

Plate No. 145

Electric Hoists

Cliffs Shaft Mine

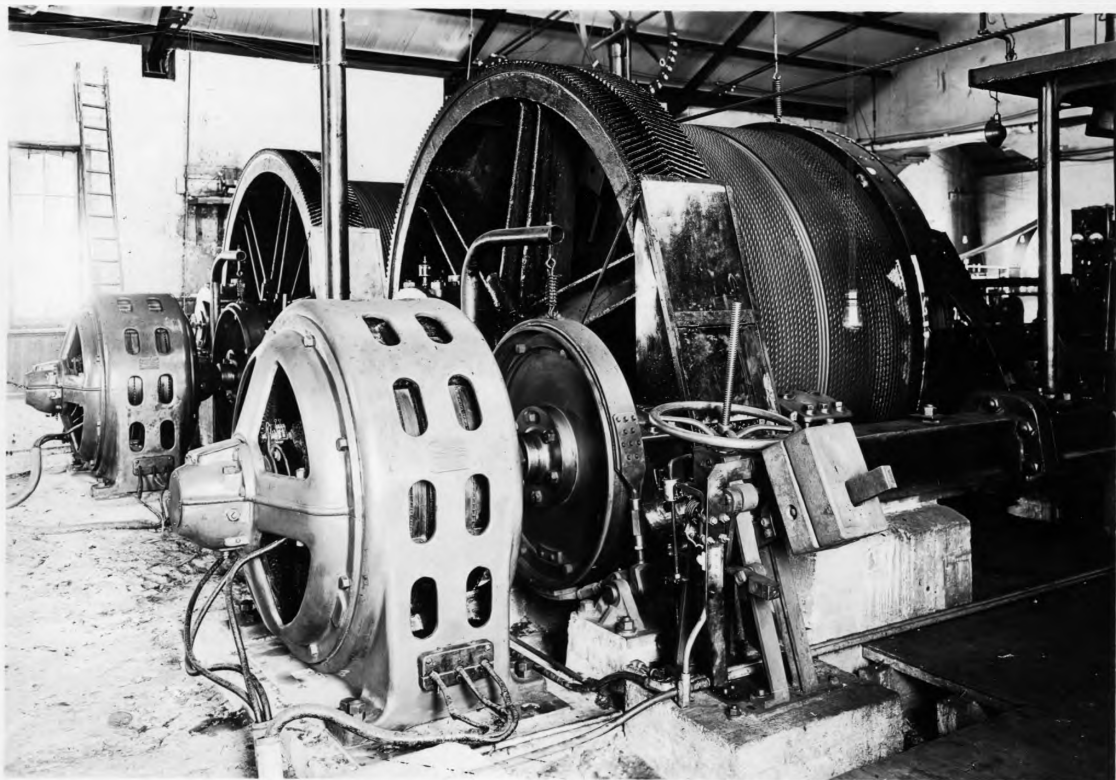


Plate No. 146

Electric Hoists

Cliffs Shaft Mine.



Plate No. 147

Coal Crushing Plant

Cliffs Shaft Mine



Plate No. 148

Coal Crushing Plant

Cliffs Shaft Mine

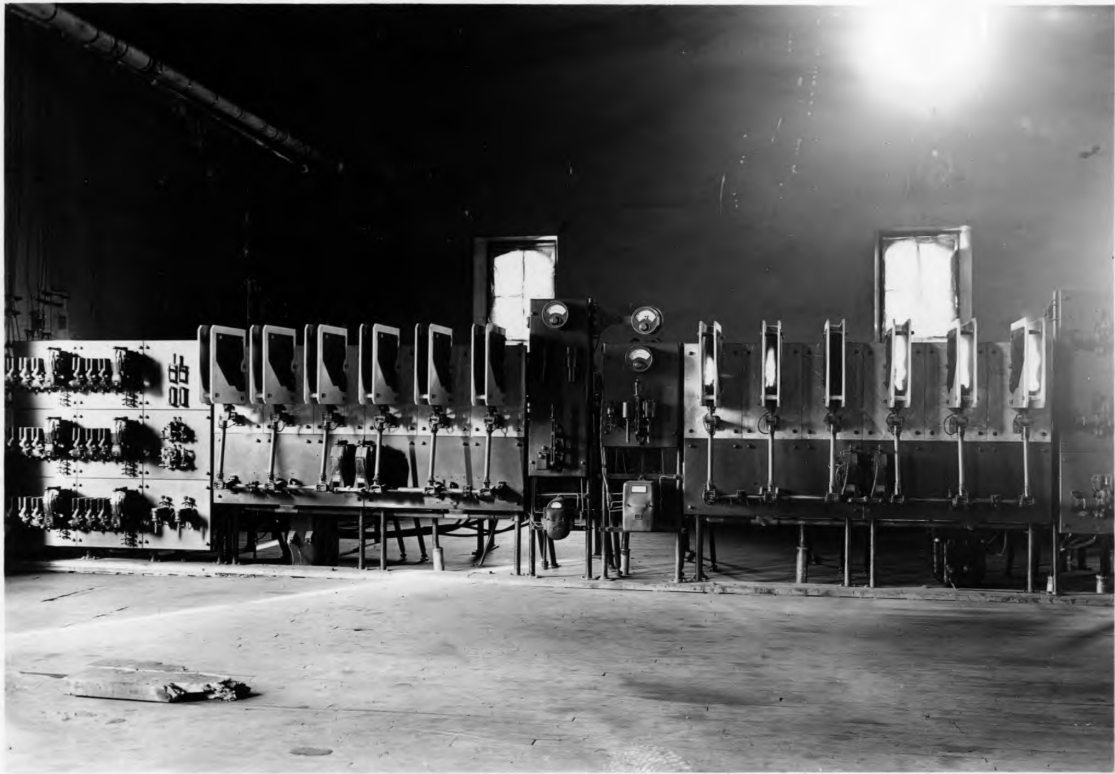


Plate No. 149

Control Panels for Hoists

Cliffs Shaft Mine.

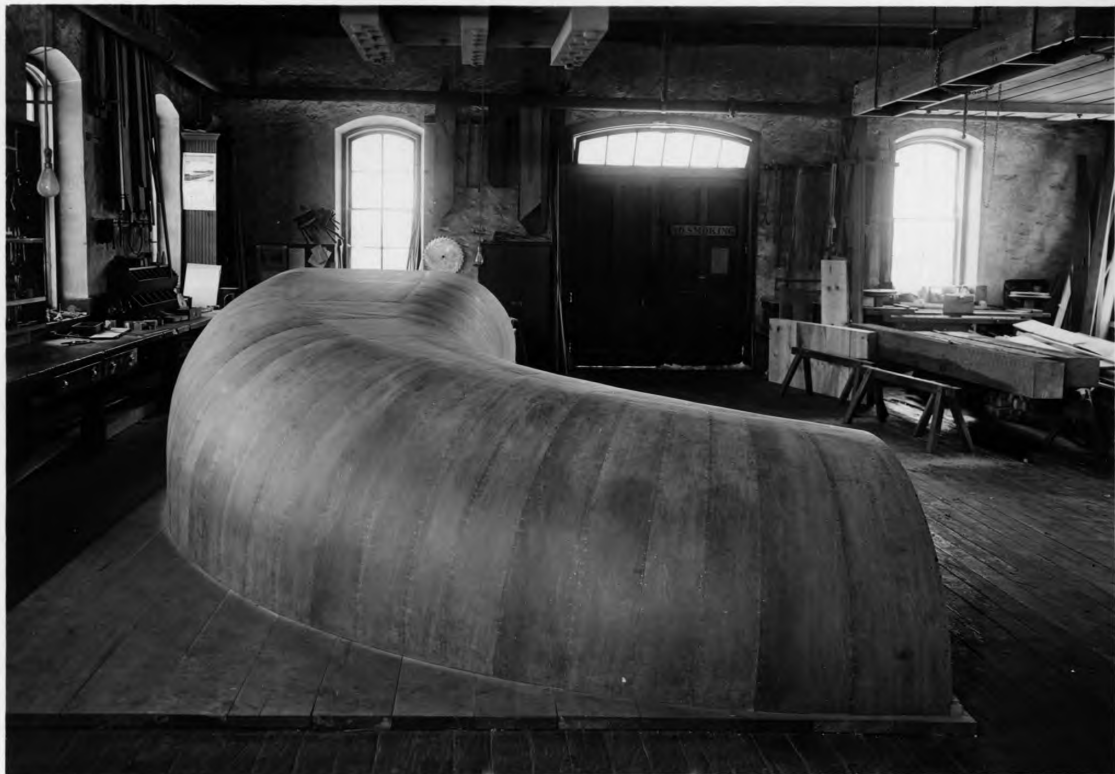


Plate No. 150

Form for Draft Tube

Dead River-McClure Plant.

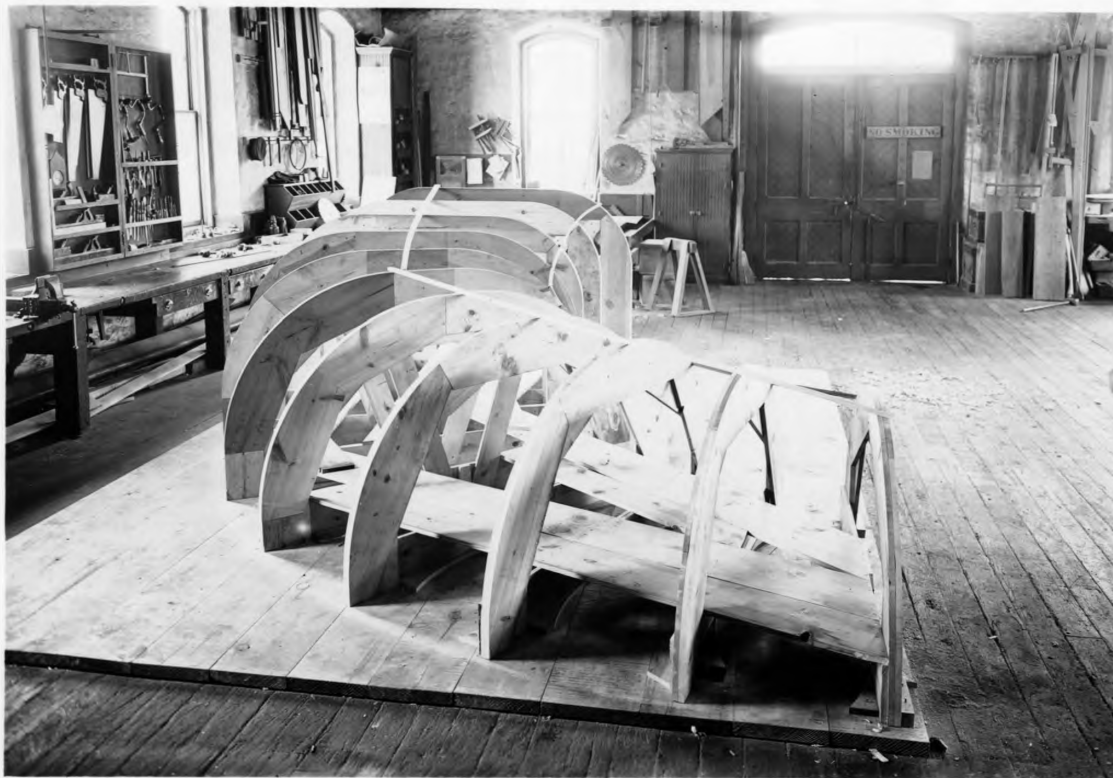


Plate No. 151

Form for Draft Tube

Dead River-McClure Plant.



