	131
108	124	133
109	125	134
110	127	135
111	128	136
	129	137
	132	138
11 cars	13 cars	13 cars

38 Cars @ $143.18 each		$ 5440.96
Additions 1900 a/c Air Brakes & Couplers		4807.20
Total Cost of 38 cars		$10248.16
Less One No. 123 destroyed by fire November 30th, 1900		226.73
Total Cost of 37 cars		$10021.43
Less 15% Depreciation in '98	816.14	
" 15% " " '99	816.14	
" 15% " " '00	1503.22	
" 15% " " '01	1503.22	
" 15% " " '02	1503.22	6141.94
Net Balance November 30th, 1902		$ 3879.49

38 charcoal cars: Cost to buy and repair and make ready for service each - - - - - $ 143.18

Above cars: Cost to equip with air brakes and couplers each - - - - - - - 126.50

$ 269.68

E Q U I P M E N T

S C A L E S

1	No. 1573 6BM Charging Scale		$ 401.43
1	5-ton D.B.M.& F. Scale		154.00
1	50-ft. Platform R.R. Track Scale (120,000 Capy.)		880.55
1	Truck Scale		10.00
1	5-ton D.B.M.& F. Scale		113.75
2	400-lb. Fairbanks Scale at Machine Shop		16.90
1	Charging Scale		100.00
1	Fairbanks Platform Scale		146.50
			$1823.13
	Less Depreciation 15% in '98	$ 104.65	
	" " 15% " '99	251.50	
	" " 15% " '00	251.50	
	" " 15% " '01	273.47	
	" " 15% " '02	273.47	1154.59
	Balance November 30th, 1902		$ 668.54

T E L E P H O N E S

2	Telephones at $12.50		$ 25.00
1	Long Distance Telephone(Office) Worn Out. No Good		18.00
1	" " Board & Transmitter " " " "		8.00
1	Extension Bell (Machine Shop) " " " "		2.75
1	Extra Ear Phone " " " " " "		1.25
			$ 55.00
	Less 15% Depreciation in '98	$ 8.25	
	" 15% " " '99	8.25	
	" 15% " " '00	8.25	
	" 55% " " '01	30.25	55.00
	Balance November 30th, 1902		00.00

O R E B A R R O W S

8	Ore Barrows		$ 362.97
	Less 15% Depreciation in '98	$ 54.45	
	" 15% " " '99	54.45	
	" 15% " " '00	54.45	
	" 15% " " '01	54.45	
	" 15% " " '02	54.45	272.25
	Balance November 30th, 1902		$ 90.72

PIG IRON TRUCKS

20	Iron Trucks		$1313.33
8	Iron Trucks		375.76
	Less 15% Depreciation in '98	$ 197.00	$1689.09
	" 15% " " '99	221.46	
	" 15% " " '00	221.46	
	" 15% " " '01	221.46	
	" 15% " " '02	221.46	1082.84
	Balance November 30th, 1902		$ 606.25

E Q U I P M E N T

CHARCOAL BUGGIES

15 Coal Buggies			$ 530.22
5 " " Additions 1902			199.74
			$ 729.96
Less 15% Depreciation in '98		$ 79.53	
" 15% " " '99		79.53	
" 15% " " '00"		79.53	
" 15% " " '01		79.53	
" 15% " " '02		109.49	427.61
			$ 302.35

CHARCOAL TRAM CARS

2 Charcoal Push Cars			$ 19.28
Less 15% Depreciation in '98		$ 2.89	
" 15% " " '99		2.89	
" 15% " " '00		2.89	
" 15% " " '01		2.89	
" 15% " " '02		2.89	14.45
			$ 4.83

L A U N C H

1 36-foot Naptha Launch Complete			$ 672.24
Less 15% Depreciation in '98		$ 84.17	
" 15% " " '99		100.83	
" 15% " " '00		100.83	
" 15% " " '01		100.83	
" 15% " " '02		100.83	487.49
			$ 184.75