Plate No. 152

Form for Draft Tube

Dead River-McClure Plant

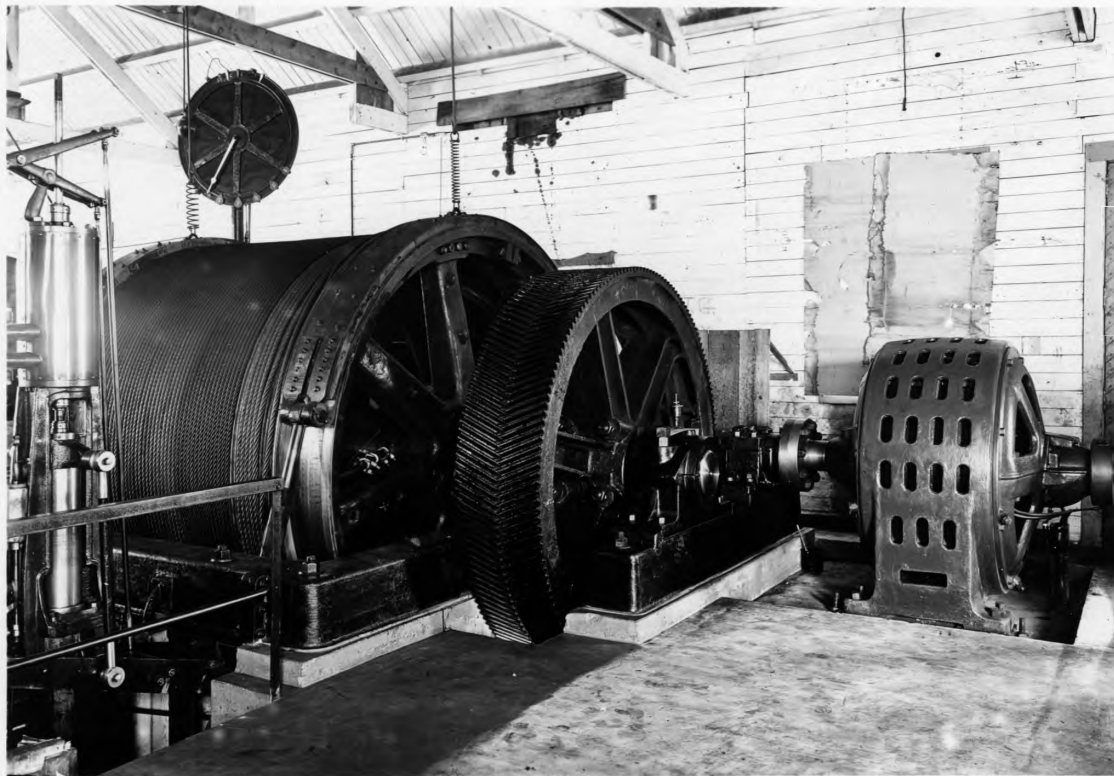


Plate No. 153

Skip Hoist

Francis Mine

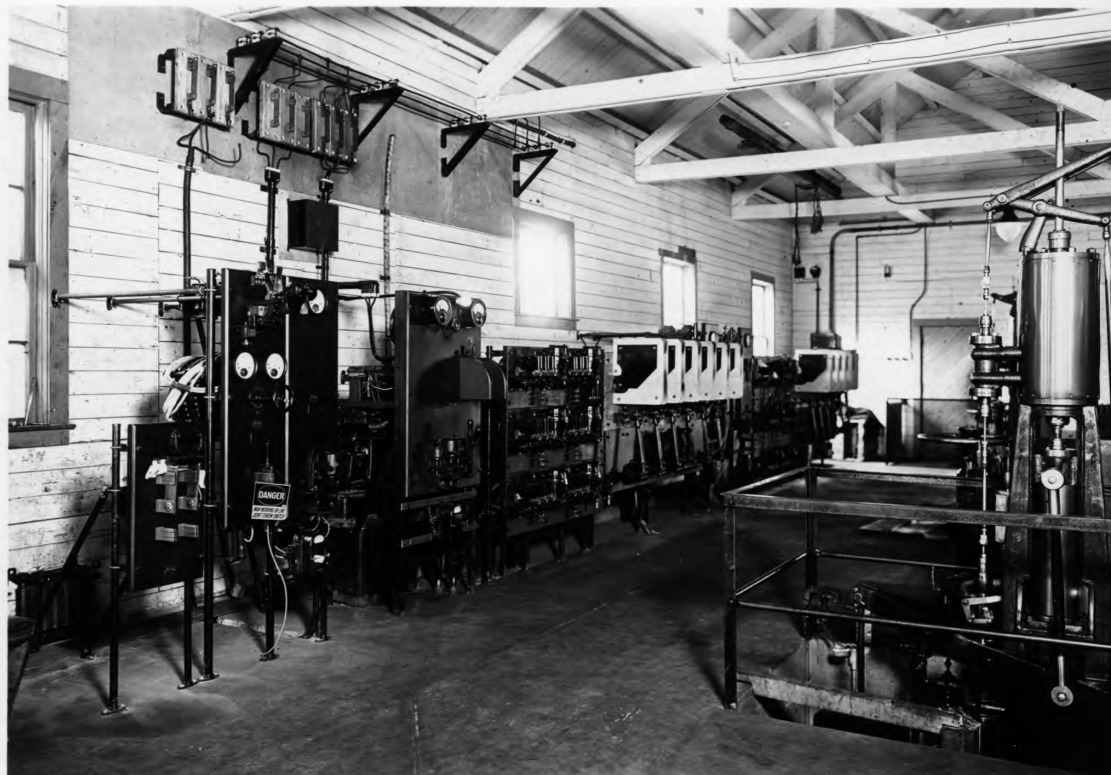


Plate No. 154

Switchboards & Control Panels

Francis Mine

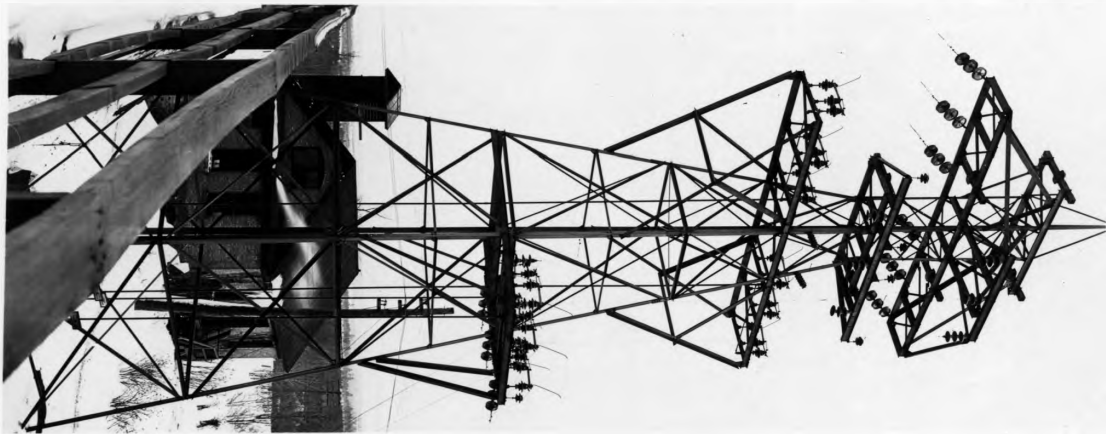


Plate No. 155

Terminal Switch Tower

Prin. Central Power Plant

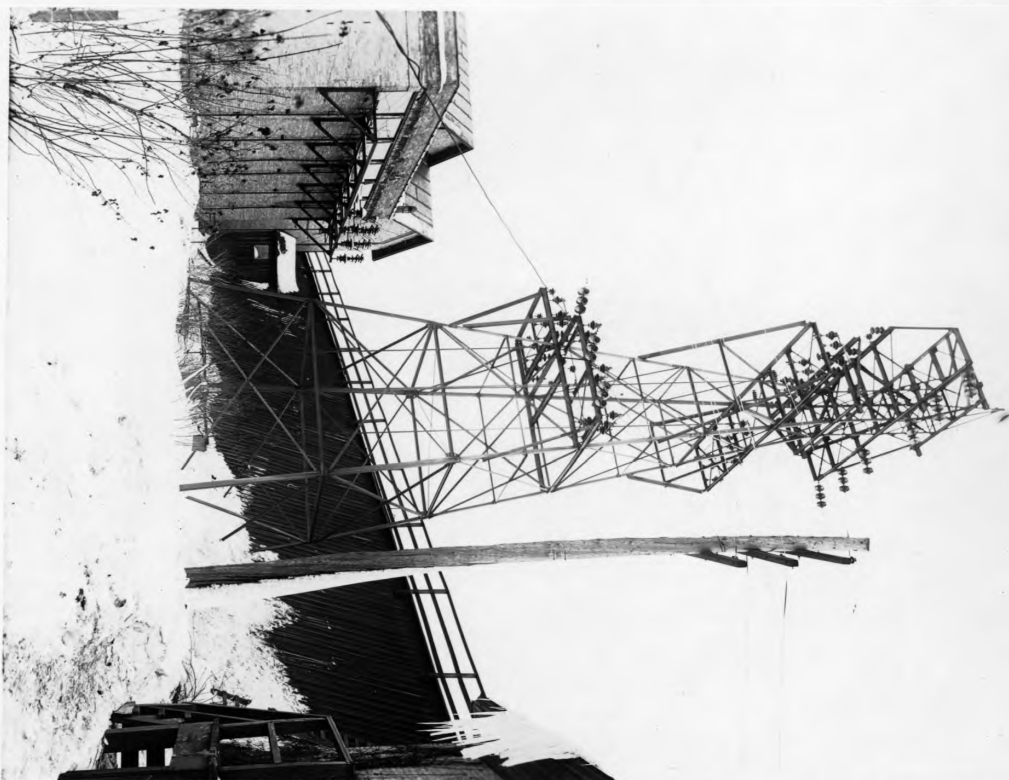


Plate No. 156

Terminal Switch Tower

Prin. Central Power Plant.

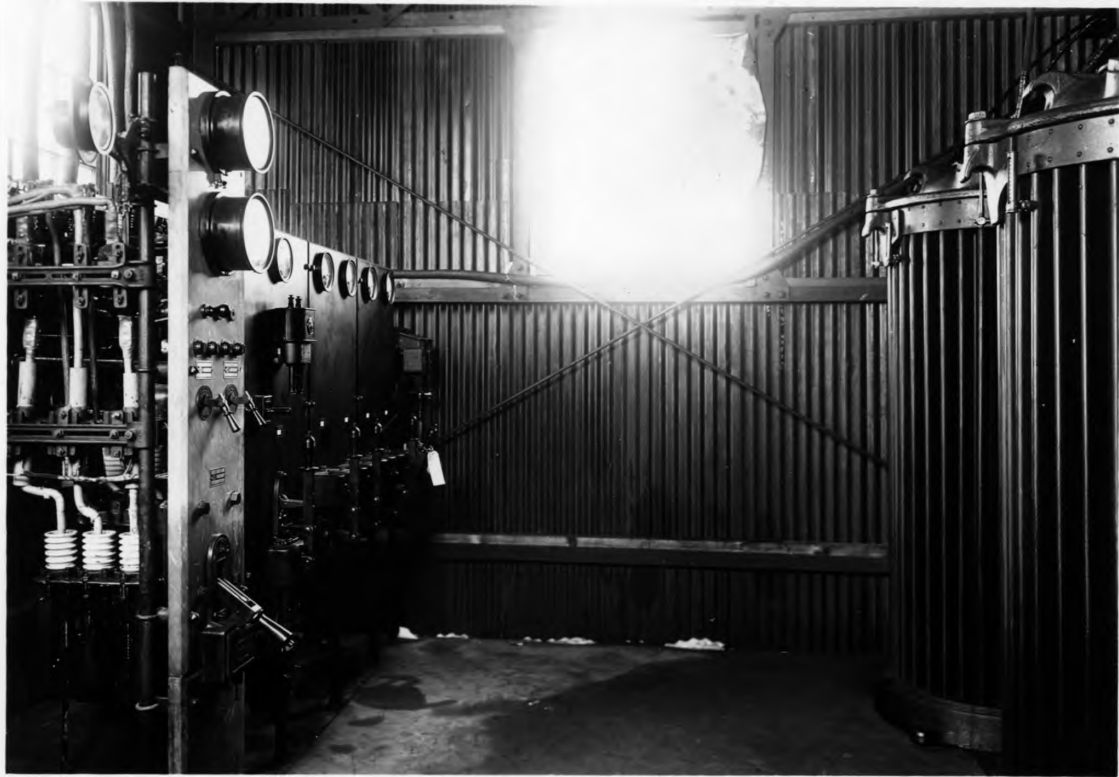


Plate No. 157

Interior of Switch House

Gwinn Substation

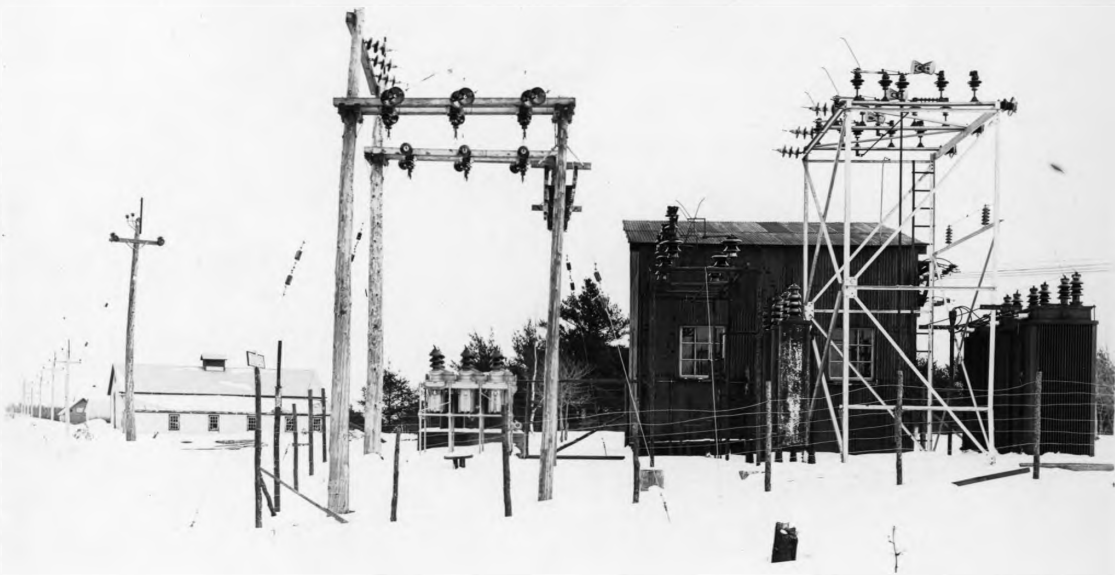


Plate No. 158

Gwinn Substation & Switch House

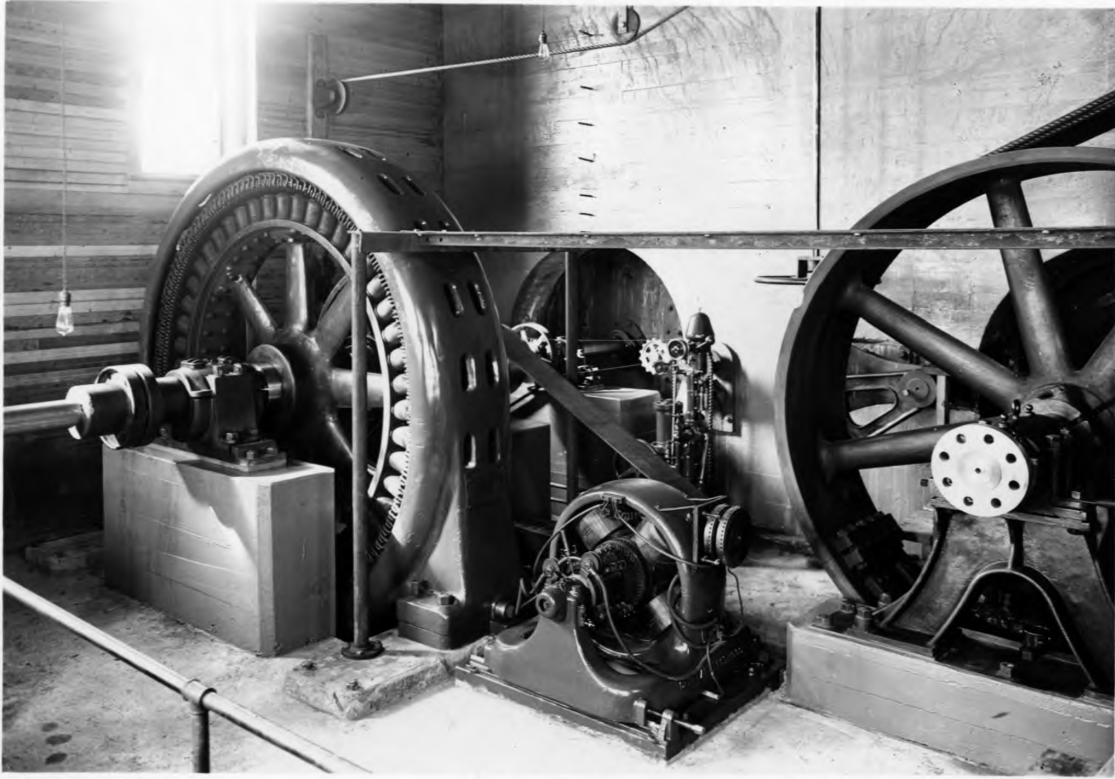


Plate No. 159

Generator

Republic Water Power Plant

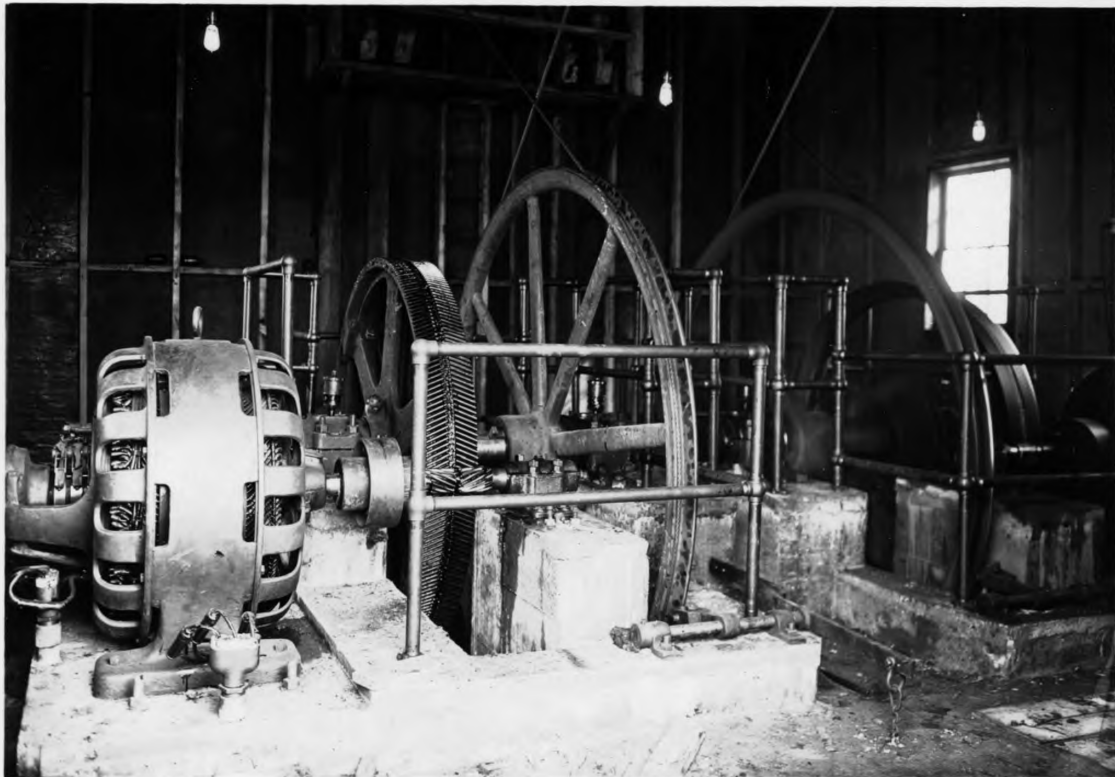


Plate No. 160

Top Tram Winding Engine

Negaunee Mine.

ANNUAL REPORT
(1917)
OF THE
SAFETY DEPARTMENT.

The Company employed last year an average of 3457 men and produced 3,251,880 tons of ore. Six fatal accidents occurred, which gives a fatality rate of 1.74 per 1000 employes and a production of 541,980 per fatality. This fatality rate is the lowest in the history of the Company with the exception of the year 1912, when it was 1.71, but the production that year per fatality was less, amounting to 482,477 tons. Since the inauguration of the Safety Department the average fatality rate is 2.59 per 1000 and the average for the seven years prior to safety work was 4.62.

The number of non-fatal accidents also were reduced; those which were so serious as to cause a loss of more than 14 days, and therefore received money compensation, were reduced from 86 per 1000 workmen in 1916 to 76 per 1000 last year. In August month the Michigan State Industrial Board rendered a ruling which requires that every accident, no matter how slight and whether the injured man lost time or reported to a physician, had to be reported. This necessitated reporting injuries which formerly were not reported. A total of 639 accidents were reported for the year, which is an average of 184 per 1000 employes as compared to 193 per 1000 in 1916. The total amount of money which was paid in consequence of all accidents, as compared with the Company's pay roll, is less than the amount for any previous year since the enactment of the Workmen's Compensation Law in 1913.

Labor conditions were not normal during 1917. The demand for iron ore created a demand for labor and when employment is easily obtained many workmen avail themselves of the opportunity to seek new jobs. Then too, the draft law and the unusual high wages being paid all employes, were also factors which caused men to shift from mine to mine in numbers

more numerous than during any previous year in the history of the local mining field. It is hoped that the satisfactory results of the past year will be an incentive to all to exert every effort so that better rates may yet be obtained.

The work of the department is herewith outlined.

MINE RESCUE EQUIPMENT AND TRAINING.

Equipment.

It is our custom with the beginning of each year to purchase such repairs as are deemed necessary to keep the rescue apparatus equipment in good condition for the balance of the year. Occasionally, however, some piece of rubber or metal will yield to wear or a flaw and it will be necessary to supplant it immediately with a new part. No new equipment was purchased last year but the amount of money spent in order to ~~xxxxxxxx~~ keep the equipment in first class condition are enumerated in this report. The cost of apparatus repairs amounted to \$7.81 per machine and the cost of repairs for pulmotors and lungmotors amounted to \$1.40 each.

A number of canaries were bought and at the present time one canary is kept with the rescue apparatus of each range.

Training.