L O C O M O T I V E

1 13 x 24 28-ton Dixon Locomotive			$1221.32
1 16 x 24 40-ton Baldwin Locomotive			3043.75
			$4265.07
Less 15% Depreciation in '98		$ 183.20	
" 15% " " '99		639.76	
" 15% " " '00		639.76	
" 15% " " '01		639.76	
" 15% " " '02		639.76	2742.24
			$1522.83

K I L N B A R R O W S

6 Wood Barrows (worn out and of no value)			$ 88.95
Less 15% Depreciation in '98		$ 13.34	
" 15% " " '99		13.34	
" 15% " " '00		13.34	
" 15% " " '01		13.34	
" 40% " " '02		35.59	88.95
			00.00

E Q U I P M E N T

PIG IRON LOADERS

7 Slides
4 Dump Cars
28 Short Pieces wooden track
4 long pieces wooden track
3 wooden horses
1 switch
1 dump

Total - - - - - - - - - -				$ 368.29
Less 15% Depreciation in '98		$ 55.24		
" 15% " " '99		55.24		
" 15% " " '00		55.24		
" 15% " " '01		55.24		
" 15% " " '02		55.24		276.20
Balance November 30th, 1902				$ 92.09

S C O W

1 8 x 15 Flat Bottom Scow				$ 14.52
Less 15% Depreciation in '98		$ 2.18		
" 15% " " '99		2.18		
" 15% " " '00		2.18		
" 15% " " '01		2.18		
" 15% " " 02		2.18		10.90
Balance November 30th, 1902				$ 3.62

TESTING MACHINE

1	50,000 Testing Machine, auto. with screw dial beam			
1	Complete set dies			
1	Counter Shaft			
1	Set Belts			$ 719.80
Less 15% Depreciation in '98			$ 107.97	
" 15% " " '99			107.97	
" 15% " " '00			107.97	
" 15% " " '01			107.97	
" 15% " " '02			107.97	539.85
Balance November 30th, 1902.				$ 179.95

BROWN PYROMETER

1 Brown Pyrometer				$ 62.00
Less 15% Depreciation in '99		$ 9.30		
" 15% " " '00		9.30		
" 15% " " '01		9.30		
" 15% " " '02		9.30		37.20
Balance November 30th, 1902				$ 24.80

M A T H E W S W O O D J O B

Carts, Wagons and Horses

One	Bay Mare	Bailey	$ 187.00
"	Black Horse	"	187.00
"	Bay Mare	Newman	200.00
"	Bay Horse	"	200.00
"	Brown Horse	"	200.00
"	Brown Horse	"	200.00
"	Gray Mare	"	200.00
"	Gray Mare	"	200.00
"	Sorrel Mare	"	200.00
"	Black Horse	"	200.00
"	Roan Horse	"	200.00
"	Bay Mare	"	200.00
"	Brown Horse	"	200.00
"	Gray Horse	"	200.00
"	Brown Horse	"	200.00
"	Brown Horse	"	200.00
"	Gray Horse	"	200.00
"	Gray Horse	"	200.00
"	White Horse	"	200.00
"	Gray Horse	"	200.00
"	Gray Horse	Caron & Rough	175.00
"	Gray Horse	"	175.00
"	Bay Horse	"	175.00
"	Bay Horse	"	175.00
"	Black Horse	"	175.00
"	Bay Horse	"	175.00
"	Bay Horse	"	175.00
"	Bay Horse	"	175.00
"	Roan Horse	"	175.00
"	Gray Mare	"	175.00
"	Gray Mare	"	175.00
"	Bay Horse	"	175.00
"	Gray Mare	Co. Purchase	193.80
"	Black Mare	"	193.80
"	Roan Mare	"	193.80
"	Bay Horse	"	193.80
"	Bay Mare	"	193.80
"	Gray Mare	"	193.80
"	Black Horse	"	193.80
"	Black Horse	"	193.80
"	Gray Horse	"	193.80
"	Gray Horse	"	193.80
"	Black Horse	"	193.80
"	Gray Mare	"	193.80
"	Black Horse	"	193.80
"	Gray Gelding	Spades	175.00
"	Brown Gelding	"	175.00
		Forward	$8943.40