Two years ago it was decided by the Central Safety Committee that a smoke room for training should be provided in each district. We have now but two of these buildings, one in the Gwinn district and one at Ishpeming. The building, which was formerly used at the Negaunee mine, was dismantled and the one at North Lake was recently removed to the Barnes & Hecker shaft for another purpose. The Ishpeming building is not entirely satisfactory because it does not hold smoke but we expect that Supt. Eaton will have it put in good shape this year. The rescue men from the Maas, Negaunee and Athens mines have been trained at Ishpeming since the Negaunee mine building was dismantled. Eleven rescue teams were organized and trained and in addition a number of the engineers took a limited amount of work. New teams were organized at the Holmes and Athens mines. One hundred and ten practices were given in which 79 men participated. Of this number 12 men were lost due to military service, not qualifying for the work, and because

SAFETY DEPARTMENT.

of leaving the employment of the Company.

FIRST AID EQUIPMENT AND TRAINING.

Equipment.

In December 1916 a special committee consisting of Stevenson, Eaton and Conibear, was appointed to make recommendations with reference to the proper condition and equipment of ambulance rooms in the Company's change houses. This committee submitted its report to the Central Safety Committee which, with several changes made in it, was adopted. The change houses at the Cliffs Shaft, Lake Salisbury, Holmes, Morris-Lloyd, Negaunee, Maas, Stephenson, Gwinn and Francis mines have been made to comply with these recommendations. In the meantime supplies have been ordered for the Princeton, Barnes & Hecker and Mackinaw-Gardner mines for a similar equipment. The recommendations of the committee are as follows;

EQUIPMENT.

A coat rack with six hooks.

A wall cabinet for first aid supplies.

A second cabinet with two large drawers; one for woolen blankets, six towels and four cotton sheets, the other for hot water bottles and sundry equipment.

One chair finished in white enamel paint.

One flat steel top table, white enamel.

One white porcelain hand basin and one two-gallon white porcelain bucket.

One army type stretcher and one "toboggan" stretcher.

SANITARY CONDITIONS.

The hospital room shall be completely partitioned off from adjoining rooms and doors opening to adjacent rooms shall be made close fitting to prevent dust entering the room.

In case there is a transom above an outside door, such transom shall be equipped to open at the top.

Each hospital room shall be equipped with hot and cold water and a white enamel sink approximately 12" x 24".

Each hospital room shall be painted as follows; Floor to be gray, concrete paint, which will withstand washing. Walls to have red enamel paint to a height of five feet above the floor line and white enamel paint above. Ceiling to have white enamel paint.

There shall be at least two incandescent lights in each room. One shall be portable and placed conveniently in the vicinity of the dressing table; the other shall be located at the most advantageous point for general lighting.

Windows opening to the exterior shall be provided with dark curtains and glass in lower sash shall be painted with a white coating to cut off the view of men who collect on the outside.

Rubber mats shall be provided for the floor and these shall be so placed to protect the usual lines of travel.

The door from the hospital room to the main "dry" shall be of the "Dutch" type, the upper half of which may be opened while the lower half remains closed. This arrangement will permit the dressing of trivial injuries without the actual entrance of the injured man into the room.

The key to the hospital room shall be in the possession of the dry keeper and a second key shall be kept in a glass case which may be broken in emergencies.

Our ambulance rooms are now a model for equipment and neatness.

Of course it is a difficult task to keep them in this condition because of their proximity to the dust which is created in keeping the change houses clean and also because there are occasions when men in dirty clothes must enter the rooms.

The first aid supplies, which are provided, are purchased from the American Red Cross and the Ishpeming Hospital. These supplies are standard equipment and are recommended by first aid authorities and local physicians, so that there is very little change from year to year. A special effort has been made to supply adequate equipment at machine shops, explorations and outlying works, such as new construction and water power development.

Training.

Nine first aid teams completed the Company's regular course and an exhibition was held at the Central Office on August 3rd. Drs. V. H. Vandeventer of Ishpeming and D. R. MacIntyre of Gwin and Annar A. Krogdahl of the Bureau of Mines were judges. Forty-nine received first aid certificates and souvenir watch fobs, making a total of 192 who have completed the Company's first aid training. Of this number 176 are in the employment of

the Company at the present time.

New teams were organized but it was decided that at those mines where there are already a large number of first aid men to combine two teams in one in order to train teams at the new mines and keep up monthly training at all mines. The Salisbury and Lake mines, the Athens and Negaunee mines, the Stephenson and Austin mines and the Gwinn and Francis mines were combined in supplying men for one team each. Complete teams were organized at the Mackinaw-Gardner, Holmes, Maas, Cliffs Shaft, Morris-Lloyd and Republic mines.

The United States Bureau of Mines Rescue Car No. 7 again returned to the Lake Superior District. It was stationed at Ishpeming, Negaunee and Gwinn during July and August. The foreman of the car visited a number of our mines and inspected the training which we are giving to our rescue men. Most of our men passed the Government examination which will make them eligible to receive first aid and mine rescue certificates.

Table I.

Showing the number of Helmet and First Aid Practices and the number of men receiving training at mines during year.

Mine	First Aid Practices	No. of Men Trained	Helmet Practices	No. of men Trained
Cliffs Shaft	12	10	12	3
Lake	12	9	12	3
Holmes	4	5	4	3
Salisbury	12	7	12	4
Morris-Lloyd	12	14	10	9
Negaunee-Athens	12	14	15	15
Maas	12	10	11	6
Stephenson-Austin	12	10	9	10
Gwinn-Francis	12	10	11	10
Mackinaw-Gardner	4	5		
Republic	11	12	11	10
Engineers	12	6	3	6
So. Jackson Crusher	1	1		
	128	113	110	79

Table II.

Showing Occupation and Nationality of Mine Rescue
and First Aid Men Receiving Training During 1917.

<u>Occupation</u>	<u>Helmet</u>	<u>First Aid</u>	<u>Nationality</u>	<u>Helmet</u>	<u>First Aid</u>
Shift Bosses	18	11	Americans	13	31
Miners	26	26	English	25	31
Timbermen	7	6	Scandinavians	15	19
Pumpmen	3	4	French	8	16
Motormen	3	4	Italians	9	6
Electricians	3	2	Finnish	7	7
Trammers	3	6	Miscellaneous	2	3
Cage Riders	2	3		79	113
Surface Foremen	1	3			
Top Landers	1	2			
Mechanics	1	6			
Motor Brakemen	1	1			
Pipemen	1	1			
Trackmen	3	0			
Underground Laborers	0	1			
Mining Engineers	6	6			
Drymen		9			
Clerks		6			
Surface Laborers		5			
Chemists		3			
Blacksmiths		4			
Miscellaneous		4			
	79	113			

Table III.

Showing Total Number of First Aid Men Trained
1912-1917.

Number trained-----	305
" received certificates-----	192
" left service of Company-----	44
" deceased-----	2
" now employed-----	259

Table IV.

Showing Total Number of Mine Rescue Men Trained
1912-1917.

Number trained-----	197
" left service of Company-----	37
" disqualified-----	46
" deceased-----	2
" now employed-----	112

Table V, which follows, shows that two-thirds of the non-fatal accidents in Michigan were treated at the mine by first aid men and that there were 77 injuries which did not require treatment. From the information recorded in the accident reports it is evident that many of the other injuries were of such a nature that first aid treatment may not have been necessary, although this fact cannot be determined positively. Many injured workmen have not reported their injuries at the mine but have gone directly home or else to a hospital. We find that the number of injuries which should have received treatment at the mine or failed to receive it due to the absence of first aid men are very few. An effort is being made to have the shift bosses and mine clerks report all the information necessary for an accurate statement for 1918.

Table V.

Mine	Received Treatment	Treatment Not Necessary	Information Lacking
Athens	3	3	0
Cliffs shaft	65	11	16
Francis	12	5	2
Gwinn	36	4	4
Holmes	18	1	7
Lake	29	11	8
Maas	18	1	13
Mackinaw-Gardner	12	4	0
Morris-Lloyd	35	6	14
Negaunee	36	0	9
Republic	49	12	16
Salisbury	12	2	4
Spies	14	4	7
Stephenson	43	9	20
Miscellaneous	11	4	13
	<u>393</u>	<u>77</u>	<u>133</u>

SAFETY INSPECTION.

All the Company's mines in Marquette county were inspected periodically throughout the year by the safety inspector and the safety committees. The Spies Mine was inspected five times by the inspector but no inspections were made of the Meadow and Crosby Mines.

Foremen Committees.

A committee of shift bosses inspected the mines in this county in April and a second committee in October. The members of the first com-

mittee were John Ree of the Salisbury Mine, Peter Nordeen of the Gwinn Mine and Noah Hares of the Negaunee Mine. The second committee consisted of Thomas Tippet of the Morris-Lloyd Mine, Wm. Davey of the Maas Mine and Fred Upperstrom of the Republic Mine.

Workmen Committees.

There were no inspections last year by workmen committees. It was the opinion of the members of the Central Safety Committee that in view of the necessity of mining as large an output of ore as possible an inspection by the foremen's committee would cover the ground fairly well for the time. It was decided, however, that instead of a foremen's committee inspecting the mines during April, next year, a workmen's committee should be appointed and in the fall an inspection could be made by a foremen's committee.

Committee on Mechanical and Surface Equipment.

The Central Safety Committee appointed to act on this committee L. C. Moore, Assistant to the Master Mechanic, Arthur Olson, electrician of the Negaunee Mine, and Chris Hansen, surface foreman of the Athens Mine. An inspection of the mines in this county was made in June.

Central Safety Committee.

This committee met once each month throughout the year. When Mr. S. R. Elliott departed to take up military training Supt. G. R. Jackson became chairman.

Table VI.

The following table gives the number of foremen and workmen by mines, who have served on safety inspection committees since the beginning of safety work.

<u>Mines</u>	<u>Foremen</u>	<u>Workmen</u>
Athens	1	0
Austin	1	12
Chase	1	18
Cliffs shaft	5	33
Gardner-Mackinaw	0	3
Gwinn	2	24
Lake	4	33
Maas	6	21
Morris-Lloyd	5	33
Negaunee	6	33
Princeton	1	9
Republic	3	15
Salisbury	4	27
Stephenson	4	33
Shops, etc.	2	0
	45	294

GENERAL SAFETY PRECAUTIONS.

Rules and Regulations.

A new book of rules and regulations for mining captains and shift bosses was compiled by Mr. Moulton and the Safety Inspector early in the year. This book contains all rules and regulations which the Company has adopted covering underground operations. The books were made with leather covers and each owner's name is written on the outside in golden letters. Mr. Moulton and the Safety Inspector were designated to examine the bosses with the assistance of each superintendent when his captain and bosses were to be examined. On account of the many unusual duties which have been allotted to Mr. Moulton, brought on by the war, no examination has yet been made but the work is under contemplation and will be done as soon as Mr. Moulton can arrange to attend to it.

Hospital Rooms.

Messrs. Eaton, Stevenson and Conibear submitted a report in January covering the equipment of hospital rooms. Several changes were made by the Central Safety Committee and the General Manager then instructed the superintendents to make their hospital rooms comply with their report. An outline of this work has been given under first aid work.

Runner Gauge.

A standard gauge for measuring distance between runners of skip and cage compartments in shafts was adopted. The General Superintendent and the Safety Inspector made a blank report for the shaft foreman to fill out when runners are put in the shaft. The assistant chief engineer was instructed to test all runners in our various mines. This work was done systematically throughout the year and a complete record filed. Whenever tests were found to be abnormal the attention of the superintendent was called to them.

Underground Locomotives.

It was decided that an underground locomotive brakeman may use a carbide lamp instead of a lantern. This action modifies Rule 5, Motors, and was adopted because lantern globes are always breaking in wet places.

Prevention of Ice in Shafts.

The following rule for the operation of cages, skips and crossheads during freezing weather was adopted;

"During freezing weather, whenever possible, all cages, skips and crossheads, when idle should be kept down in the shaft or in some sheltered place where they will not be exposed to freezing temperature. If cages, skips or crossheads are exposed to freezing temperature for sufficient time to lower their temperature below the freezing point, or when there is ice in the shaft, such skips, cages or crossheads must be lowered to a point about fifteen feet above the bottom of the shaft and hoisted again to surface before men are allowed to ride thereon."

Careful precautions are being exercised at all mines to prevent accidents by skips, cages or crossheads freezing in shafts. In addition to the enforcement of the above rule, where necessary the tops of cage compartments in shafts have been covered, steam pipes have been placed in shafts and doors have been placed in levels near shaft stations to reduce the velocity of the descending air current in shafts.

Athens Mine Crosshead.

Messrs. Bush, Conibear and Eaton were designated by Mr. Elliott to inspect the crosshead which Mr. Jackson had designed for lowering stringers in the Athens Mine. This committee reported favorably upon the crosshead to Mr. McClure, who in turn reported to the Central Safety Committee.

Badger Bars.

The badger bar for prying railroad cars or a bar of equal efficiency was adopted in place of the so-called pinch bar, which had been used many years.

It is a new rule that brakemen must be instructed not to use a brake stick longer than 24 inches when braking railroad cars.

New Rule for Electricians.

Several accidents have occurred to electricians when working on wires because other workmen failed to observe the danger sign placed at switches. It was decided that an electrician must first lock switches before working on a trolley wire in order to prevent other workmen from turning current on.

Cage at Engine House Entrances.

Mr. Eaton recommended to the Central Safety Committee a wire cage for the inside entrances to engine house doors, which would not only prevent access to the building to strangers but would also prevent the blowing up of a plant by anybody with equal intent. The General Manager directed Mr. McClure to design a suitable cage and submit it to the Central Safety Committee.

Safety Suggestions.

Four safety suggestions were received last year, making a total of 60 received. Twenty-three suggestions were approved by the Central Safety Committee and watches were awarded to the men who offered them. The notices asking for suggestions were withdrawn early in the year and since then one safety suggestion was received and it was not approved by the Central Safety Committee.

Counterweight Balance in Shafts.

During recent years, when a counterweight balance for the cage and skip has been needed, a heavy 12" pipe has been installed in which the balance operates. When the Republic mine was taken over the skip in No. 9 shaft was in balance with a counterweight which ran in wooden guides. The changes, which were made in hoisting by our Company, necessitated a more substantial compartment for the counterweight and accordingly a heavy pipe has been installed. Prior to this installation a number of smash-ups occurred in the shaft which did considerable damage to the hoisting compartment and also the ladder road. The counterweights in "A" and "B" shafts, Cliffs Shaft mine, run in wooden guides, but pipe has been ordered to replace them. At the Spies and Mackinaw mines the cage is in balance with the skip. The same precaution must be taken with the counterweight as with a cage in order to prevent it freezing at the collar of the shaft when the weather is extremely cold.

SUMMARY OF MOST IMPORTANT SAFETY DEVICES ADOPTED IN 1917.

Athens.

Standard gates installed at shaft stations.

Repeating bell signals used.

Permanent trestle equipped with platforms, guard rails and toe boards.

New machinery in engine house properly guarded in accordance with rules.

Cliffs Shaft.

"A" shaft was repaired between collar and ledge. On account of sand the shaft is close-timbered but it was found to be in an unsafe condition due to weathering. Mr. Elliott and Capt. Rough were asked to inspect this condition by the Safety Inspector, and, later on, it was repaired.

Between the 10th and 15th levels, both shafts, the casing between the skip compartment and ladder compartment has been double boarded. In all other shafts the ladder road is adjacent to cage compartment and hence there is not as much danger of the casing breaking due to falling chunks of ore.

Between the 10th and 15th levels is a distance of 250 feet. The ore being mined at the present time below the 10th level, "B" shaft, is dropped to the 15th level. During the first part of the year workmen were in danger when the ore in this raise hung up because they had to go under to blast it loose. A new raise has been put up, paralleling the old raise, so that blasting can be done without exposing the men to this danger.

Additional sanitary toilets have been placed underground. They are cleaned more frequently and regularly, and improvement is evident.

Sanitary toilets in dry-house were completed and old surface buildings were removed.

Wire fence and guards were erected across the highway under the hoisting cables at west entrance to engine house.

Steam pipes were strung along runners in both shafts from the surface to a safe distance below freezing zone. The air circulation in mine can now be controlled and upcast draft is turned periodically from shaft to shaft.

Water column glasses of boiler plant have been equipped with a practical guard which was designed by the mine mechanic. This guard has been recommended by the safety inspector for adoption at other plants.

The wiring in crusher was inspected thoroughly and a number of important changes were made.

Francis.

The skip compartment is cased off from the cage compartment between the collar and dump but not on the sides as yet.

On the completion of shaft sinking the ladder road was put in first class condition.

Shaft stations have been equipped with permanent gates, lights, signal codes, etc.

The permanent trestles and platforms in headframe have been fully equipped with guards and toe rails.

Gwinn.

Derailing devices were installed at the 7th and 8th level stations.

Ropes have been swung across pocket openings at the 5th and 7th level stations, in addition to gratings.

A winze was sunk and all safety precautions were installed.

Machinery in new machine shop properly protected.

New surface transformer plant fenced in and danger signs put up.

The belting of driving shaft of crusher guarded.

Shift bosses' room equipped with shower bath. Exposed steam pipes covered with asbestos.

Gardner-Mackinaw.

Moving machinery in shop protected.

Double doors, operated by air, installed at the top landing of Gardner shaft, where sinking is in progress.

Careful attention is being given to the installation of runners in both shafts, inspection reports being made.

Ladderways in both shafts have been put in perfect condition and gates placed at shaft stations as soon as working conditions permit.

Holmes.

Two doors for controlling air current were erected in the second level drift near shaft, following the plan which has worked out so satisfactorily in the Lake Mine. In addition the cage compartment at the collar of shaft is usually kept sealed. No difficulty has been encountered by ice accumulating in shaft.

A concrete pillar built on the second level station to support the roof.

A derailing device installed in tunnel.

Skip compartment of shaft cased off completely from the cage compartment from collar to dump.

Guard rails around shaft ^{collar} have been replaced by standard gate and a casing which presents a neat condition for inspection of visitors.

Permanent machinery in new engine house well guarded. Hoists equipped with overwinding and slack rope devices.

Moving machinery in connection with crusher, platforms, openings, pits, etc. are guarded.

Permanent trestles equipped with platforms, toe boards and guards.

Lake.

Two new sub-levels were developed adjacent to the Lake Superior boundary line and the safety rule, which requires a hole bored in advance of drifting, was followed. The water head in the abandoned workings have been gradually reduced and the danger of an inrush of water is almost passed.

Sanitary toilets in dry-house were completed and workmen have been highly pleased with this evidence of the Company's interest in their welfare.

The old passageway to main entrance of engine house was rebuilt.

The hot well for boiler blow out was reconstructed.

Morris-Lloyd.

Miners now put in their own timber, which was formerly done by timbermen. There is less chance for workmen to expose themselves to unprotected ground. This change in doing the work has resulted in less waste in nails.

All the stations in sec. 6 shaft have been equipped with derailing devices.

A new rock dump was erected at the Morris shaft and rock is dumped in haulage cars instead of being trammed.

The wiring around shaft-house was overhauled and high tension wires were carefully protected.

Pass.

New pump station made fireproof.

Refuge place made for skip tender, who works in the bottom of winze.

A top tram transfer building was erected and additional lights placed on top tram.

Belting, moving machinery, platforms and permanent walks at new crusher properly guarded.

Repairs were made in cage hoist.

The collar of shaft was cleaned and numerous changes made in order to make it more tidy and safer.

Repeating bell signals used.

The grindstone was condemned and a new one ordered.

Negaunee.

Cage bell levers have been placed near shaft so cage rider can reach them from within the cage. Repeating signals used.

The practice of opening boxes of dynamite at shaft stations has been abandoned.

The headframe has been inclosed which adds to the efficiency of workmen as well as to their comfort and safety.

No. 2 shaft is used in the summer time only. A cage was installed, which eliminates a climb of 500 feet for 30 employes. Arrangement has been made so that tools can be hoisted up a raise instead of the necessity of carrying them by workmen.

Strong supports were placed under water tanks in dry-house.

The grindstone was in an unsafe condition and was overhauled.

A number of changes were made in the engine house and around surface, which added to the safety of conditions, such as new platforms in engine house, repairs around collars of shaft, etc.

Republic.

A pipe counterweight compartment was put in No. 9 shaft. The counterweight previously ran in guides which was very dangerous because it broke away frequently.

A new generator was installed at the end of the year, which results in a steady current. It is now possible to keep shaft stations and pump houses lighted.

Since the completion of counterweight pipe the ladderway in shaft is being overhauled and put in good shape, but the work is not completed.

Level stations have been renumbered in order to avoid confusion resulting from a large number of abandoned stations.

The underground wiring has been overhauled in places, but it is not in first class condition. The bell signals also are not in first class condition but, if the life of the mine warrants the expenditure of money involved, this work will be done in the near future.

Moving machinery and unprotected places in engine house, crusher, building, dry-house and water power plant were protected.

Salisbury.

The engineers and brakemen of the Salisbury Mine have complained each winter, since the electric plant was established, that the building was too cold. In the fall the size of the building was considerably reduced and this complaint is no longer heard.

The passageway between the 5th and 8th levels, which became poor when the upper levels were idle, has been overhauled.

The workmen employed on the 14th level, mining the new ore body, take lunch underground. On recommendation arrangement has been made to keep the lunch places sanitary.

Toilets and shower baths were placed in dry-house.

Spies.

Pump station was made fireproof.

The electrician for the Negaunee district visited the Spies Mine and overhauled the electrical equipment and wiring, making it conform with the National code.

Boilers were overhauled and badly needed repairs were made.

A new electric compressor was installed and the belting of the same protected.

The skip compartment of shaft was cased from the collar of shaft to dump. Stairways and platforms in headframe and crusher were guarded.

On recommendation the ladder roads between sub-levels were made safer for traveling.

Stephenson and Austin.

The old trestle at the Austin Mine was overhauled and many needed repairs made; also in the shaft-house.

Electric lights installed at shaft stations in the Austin Mine for the first time. Previously the lower stations had been lighted up by a wire running through from the Stephenson Mine.

SUPPLIES AND REPAIRS FOR MINE RESCUE AND FIRST AID WORK.

The supplies and repairs, represented by the money spent in Table VII, was charged to operative mines. These supplies consisted of oxygen, potash cartridges, first aid bandages and the necessary parts to replace worn out or broken portions of the rescue apparatus. The total amount spent in 1916 for similar supplies and repairs amounted to \$872.89.

Table VII.

Rescue apparatus supplies		\$268.85
" " repairs		195.31
Lungmotor repairs		15.40
	Total	<u>\$ 479.56</u>
First aid supplies		255.85
	Grand Total	<u>\$735.41</u>

EXPENSES OF THE SAFETY DEPARTMENT FOR 1917.

Table VIII.

Supplies.

Safety Inspection	\$175.19
Central Safety Committee	144.84
Committee on Fatal Accidents	7.60
Mine Rescue and First Aid	65.62
Total	<u>\$393.25</u>

Traveling.