	Brought Forward		$ 8943.40
4	No. 5 C.S. Sleighs		185.90
6	Sleighs with racks		120.00
6	Drays with racks		48.00
1	Set Sleighs		45.00
7	No.5 C.S. Sleighs Complete		362.00
16	4" Mall. Skein Wagons		1234.90
6	Trucks with Wtrees and N. Yokes		180.00
5	Heavy Neck Yokes		10.00
1	No.70 Cutter with Shafts		32.00
1	Pole		5.50
6	No.60 Horse Collars		23.40
2	Sets 2¼ Chain Harness @ $42.00		84.00
6	Sets Double Harness		52.00
6	Sets Harness		279.34
5	Sets 2½ Double Harness Complete		236.48
	Total 1902 Purchase		$11941.92
1	Gray Horse "Bill"	$ 185.00	
1	Chestnut Colt "Cub"	200.00	
1	Brown Horse "Jim"	185.00	
1	Brown Horse "Dick"	190.00	
1	Bay Mare "Maggie"	195.00	
1	Bay Horse "Bill"	190.00	
4	Hanson Wagons at $72.81	291.24	
6	Sets Double Heavy Harness	287.70	
1	Wagon Water Tank and Wood Pump	37.72	
6	No.5 C.S. Sleighs	255.00	
5	Cordwood Drays and Racks @ $13.00	65.00	2081.66
	Total Mathews Barn Equipment		$14023.58

Net Balance Nov. 30th, 1901	$2627.54	
Additions 1902	11941.92	
	$14569.46	
Depreciation 1902	$2122.18	
Bay Horse "Tom" died	156.75	
Black Horse "Barney" died	161.20	
Bay Mare "Flossy" died	200.00	
Gray Horse "Pat" died	134.00	
Items (Wtrees, N.Yokes, Halters, ropes, checks, collar worn out)	20.06	2794.19
Net Balance Nov. 30th, 1902		$11775.27

M U N I S I N G E A S T W O O D J O B

Carts, Wagons and Horses.

One	Gray Horse	$ 193.80
"	Brown Mare	193.80
"	" "	193.80
"	Gray Horse	193.80
"	" "	193.80
"	Iron Gray Mare	193.80
"	Black Horse	193.80
"	" "	193.80
"	Dapple Mare	193.80
"	Iron Gray Horse	193.80
"	Gray Horse	193.80
"	Bay Mare	193.80
"	" "	193.80
"	Black Horse	193.80
"	Steel Gray Horse	193.80
"	Dark Gray Horse	193.80
"	" " "	193.80
"	" " "	193.80
2	Black Horse	193.80
"	Steel Gray Horse	193.80
"	Bay Horse	193.80
"	" "	193.80
"	" "	193.80
"	Bay Mare	193.80
"	" "	193.80
"	Black Horse	193.80
"	" "	193.80
"	" "	193.80
"		193.80
"	Roan Mare	193.80
"	Brown Mare	193.80
15	sets harness @ $40.66-2/3	610.00
15	No.5 C.S. Sleighs Complete @ $48.00	720.00
	Total	$7337.80

M U N I S I N G W E S T W O O D J O B

Cartsm Wagons and Horses

One	Gray Horse	$ 193.80
"	Gray Mare	193.80
"	Chestnut Mare	193.80
"	Brown Mare	193.80
"	Bay Mare	193.80
"	Bay Horse	193.80
"	Dark Gray Mare	193.80
"	Iron Gray Horse	193.80
"	Iron Gray Horse	193.80
"	Dapple Gray Mare	193.80
"	Iron Gray Mare	193.80
"	Iron Gray Horse	193.80
"	Bay Horse	193.80
"	Bay Horse	193.80
"	Dark Bay Horse	193.80
"	Sorrel Mare	193.80
"	Black Horse	193.80
"	Black Horse	193.80
"	Black Horse	193.80
"	Dark Bay Horse	193.80
"	Bay Horse	193.80
"	Bay Horse	193.80
"	Black Horse	193.80
"	Black Horse	193.80
"	Sorrel Mare	193.80
"	Gray Mare	193.80
"	Brown Horse	193.80
"	Bay Horse	193.80
"	Brown Horse	193.80
"	Bay Horse	193.80
"	Black Mare	193.80
15	sets harness @ $40.86-2/3	613.00
15	No.5 C.S. Sleighs Complete @ $48.00	720.00
	Total	$7340.80

TOOLS IN GENERAL USE

BLOWING ENGINE TOOLS:

2 Duplex Worthing Pumps 14 x 10 x 14
1 Duplex Prescott Pump 8 x 5 x 10
2 #5 Knowles Pumps
2 #0 Filter Pumps
1 Cross Oil Filter

DYNAMO:

2 2-gallon cans
1 Squirt Can
1 Gibbs Dynamo
2 Westinghouse Dynamos
1 10 x 14 Russell Engine
1 9 x 14 x 14 Compound Russell Engine

CRANE HOIST ENGINE:

2 2-gallon cans
1 Squirt Can
1 Steel Cylinder Oil Pot
1 Pneumatic Pyrometer

LOCOMOTIVE:

2 Squirt Cans
1 8" Monkey Wrench
1 12" Monkey Wrench
1 Baldwin Locomotive 16 x 24
1 Dixon Locomotive 13 x 32
1 14" Wrench
1 3-gallon can
2 2-gallon cans
1 scoop
1 broom
1 hammer
1 poker
1 scraper

ORE CRUSHER:

1 broom
1 hammer
1 Gates Crusher No.3
1 8 x 12 Russell Engine
1 hoe
3 2-gallon cans
1 hand oiler
1 squirt can
1 grease can

CHEMICAL BOILER HOUSE NO. 1:

1 8" Monkey Wrench
1 12" Monkey Wrench
3 2-gallon cans
3 squirt cans
2 long-snoot cans
3 lanterns
50 ft. ¾" water hose

TOOLS IN GENERAL USE,- CONTINUED

CHEMICAL BOILER HOUSE NO. 2;

1 8" Monkey Wrench
2 Lanterns
2 2-gallon Cans
2 Hand Oilers
1 Slash Bar
1 Ash Scraper
1 Poker
3 Scrapers
2 Scoop Shovels

NO. 1 CHEMICAL PLANT BOILERS:

50 ft. ¾" Water Hose
50 ft. ¾" Steam Hose

NO. 2 CHEMICAL PLANT BOILERS:

50 ft. ¾" Wire-wound Hose
50 ft. ¾" Wire Wound Steam Hose
25 ft. Boiler Cleaner Hose

FURNACE BOILERS:

50 ft. ¾" Wire Wound Hose
50 ft. ¾" Wire Wound Steam Hose
25 ft. Boiler Cleaning Hose

CHEMICAL PLANT NO. 1 FIRE PROTECTION:

700 ft. 2" Rubber Hose
400 ft. 2" Cotton Hose
5 Nozzles
10 Hose Wrenches
1 Hose Cart

CHEMICAL PLANT NO. 2 FIRE PROTECTION:

1150 ft. 2" Hose
4 Nozzles
8 Hose Wrenches
1 Hose Cart

COLLIER'S SHANTY:

1 Stove
4 Shovels
2 Mortar Hoes
10 1-gallon Pails
1 Whitewash Brush

ACETATE PLANT NO. 1:

2 Scrapers
2 Rakes
1 Wheelbarrow
2 Short Shovels
2 Long Shovels
2 Scoop Shovels
1 Broom
2 Pails
1 Lantern
2 Plows

TOOLS IN GENERAL USE,- CONTINUED

ACETATE PLANT NO. 1,- CONTINUED:

1 Pair Scales

ACETATE PLANT NO. 2:

2 Wheelbarrows
2 Rakes
2 Long Handled Shovels
2 Scoops
2 Plows
2 Scrapers
1 Pair Scales
1 Water Pail
1 Pick
35 ft. 2" Water Hose
2 Brooms

CHEMICAL PLANT NO. 1:

1 Short Hydrometer
3 Long Hydrometers
1 Short Glass Cylinder
3 Long Glass Cylinders
3 Shovels
6 Pails
1 Broom
1 Pipe Wrench
1 12" Monkey Wrench
4 End Wrenches
4 Hose Wrenches
4 Caulking Irons
2 Funnels
4 Lengths 50" Hose
1 Gallon Pitcher
1 Box Stencil Ink
1 Tin Thief
1 Set No.2 Stencil Figures
1 Stencil
1 2" Reamer
1 Hoop Driver
1 #180 Brush for Stencil
1 No.1 Cooper Adz
1 Nonagon
1 Bbl. Filler and Connection
1 Reading Glue Kettle 15 x 20 x 17½
1 Hammer
1 Sledge Hammer (Light)
1 Clock
1 Gage Rod
1 Crab Winch

CHEMICAL PLANT NO. 2:

1 Length 2" Hose (25 ft.)
5 Lengths 2" Hose (50 ft.)
1 Glue Pot
1 Dipper
2 Funnels
6 Pails
1 Bottle Filler

TOOLS IN GENERAL USE,- CONTINUED

ACETATE PLANT NO. 1,- CONTINUED:

1 Pair Scales

ACETATE PLANT NO. 2:

2 Wheelbarrows
2 Rakes
2 Long Handled Shovels
2 Scoops
2 Plows
2 Scrapers
1 Pair Scales
1 Water Pail
1 Pick
35 ft. 2" Water Hose
2 Brooms

CHEMICAL PLANT NO. 1:

1 Short Hydrometer
3 Long Hydrometers
1 Short Glass Cylinder
3 Long Glass Cylinders
3 Shovels
6 Pails
1 Broom
1 Pipe Wrench
1 12" Monkey Wrench
4 End Wrenches
4 Hose Wrenches
4 Caulking Irons
2 Funnels
4 Lengths 50" Hose
1 Gallon Pitcher
1 Box Stencil Ink
1 Tin Thief
1 Set No.2 Stencil Figures
1 Stencil
1 2" Reamer
1 Hoop Driver
1 #180 Brush for Stencil
1 No.1 Cooper Adz
1 Nonagon
1 Bbl. Filler and Connection
1 Reading Glue Kettle 15 x 20 x 17½
1 Hammer
1 Sledge Hammer (Light)
1 Clock
1 Gage Rod
1 Crab Winch

CHEMICAL PLANT NO. 2:

1 Length 2" Hose (25 ft.)
5 Lengths 2" Hose (50 ft.)
1 Glue Pot
1 Dipper
2 Funnels
6 Pails
1 Bottle Filler

TOOLS IN GENERAL USE,- CONTINUED

CHEMICAL PLANT NO. 2,- CONTINUED:

1 Gage Rod
1 Box Stencil Ink
1 Tin Thief
1 Set No. 2 Stencil Figures
1 2" Reamer
1 Hoop Driver
1 #180 Brush for Stencil
2 Sack Needles
1 Drinking Cup
1 2-gallon Pitcher
1 Hammer
1 Clock
2 Hoes
2 Shovels
1 Short Hydrometer
1 Long Hydrometer
2 Short Cylinders
1 25-gallon Iron Kettle
1 Beaker
1 Crab Winch
1 one-eyed wheelbarrow iron

RETORTS:

8 Scoops
1 Iron Wheelbarrow
1 Wooden Wheelbarrow
2 Pokers
2 Slash Bars
1 Ash Hoe
3 Crowbars
1 Pry
3 Sledges
1 Coal Fork
3 Hammers
2 Monkey Wrenches
5 Cold Chisels
1 Rake
3 Brooms
2 Lanterns
2 Water Pails
1 Tin Pail
3 2-gallon Oil Cans
2 1-quart oil cans
25 Lengths Steam Hose
1 Retort Scraper
50 50-foot lengths 1" Water Hose
119 feet 2" Water Hose
1 Coal Fork
14 Snatch Blocks
1500 feet Cable
1 Hand Saw
1 Hand Axe
1 Square
1 Stillson Wrench

TOOLS IN GENERAL USE,- CONTINUED/

BARN:

1 hay fork
2 Pails

BOTTOM FILLERS AND COAL FORKERS:

10 Picks
2 Sledges
5 Shovels
7 Coal Forks
6 Pole Picks
3 Scoop Shovels

CASTING HOUSE:

6 Hooks
10 Torches
5 Shovels
6 $\frac{3}{4}$" Bars
6 $1\frac{1}{4}$" Bars
2 Notch Hooks
30 Pig Patterns
1 Sow Pattern
6 Heavy Sledges
2 Light Sledges
1 Cinder Barrow
4 $1\frac{1}{2}$" Breaking Bars

TRACK TOOLS:

1 CLAW BAR
1 Spike Maul
2 Tamping Bars
1 Track Gauge
1 Track Jack, Complete

CINDER TOOLS:

4 Bars
3 Shovels
4 Coal Forks
4 Single Picks

YARD TOOLS:

8 Scoops
4 Pointed Scoops
10 Long Handled Shovels
3 Short Pointed Shovels
5 Picks
2 Sledges
1 Big Wrench for Ore Cars
1 Small Wrench for Ore Cars
4 Axes
2 Iron Wheelbarrows
2 50-foot lengths Steam Hose for Ore

BUILDINGS AND CONTENTS

F U R N A C E

Corrugated Iron Stock House 101' x 102'
" " Cast " 52' x 112'
" " Boiler & Stove House 69' x 80'

ENGINE HOUSE:
1 Brick Building 42' x 42'
2 Blowing Engines
1 Prescott Condenser
2 Westinghouse 75 K.W. Generators
1 White Marble Switchboard 48"x 22"x1½"
1 Russell Engine 12 x 14
1 Russell Compound Engine 9 x 14 x 14

PUMP HOUSE:
1 Brick Building 25' x 27½'
2 Worthington Pumps 18½"x 14"x 10"
2 Knowles Pumps
1 Prescott Pump
2 Lime Pumps
1 Ideal Purifier
1 Heater

CHEMICAL PLANT NO. 1

STILL HOUSE:
1 Frame Building 57 x 183
40 Smoke Condensers
6 Settling Tanks
9 Wooden Tar Tanks
4 Storage Tanks
10 Primary Copper Stills with Condensers
4 Neutralizing Tanks equipped with Agitator
4 Neutralizing Liquor and Settling Tanks
4 Wooden Fractional Stills equipped with Burcey Pans
5 Steel Stills equipped with Copper Columns
4 Steel Storage Tanks, Intermediate Liquor
1 Copper Column and Still
1 Steel Refining Still
4 Galvanized Tanks for High Proof and Finished Alcohol
1 #4 Knowles Pump
1 Wooden Acetate Tank
3 Wooden Lime Tanks
1 Rotary Pump
1 Leffel Water Wheel
3 Steel Stills equipped with 1 Burcey Pan
6 Steel Stills equipped with 4 Burcey Pans
1 Steel Still and Harris Column and Condenser
1 Copper Still, column, condenser and sepearator
4 Wooden Tar Tanks

ENGINE HOUSE:
1 Frame Building 66 x 128
1 Prescott Duplex Pump 14 x 12 x 14 #241
1 Prescott Special Duplex Brass Pump 7 x 4¾ x 8
1 Prescott Duplex Pump 14 x 7 x 14 #285
2 Boilers 5½ x 16
2 Boilers 5 x 16
1 Boiler 5 x 16