Inspector	\$223.90
Mine Rescue Foreman	193.51
Inspection Committees	138.08
Central Safety Committee	44.32
Total	<u>\$599.81</u>

SALARIES

Total	\$5466.00
Grand Total	<u>\$6459.06</u>

ACCIDENTS.

Fatal.

When the Safety Department was organized a classification of the causes of fatal accidents which had occurred since 1898 indicated that the principle causes were accidents by (1) Falls of Ground, (2) Shaft Accidents, (3) Accidents by Explosion of Dynamite, (4) Railroad and Haulage Accidents, and (5) Miscellaneous Causes. The principle causes of the fatal accidents which have occurred since then are practically the same, the number which have occurred by railroad and haulage cars exceeding the number by the use of explosives being the only exception. Of the six fatalities which we suffered last year two were by falls of ground and were accepted as trade risk accidents. A miner in the Spies Mine was killed by falling down a raise and a pipeman met death in the Stephenson Mine shaft when attempting to get on the cage. These accidents are the first to occur by these causes during the past seven years. The other two accidents were caused by explosion of dynamite and attempting to get on haulage car.

FATAL ACCIDENTS.

No. 1. Mike Rodoman, a chuteman, was killed in the Meadow Mine on May 26th, 11:50 A. M., when he attempted to jump onto a train of cars which were being pulled to the shaft by a mule. Where he tried to get on the train happened to be the only narrow place in the drift and he was caught between a car and the side of the drift. Rodoman had been instructed not to ride on the train of cars to the shaft.

No. 2. D. Q. Rayburn, a miner, was killed in the Spies Mine on June 16th by falling down a raise. Rayburn and his partner were told to cover over the top of a raise, which had been put up from the third level to a sub-level above, a distance of about 30 feet. He did not obey orders and within an hour afterward a sprag, upon which he stood, broke and he fell to the bottom of the raise.

No. 3. Henry Pitila, a miner, was caught under a heavy slab of ground in the Cliffs Shaft Mine on Sept. 12th. Pitila and his partner were trimming the back in their stope but a slip, which could not be detected, permitted a large piece of ground to fall without warning.

No. 4. Gust Lisku, a miner employed at the Negaunee Mine, was killed on Oct. 15th by a fall of ground. Lisku was in a side drift scraping up a buggy of ore when the accident occurred. The central safety committee decided that this was a trade risk accident.

No. 5. James Dally, a pipeman, was thrown into the Stephenson Mine shaft, Dec. 8th, when he was in the act of stepping into the cage at the first level station. There was no bell signal at this station and the cage rider, who was on the second level, signalled the engineer to hoist the cage before he had allowed sufficient time for Dally and other workmen to enter cage.

No. 6. Arni Alanen, a trammer, was killed in the Lake Mine on Dec. 24th, shortly before quitting time for Christmas Eve. The miners in No. 2 contract did not obey the well-established rule which makes it imperative upon miners to warn other men in close proximity to danger to seek a place of safety before holes are set off.

Table IX.

Fatal Accidents in 1917.

<u>No.</u>	<u>Date</u>	<u>Mine</u>	<u>Name</u>	<u>Occupation</u>	<u>Cause</u>
1	May 26th	Meadow	Mike Rodoman	Chuteman	Caught between car and drift while attempting to get on car.
2	June 16th	Spies	D. Q. Rayburn	Miner	Fell down raise.
3	Sept. 12th	Cliffs Shaft	Henry Pitila	"	Fall of ground.
4	Oct. 15th	Negaunee	Gust Lisku	"	" " "
5	Dec. 8th	Stephenson	James H. Dally	Pipeman	Thrown into shaft while stepping onto cage.
6	Dec. 24th	Lake	Arni Alanen	Trammer	Fall of ground caused by a blast.

Table X.

Showing classification of fatal accidents for seven years prior to safety work and also for seven years of safety work.

	Trade Risk	Negligence of Company	Negligence of Workmen	Total
1904	2	0	2	4
1905	6	0	6	12
1906	4	1	5	10
1907	4	0	13	17
1908	3	2	1	6
1909	8	1	4	13
1910	6	5	8	19
Total	33	9	39	81
1911	2	1	2	5
1912	0	3	1	4
1913	3	1	7	11
1914	8	0	2	10
1915	5	0	0	5
1916	2	4	2	8
1917	2	0	4	6
Total	22	9	18	49

	1904-1910	1911-1917
Accident rate per 1000 employes	4.62	2.57
Tons of ore mined per fatal accident	178,602	333,940

Non-Fatal.

The number of non-fatal accidents reported to the Michigan and Minnesota State Industrial Boards was 633. We paid compensation on

264. The number of accidents and the rates per 1000 men employed, since the compensation law in Michigan and Minnesota was enacted, are as follows:

	1913	1914	1915	1916	1917
Number reported to states	514	443	427	592	639
Rate per 1000 employes	195	182	185	193	184
Number received compensation	201	179	155	263	264
Rate per 1000 employes	80	82	67	86	76

Table XI.

Showing Number of Accidents by Mines Reported to State from 1913 to 1917, and the Rates per 1000 Men Employed.

Mine	Number Reported to State					Rate per 1000 Men Employed				
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917
Athens	1	5	7	3	6	130	156	162	53	85
Austin					5					109
Cliffs shaft	78	49	43	89	93	267	164	138	247	248
Crosby				15	25				134	167
Francis			6	19	19			222	333	268
Gwinn	4	34	42	46	44	80	250	236	255	260
Gardner-Mackinaw					16					254
Holmes				31	26				413	183
Lake	82	45	42	47	49	239	183	161	165	148
Maas	35	22	9	19	32	130	98	90	81	107
Meadow				5	6				83	75
Morris-Lloyd	43	62	53	44	55	221	243	192	143	207
Negaunee	53	35	33	45	46	148	113	119	121	124
Republic		61	110	97	77		344	402	358	318
Salisbury	27	21	5	29	18	182	178	109	230	140
Stephenson	124	72	57	57	73	378	255	230	200	295
Spies				23	26				460	309
Miscellaneous	52	22	16	23	23	190	80	31	94	109

Table XII.

Showing Number Receiving Compensation Payments by Mines from 1913 to 1917, and the Rates per 1000 Men Employed.

Mine	Received Compensation					Rate per 1000 Men Employed				
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917
Athens	1	4	3	0	4	130	125	70	0	57
Austin					4					87
Cliffs shaft	32	17	19	47	44	112	52	60	130	117
Crosby				6	11				53	74
Francis			3	5	7			111	88	98
Gwinn	1	13	10	14	17	20	95	56	78	100
Gardner-Mackinaw					2					32
Holmes				15	8				200	56
Lake	37	26	18	23	28	110	105	69	81	84
Maas	16	14	5	14	12	58	62	50	60	40
Meadow				3	3				50	37

Table XII. (continued)

<u>Mine</u>	<u>Received Compensation</u>					<u>Rate per 1000 Men Employed</u>				
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917
Morris-Lloyd	19	15	22	25	16	98	58	79	81	60
Negaunee	17	25	17	32	31	48	80	61	86	83
Republic		23	26	25	22		130	100	92	91
Salisbury	12	6	0	14	8	81	50	0	111	62
Stephenson	37	26	25	25	30	121	92	101	88	121
Spies				6	12				120	143
Miscellaneous	23	4	5	9	11	85	12	22	37	52

The following table gives the number of accidents and also the number which were classified as preventable by the Central Safety Committee for the past six years:

Table XIII.

<u>Year</u>	<u>Number of Accidents</u>	<u>Preventable Accidents</u>	<u>Percent Preventable</u>
1912	207	51	25
1913	316	77	24
1914	443	118	37
1915	427	97	23
1916	592	120	20
1917	639	149	23

Table XIV.
CLASSIFICATION OF FATAL AND MINOR ACCIDENTS
FOR THE YEAR 1917.
BY THE CENTRAL SAFETY COMMITTEE.

I	TRADE RISKS, (INCIDENTAL & NON-PREVENTABLE)	Total	490
II	NEGLIGENCE OF COMPANY		
	1 Failure to Use Safety Devices Provided		0
	2 Failure to Use Proper Tools or Appliances Provided		2
	3 Violation of Rules		0
	4 Improper Act or Selection of Improper Method of Doing Work (By Foreman)		1
	5 Failure to Instruct Men as to Method of Doing Work and Hazards Incident Thereto		1
	6 Failure to Provide Safety Devices		5
	7 Failure to Provide Proper Tools, Appliances, or Place to Work		3
		Total	12
III	NEGLIGENCE OF WORKMEN:		
	(1 Failed to Use Safety Devices Provided		5
	(2 Failed to Use Proper Tools or Appliances Provided		2
A	INJURED MEN - (3 Violation of Rules		8
	(4 Improper Act or Selection of Improper Method of Doing Work. (By Workman)		46
	(5 Carelessness. (By Workman)		51
		Total	112
	(1 Failed to Use Safety Devices Provided		0
	(2 Failed to Use Proper Tools or Appliances Provided		0
B	OTHER WORKMEN - (3 Violation of Rules		4
	(4 Improper Act or Selection of Improper Method of Doing Work. (By Workman)		10
	(5 Carelessness. (By Workman)		11
		Total	25
		Grand Total	639

Table XV.

CLASSIFICATION OF NON-FATAL ACCIDENTS.
1917.

A. Fall of Ground or Timber.

1. By fall from back or side (drift, raise or stope)	86
2. By fall or run from chute	20
3. By fall of stray chunk or stick down raise or stope	2
5. By lagging, sprag or timber falling from back or side	4
Total	<u>112</u>

B. Shaft Accidents.

1. By falling down shaft	3
2. By rock or timber falling down shaft, etc.	3
3. By being struck or caught by cage, skip, bucket or tool	1
4. By falling from cage, skip or bucket	4
6. By cage, skip or bucket dropping	2
8. By miscellaneous causes	2
Total	<u>15</u>

C. Use of Explosives.

1. By explosion of powder	7
2. By fall of ground or timber due to blast	1
Total	<u>8</u>

D. Mine or Railroad Cars.

1. By being caught between cars or motor and drift	14
3. By squeezing finger, hand or foot between box and truck, car and drift, chute, etc.	28
5. By cars falling back or off track	5
6. By falling from car	1
7. By car running over foot	2
8. By being struck by car handle, car rebounding, etc.	2
9. By being struck by motor or car	5
10. By miscellaneous causes	3
Total	<u>60</u>

E. Miscellaneous Causes.

1. By falling down raise, stope or mill	7
2. By falling from ladder, trestle or stage, etc.	10
3. By falling with machine or tripod, drill breaking, etc.	10
4. By squeezing finger, hand or foot between pieces of timber, chunks of ore, etc.	80
5. By straining or wrenching arm, back, side or leg by lifting,	33
6. By chunk rolling down dirtpile, stockpile, off car, etc.	54
7. By being struck by glancing dirt, tool or timber, etc.	81
8. By being struck by pick, shovel, hammer, timber, etc.	25
9. By tools or material falling or slipping from hand, staging, or platform, etc.	27
10. By running nail into hand, foot or leg	11
11. By stumbling or slipping causing a fall, etc.	29
12. By catching finger, hand or foot in blocks, gears, struck by windlass, parts of machinery, etc.	21
13. By wrench or tong slipping causing a fall, etc.	4
14. By blood poison or infection from various causes	16
15. By contract with electric wire	3
16. By being scalded or burnt	7
18. By rope sliver in finger, etc.	7
19. By miscellaneous underground accidents	6
20. By miscellaneous surface accidents	7
Total	<u>438</u>

Grand Total 633

Table XVI.

CLASSIFICATION OF FATAL ACCIDENTS BY CAUSES

SINCE THE BEGINNING OF SAFETY WORK.

<u>A. Fall of Ground.</u>	1911	1912	1913	1914	1915	1916	1917		
1. By fall from back or side (drift raise or stope)	1	0	7	5	4	2	2		
4. By run of mud or sand	0	0	0	1	0	0	0		
Total	1	0	7	6	4	2	2	22	
<u>B. Shaft Accidents.</u>									
1. By falling down shaft	1	1	0	1	0	4	1		
2. By timber or rock falling down shaft	0	0	0	1	0	0	0		
3. By being caught or struck by cage, skip, bucket or tool	0	1	0	0	0	0	0		
Total	1	2	0	2	0	4	1	10	
<u>C. Use of Explosives.</u>									
1. By explosion of powder at working face	0	0	1	0	0	0	1		
4. By being overcome by gas	0	0	0	0	1	0	0		
Total	0	0	1	0	1	0	1	3	
<u>D. Mine and Railroad Cars.</u>									
1. By being run over by haulage car	0	1	2	0	0	1	0		
2. By riding or attempting to ride cars	0	0	0	0	0	0	1		
4. By being run over by railroad car	1	0	0	0	0	0	0		
Total	1	1	2	0	0	1	1	6	
<u>E. Miscellaneous Causes.</u>									
1. By falling down raise, stope or mill	0	0	0	0	0	0	1		
2. By falling from ladder, trestle or stage	1	1	0	0	0	1	0		
6. By asphyxiation due to mine fire	1	0	0	2	0	0	0		
15. By contact with electric wire	0	0	1	0	0	0	0		
Total	2	1	1	2	0	1	1	8	
								Grand Total	49

Table XVII.

CLASSIFICATION OF CAUSES OF FATAL ACCIDENTS

FROM DEC. 1ST, 1898 TO JAN. 1ST, 1918.

A. Fall of Ground or Timber.

1. By fall from back or side (drift, raise or stope)	60
2. By fall of chunk from chute	1
3. By fall of stray chunk or stick down raise or stope	1
4. By run of mud or sand	6
	<hr/>
Total	68

B. Shaft Accidents.

1. By falling down shaft	13
2. By rock or timber falling down shaft	3
3. By being struck or caught by cage, skip, bucket or tool	5
4. By falling from cage, skip or bucket	4
5. By falling from ladder in shaft	6
6. By being carried or pushed into shaft by car	3
7. By attempting to jump on or off cage, skip or bucket	3
8. By being struck by crosshead	5
	<hr/>
Total	42

C. Use of Explosives.

1. By explosion of powder	14
2. By premature blast	2
3. By fall of ground or timber due to blast	3
4. By being overcome by gas	2
5. By erysipelas resulting from blast	1
	<hr/>
Total	22

D. Mine and Railroad Cars.

1. By being caught by haulage cars	11
2. By riding or attempting to ride cars	3
3. By falling with car from trestle	3
4. By being run over by railroad car	2
	<hr/>
Total	19

E. Miscellaneous Causes.

1. By falling down raise	3
2. By falling from ladder, trestle or stage	4
3. By falling with machine or tripod	2
4. By being caught under pump rod	2
5. By supposing to have come in contact with trolley wire	2
6. By asphyxiation due to mine fire	3
7. By being pulled into sheave	1
9. By being ruptured	1
10. By contact with electric wire	1
	<hr/>
Total	19

Grand Total 170

Average percent of accidents by causes.

A. 40.00% B. 24.70% C. 12.94% D. 11.18% E. 11.18%

Table XVIII.

Fatal Accident Rates per 1000 Men Employed from 1904 to 1917 Inclusive.

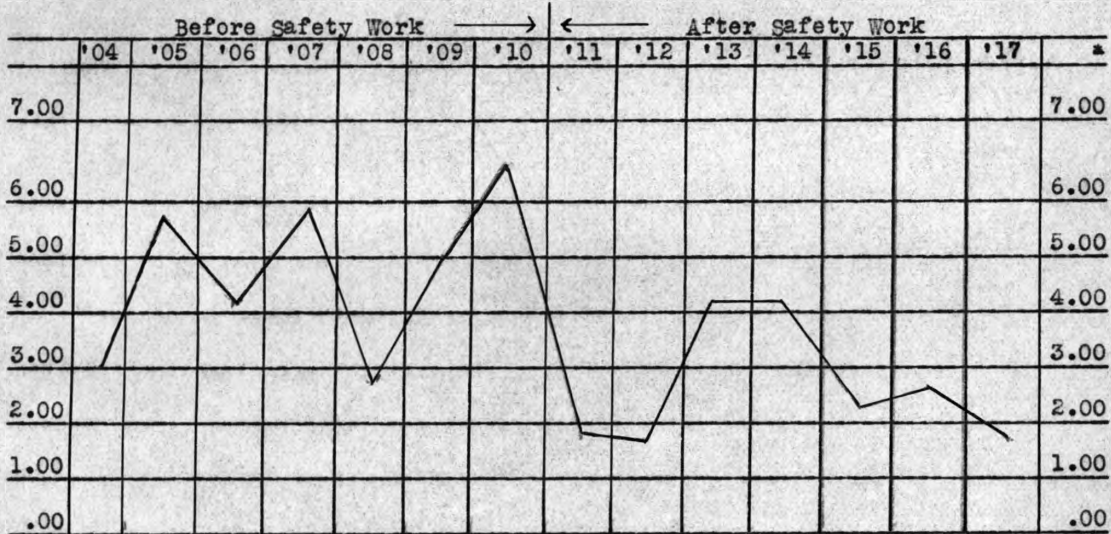
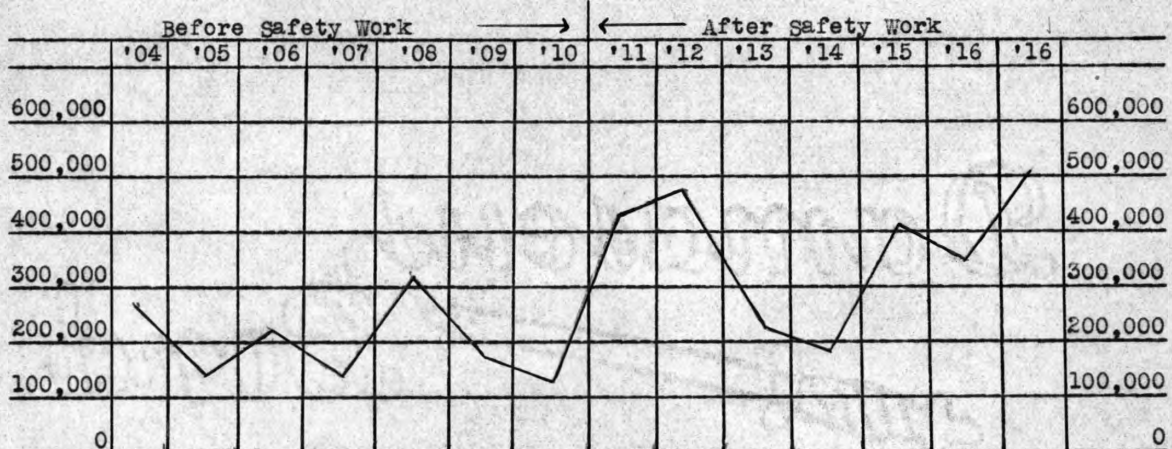


Table XIX.

Number of Tons of Ore Mined per Fatal Accident.



William Condit

ANNUAL REPORT
OF THE PENSION DEPARTMENT
FOR THE YEAR 1917.

* * * * *

PENSION SYSTEM:

The year 1917 completed the ninth year of the operation of the pension system.

During the year there have been the following additions to the pension pay-roll of the Mining Department:

		Date pen- sion began	Monthly Payment
No. 73	Nick Johnson	Jan. 1, 1917	\$ 15.00
No. 74	Wm. H. Quayle	Jan. 1, 1917	23.77
No. 75	William King	Feb. 1, 1917	15.85
No. 76	Robert McDowell	Aug. 1, 1917	30.23
No. 77	Gustave A. Holmgren	Aug. 1, 1917	20.21
No. 78	Charles Swanson	Sept. 1, 1917	21.85
No. 79	John Phillips	Sept. 1, 1917	15.00

The following pensions have ceased during the year:

No. 7	George T. Gentry	Pension began Feb. 1, 1912; Died August 9th, 1917.
No. 32	Sanna K. Koski	Pension allowed for six years; Expired August 31, 1917.
No. 38	Hilda M. Austin	End of five-year period, July 31st, 1917.
No. 39	Chas. A. Forsberg	Pension began Oct. 1st, 1912; Died May 1st, 1917.
No. 41	John K. Stevens	Pension began Nov. 1st, 1912; Died August 25th, 1917.
No. 71	Chas. Eckloff	Pension began Nov. 1st, 1916; Died Jan. 6th, 1917.
No. 74	Wm. H. Quayle	Pension began Jan. 1, 1917; Died July 27th, 1917.
No. 75	William King	Pension began Feb. 1st, 1917; Died August 10th, 1917.

PENSION SYSTEM(Continued)

In January 1917 a payment of \$100.00 was made to Mrs. Thos. Andrews, widow of Thos. Andrews, pension No. 59, as a re-imbusement for the funeral expenses of her husband. This payment was authorized by Mr. Mather in a letter dated January 29th, 1917.

Mrs. Austin re-married and consequently pension was not renewed.

The following table shows the number of pensioners on the rolls at the end of the years 1916 and 1917.

	Dec. 31, 1916	Dec. 31, 1917
Old Age pensions	39	40
Widows' and Orphans' pensions	$\frac{8}{47}$	$\frac{6}{46}$
Total number of Widows' and Orphans' on the pension roll:		

	Dec. 31, 1916	Dec.31 st , 1917
Widows	8	6
Orphans	$\frac{19}{27}$	$\frac{16}{22}$

The average yearly pensions were as follows:

	Dec. 31, 1916	Dec. 31, 1917
Old age	\$229.70	230.16
Widows and Orphans	176.37	175.92

There has been no change in the pension roll of the Furnace Department during the year.

	Dec. 31, 1916	Dec. 31, 1917
Old Age	\$ 268.20	\$ 268.20

Pension payments for the years 1909 to 1917 inclusive are as follows:

Mining Department:

<u>Year</u>	<u>Old Age</u>	<u>Widows' & Orphans</u>	<u>Total</u>
1909	\$ 351.92	\$ 464.00	\$ 815.92
1910	896.44	1043.00	1939.44
1911	1690.37	2649.00	4339.37
1912	3865.95	3113.00	6978.95
1913	5133.62	3025.00	8158.62
1914	6179.57	3403.00	9582.57
1915	7910.35	2372.00	10282.35
1916	8787.02	1694.00	10481.02
1917	9227.22	1366.00	10593.22
Total	\$44042.46	19129.00	63171.46

Furnace Department:

<u>Year</u>	<u>Old Age</u>	<u>Widows' & Orphans</u>	<u>Total</u>
1910	111.75		111.75
1911	268.20	120.00	388.20
1912	268.20	180.00	448.20
1913	268.20	180.00	448.20
1914	268.20	180.00	448.20
1915	268.20	180.00	448.20
1916	268.20	60.00	328.20
1917	268.20		268.20
Total	1989.15	900.00	2889.15

PENSION SYSTEM: (Continued)

Total amount paid to Old Age pensioners, 1909 to 1917 inclusive:

Mining Department	\$ 44042.46	
Furnace Department	<u>1989.15</u>	
		\$ 46031.61

Total amount paid to Widows' and Orphans, 1909 to 1917 inclusive:

Mining Department	\$ 19129.00	
Furnace Department	<u>900.00</u>	
		<u>20029.00</u>
Total Pensions Paid		\$ 66060.61

The following statements show a comparison between the amounts paid for pensions during the nine years and the estimated possible payments for the same period, this estimate having been made in 1908.