CHEMICAL PLANT NO. 1

ENGINE HOUSE,- Continued:

3 42" Copper Fans in Wood Cases
3 60" Copper Fans in Wood Cases
1 Russell Engine
1 Prescott Duplex Pump 8 x 5 x 10
1 Cross Oil Filter
3 Boilers 6 x 18
1 Prescott Duplex Pump 9 x 18 x 14 x 24
6 Westinghouse Electric Motors 15 H.P.
1 Condenser
1 Heater

ACETATE PLANT NO. 1

1 Frame Building 28 x 46, Wing 28 x 80, Galv. Iron Sheathing
7 Iron Acetate Pans 8 x 16 x 19

CHEMICAL PLANT NO. 2

PUMP HOUSE:

1 Brick Pump House, Wood Roof, 18 x 22
1 Prescott Compound Duplex Pump 8 x 16 x 12 x 12
1 Independent Condenser & Air Pump 5½ x 7 x 8

BOILER HOUSE:

1 Galvanized Iron Boiler House 35 x 57
4 Stirling Boilers and Equipment
1 8 x 5 x 10 Prescott Feed Pump
1 10 x 5 x 10 Prescott Feed Pump

STILL HOUSE NO. 2

1 Galvanized Still House 47 x 96
2 Bronze Prescott Duplex Pumps 7 x 4¾ x 8
1 6 x 6 Vertical Engine & Shafting & 2 7 x 12 Wood Mixer Tanks
3 Copper Primary Stills and Condensers
1 Copper Tar Still and Condenser
4 Iron Fractional Stills & Column & Condensers
2 Iron Rectifying Stills & Column & Condensers
1 Iron Refining Still & Column & Condenser
9 Iron Storage Tanks
11 Wood Storage Tanks

RETORT BUILDING
ACETATE PLANT NO.2

4 Acetate Pans
4 Acetate Storage Tanks (Wood)
1 Galvanized Iron Retort House 70 x 163½
10 26-ft. Retorts and Condensers
14 Coolers
1 Steam Winch and Cable
726 ft. Wood Trestle
1316 ft. 60# Rail
618 ft. 20# Rail
80 Retort Cars
1 Hydraulic Lift & Hopper & Dumping Machine

HOISTING ENGINE HOUSE:

1 Brick Hoisting Engine House 13 x 14
1 Hoisting Crane Hoist Engine and Cable

MISCELLANEOUS BUILDINGS

1 Brick Machine Shop 32 x 85
1 Frame Blacksmith Shop 20 x 30
1 Brick Veneer Locomotive House 28 x 78
1 Frame Car Repair Shop 24 x 95
1 Frame Ice House 18 x 30
1 Frame Fire Clay House 14 x 48'
2 Frame Dock Scale Houses 5 x 6 each
1 Frame Collier Shanty & Lime House 14 x 65
1 Frame Barn 30 x 35
1 Frame Track Scale House 6 x 9
1 Frame Office Building 36 x 42
1 8-room Cottage
25 Double Tenement Houses, 5 rooms each
1 Frame Oil & Warehouse 16 x 28
1 Frame Coal Shed 12 x 36
1 Frame Acetate Storage House 14 x 96
1 Frame Supply House 14 x 24
1 Frame Floating Boat House 15 x 39
1 Frame Coal Shed 12 x 24
1 Frame Crusher Engine House 12 x 16
1 Acetate Storage House, Wood Frame, Galv. Iron Sheathing, 32 x 85
1 Warehouse, Wood Frame, Galv. Iron Sheathing, 32 x 85
1 Frame Club House

DWELLINGS IN GLADSTONE

1 Manager's Residence (Occupying Lots 25,26,27,28 in South)
1 " Barn (Shore Addition Block 2)
1 Barn Boss' House (Occupying Lots 6-7 South Shore)
(Addition Block 2)
1 Clerk's House (Occupying Lots 23-24 South Shore)
(Addition Block 2)
1 Master Mechanic's House, Lot 6, Block 24, Original Plat.
1 Boat House 12 x 28, Foot Central Ave.

TRACKS:

13499 ft. Yard Track, 60# Rail
2700 ft. Pig Iron Track, 20# Rail
1390 ft. Track between Kilns, 20# Rail

TRESTLES:

1505 ft. Ore Trestle
1761 ft. Kiln Trestle

SMOKE MAIN:

2875 ft. Smoke Main

TELEPHONE LINE

Machine Shop to Master Mechanic's Residence, 3 miles, including brackets, insulators and poles.

DANISH BOND

REPORT OF

PIONEER IRON COMPANY,

CARP RIVER FURNACE DEPARTMENT,

FOR TWELVE MONTHS ENDING NOVEMBER 30, 1902.

NOAH W. GRAY, Manager.

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Marquette, Mich., Feb. 28, 1903.

Mr. William G. Mather,

Vice-President, Pioneer Iron Co.,

Cleveland, Ohio.

Dear Sir:-

I beg to submit statement showing the operations and conditions at the Carp River Furnace, with detailed costs of producing iron for the fiscal year ending Nov. 30, 1902.

There was a great delay in erecting the new boilers at the beginning of the fiscal year, and it was not until Jan. 21st, 1902, that I was able to fill and start the furnace.

BOILERS. I have had considerable correspondence with the Stirling Boiler Co. in regard to these boilers, especially as to the draft, it seeming to me that we were not getting the efficiency from them we ought to get. They have agreed to send an engineer here in March to examine and test the boilers, and perhaps he will be able to make them more efficient for our purposes by increasing the draft to the stack.

All the other improvements and relinings and renewals made while out of blast in 1901 have worked satisfactory, except that there has been some breakages about the old engine, due to our desire to make the largest production possible from this small furnace.

Our hotblast capacity is limited; the old No. 1, on account of its construction, being out of commission most of the time. The No. 2 hotblast is in perfect condition, but, being of small capacity, we are only able to carry about 500 degrees of heat, which makes it take more charcoal per ton of iron than it would if we had a hotblast of more capacity.

There was manufactured from Jan. 1st, 1902, (when the furnace was blown in) to Nov. 30, 1902, 13576 tons, less net shortage at Lake Erie ports of 88 tons, leaving net 13488 tons, at a cost of

$14.464 per ton on yard at furnace. Adding to this--

DEPRECIATION--		
Construction Acct., New Kilns,	$9241.00	$0.685
Improvement Acct., New Boilers, Jackets, Water Supply, &c.,	5956.25	.441
Furnace Inventory Acct.,	334.03	.025
		1.151
Loading and Switching Acct.,	3102.65	.229
		$1.380

Makes a total cost, 13488 tons, of $15.844 per ton.

Included in this cost is the Relinings and Renewals Account, which is $0.334 per ton of iron made, which is .134 more than we should usually charge to this account. The furnace was in blast from Jan. 21, 1902, to Nov. 30, 1902, 313 days, and during this time was stopped 34 days, making the actual time running 279 days, with an average production of 48-6/10 tons for each day running.

I attach hereto a statement of cost, having separated and analyzed the general accounts, and showing the cost of various items per ton.

There has been added to the plant during the year twenty-four 90-cord charcoal kilns, with the necessary trestle for unloading the wood from, at a cost, for

Twenty-four Kilns,	$21655.50 =	$902.31 each
Grading to and Trestle,	4804.93 =	9.03 per foot
Total,	$26460.43	

By agreement with Mr. Schaffer, contractor, these kilns are to pay a rental of one-quarter cent per bushel on the charcoal produced, or a minimum of $12.50 per kiln per month, making a rental of at least $300.00 per month for rental and depreciation.

It is expected that these kilns will produce at least 115000 bushels of charcoal per month, and the old kilns about 30000 bushels per month. It may be possible to produce from all the kilns from 150000 to 160000 bushels per month, which would be enough to