Mining Department:

Old Age Pensions:

Estimate for 1909 to 1916 inclusive	\$ 44830.50
Estimate for 1917	<u>7958.50</u>
Total	51789.00

Widows' and Orphans:

Estimate for 1909 to 1916 inclusive	16200.00
Estimate for 1917	<u>3420.00</u>
Total	19620.00
Total Estimate	71409.00

Total amount paid from 1909 to 1917 inclusive:

Old Age pensions	\$ 44042.46
Widows' and Orphans' pensions	<u>19129.00</u>
Total Payments	63171.46

The pensions paid for Old Age for the year 1917 were \$1268.72 more than the estimate for that year made in 1908, but the total amount paid since the beginning of the system is \$7746.54 less than the estimated possible amount required up to and including

PENSION SYSTEM: (Continued)

December 31st, 1917.

The pensions paid to widows and orphans are less than the amount estimated for 1917 on account of the fact that no new pensions for widows and orphans were added to the roll after the Compensation Law went into effect. There is, therefore, no real comparison in this item, but it is put into the report for reference only.

Old Age Pensions estimated for 1917	\$ 7958.50
Old Age Pensions paid in 1917	9227.22
Widows' & Orphans pensions estimated for 1917	3420.00
Widows' & Orphans pensions paid in 1917	1366.00

During the year 1918 the following Widow and Orphans pension will cease unless renewed by action of the Pension Board.

No. 21 Widow and 2 children of Henry Hill. Expires Apr. 30, 1918.

The five remaining Widows' and Orphans pensions expire November 30th, 1920.

The pensioners living in Ishpeming come to the office each month for their pensions and the visiting nurses at Negaunee and Gwinn personally deliver the pensions to those living there.

At the end of the year the pensioners were in fairly good condition with the exception of Andrew P. Peterson, pension No. 37, who is getting quite feeble, but was sufficiently well to go to Chicago to spend the winter with one of his relatives. Also, Patrick Kennedy, pension No. 42, who had been generally well until the fall, was very feeble at the end of the year and was not able to leave the house.

As shown on the sheet, six of our pensioners died during the year, as compared with two in the preceding year.

PENSION DEPT.

PENSION SYSTEM: (Continued)

The Furnace Department pay-roll has remained the same as it was at the beginning of the year, just one pension, it being that of Wm. H. Fuller. Mrs. Wightman, who was formerly on the roll, I have seen once or twice during the year and she has reported that she was getting along all right.

On the following sheet is the annual statement of the pension fund, this showing a balance of \$98761.46 on hand December 31st, 1917.

The interest on the fund last year amounted to \$3392.74, which is a considerable proportion of the pensions paid.

I believe it would be desirable to increase the minimum pension allowance from \$15.00 to \$18.00 per month.

The following statement shows the contributions to the pension fund by the different Departments since the system went into effect on January 1st, 1909.

Year	MINING	FURNACE	LAND	LUMBERING	PAYMENTS
1909	7916.89	1628.21	555.17	1274.51	815.92
1910	12440.52	1899.59	447.54	1824.75	2051.19
1911	11168.41	1782.00	494.48	978.77	4727.57
1912	9690.71	1854.42	497.43	1152.35	7427.15
1913	11486.56	1754.91	529.55	1742.11	8606.82
1914	10447.19	1278.20	568.69	1426.87	10030.77
1915	9631.29	1648.30	478.15	1284.70	10730.55
1916	14985.44	2663.56	745.46	1691.12	10809.22
1917	20602.01	3798.79	951.19	2300.85	10861.42
	108369.02	18307.98	5267.66	13676.03	66060.61

THE CLEVELAND CLIFFS IRON CO.,
ANALYSIS OF "PENSION FUND" for year 1917.

	MINE	LAND	FURNACE	LUMBERING	INTEREST ALLOWED AT CLEVE. OFFICE	PAYMENTS
CREDITS SET UP						
DURING YEAR:						
January	1,525.54	79.57	265.24	180.28		1,018.10
February	1,400.95	68.68	240.62	152.53		918.95
March	1,576.79	73.88	262.11	157.63	786.18	918.95
April	1,409.07	70.54	247.77	113.03		918.95
May	1,792.34	69.56	284.72	247.99		894.24
June	1,753.23	85.06	271.85	202.54	816.28	894.24
July	1,749.84	89.34	322.22	211.46		894.24
August	1,866.14	91.89	358.04	210.78		906.91
September	1,687.43	89.40	335.59	187.46	871.67	837.36
October	2,078.15	88.31	384.19	198.53		837.36
November	1,930.71	75.68	407.36	224.01		947.91
December	1,831.82	69.28	419.08	214.61	918.61	874.21
	20,602.01	951.19	3798.79	2300.85	3392.74	10861.42

SUMMARY.

Balance Dec. 31, 1916 78577.30

CREDITS SET UP DURING 1917:

Mine Department	20602.01
Land "	951.19
Furnace "	3798.79
Lumbering	2300.85
Int. allowed at Cleve. Office	3392.74
	109622.88

Less payments made during year	10861.42
Balance end of year	98761.46

WORKMENS' COMPENSATION:

The handling of compensation cases has continued very satisfactory in every way, special pains being taken to see all injured men promptly. There have been, as usual, special cases that require considerable attention in settlement, but these have all been satisfactorily adjusted by Mr. Bargh with one exception at Republic in which an agreement has not been reached. This is the case of Uno Ollilla, Accident Report No. 317, causing the loss of two fingers and permanent injury to another finger.

Under the rulings of the Industrial Accident Board made during the year 1917 all accidents however trivial must be reported. Previous to this the ruling was that any accident which did not cause the loss of over one days' time was not reported. This has increased the number of reported accidents in comparison with previous years' statements.

Certain lump sum payments have been ordered by the Industrial Accident Board during the year as follows:

Bortolo Pesenti	Stephenson Mine	Acc. Rept. 344	\$2556.34
Ermon Nocenti	Stephenson Mine Final Payment	" " 295	138.13
Ferdinand Gronzotto	Maas Mine Final Payment	" " 85	300.67
Emil Ringuette	Republic Mine	" " 234	1137.30
Hannah Keskimaki	Widow of Isaac Keskimaki, accidentally killed at the Holmes Mine, Acc. Rept. #27, Advance lump payment,		1500.46

These payments were made according to the provisions of the law on the basis of present worth at 5%.

Lump sum payments can only be made when there are some special reasons for so doing, which by the rules of the Board must usually antedate the time of the accident.

We have had no disagreements during the year requiring any Board hearings or arbitrations.

One of the interesting cases reported in 1916 was that of Bortolo Pesenti, who was injured at the Stephenson Mine on March 4th, 1916, losing

WORKMEN'S COMPENSATION: (Continued)

the sight of both eyes. He was taken to New York in January of this year by Mr. Bargh and was sent home. He sailed on an Italian Troop ship from New York on January 24th, arriving safely in Genoa, and, from letters received, is getting along very well.

John Kneebone who was injured at the Republic Mine on July 28th, 1914, was in serious condition for some months and died on April 21st, 1917. The balance of compensation payments are being made to his widow.

On the following sheet will be found a list of the cases of serious injury which have occurred during the year. In this list are all of the non-fatal accidents for which compensation payments have been made amounting to \$100.00 or more.

WORKMEN'S COMPENSATION: (Continued)

Serious Non-Fatal accidents for which compensation payments of \$100.00 or over have been made.

	Acc. Rept. No.	Nature of Injury	Compensation Paid
<u>Cliffs Shaft</u>			
Wm. Roustala	323	Loss first finger	350.00
<u>Lake Mine:</u>			
Andrew Erickson	249	Bruised shoulder & knee	118.33
Gehard Palo	259	Contused foot	165.00
Wm. Uren	260	Infected finger	108.29
Tobias Dahl	277	Fractured ankle	100.00*
<u>Morris-Lloyd Mine:</u>			
Tony Cassarini	241	Severed tendon of finger	175.00
Ole Nelson	247	Fractured leg	290.00*
<u>NEGAUNEE MINE:</u>			
Matt Carlson	188	Fractured leg	275.31
Miile Kempinen	192	Lacerated hand	239.25
John Chirio	199	Loss of hand	381.42
Henry White	212	Injury to abdomen	191.80*
Angelo Sartori	219	Fractured leg	140.00*
Frank Carilli	220	Broken back	140.00*
Frank Dionne	221	Fractured skull	120.00*
<u>MAAS MINE:</u>			
H. A. Hendrickson	111	Loss first finger	300.65
John Dowen	115	Fractured leg	220.00
Peter Koski	116	Fracture of leg	343.35*
<u>ATHENS MINE:</u>			
Ole Hoid	19	Injury to chest	115.42
<u>STEPHENSON MINE:</u>			
Nick Detona	392	Loss of eye	521.74*
Gust Yoki	393	Fractured leg	322.27*
<u>GWINN MINE:</u>			
Oscar Wirtanen	134	Fractured leg	181.67
Sam Romelli	150	Loss fourth finger	110.00
<u>AUSTIN MINE:</u>			
John Bargiga	47	Eye Injury	140.00
Tom Bargiga	48	Loss of half finger	100.00
<u>FRANCIS MINE:</u>			
Batista Forchini	32	Fractured skull and arm	275.00
<u>REPUBLIC MINE:</u>			
John Powers	279	Fractured elbow	489.02*
Ed. Van Langenhoven	281	Electric burn of finger	189.62
Uno Ollilla	317	Loss of two fingers	263.33*
<u>CROSBY MINE:</u>			
John Stanovich	208	Crushed foot	122.00

* Payments not completed on December 31st, 1917.

WORKMEN'S COMPENSATION: (Continued)

The following fatalities occurred during the year:

Mike Rodoman

Meadow Mine, Acc. Rept. No. 9,
Occurred May 26th, 1917. Single.
Amount of payment, \$290.74.

David Q. Rayburn

Spies Mine, Accident Report No. 34.
Occurred June 16th, 1917. Married;
four children. Compensation for
300 weeks at \$10.00 per week.

Henry Pitila

Cliffs Shaft Mine, Accident Re-
port No. 351. Occurred Sept. 12th,
1917. Married; six children.
Compensation for 300 weeks at
\$10.00 per week.

Gust Lisku

Negaunee Mine, Accident Report
No. 225. Occurred October 15th,
1917. Married; five children.
Compensation for 300 weeks at
\$10.00 per week when dependency
is established.

James Henry Dally

Stephenson Mine, Accident Re-
port No. 433. Occurred Decem-
ber 8th, 1917. Married; no
children. Compensation for
300 weeks at \$10.00 per weeks.

Arni Alanen

Lake Mine, Accident Report
No. 293. Occurred December
23rd, 1917. Single; con-
tributing to support of parents.
Compensation for 300 weeks at
\$ 5.00 per week.

WORKMEN'S COMPENSATION: (Continued)

The annual statement which is attached gives the number of accidents which occurred during the year at the different mines, showing the number for which compensation was paid and the number for which no compensation was paid, the latter being for those accidents which caused a loss of less than two weeks' time. The report shows that there were 633 non-fatal accidents, 264 receiving compensation and 369 receiving no compensation.

For the last three years the report shows the following:

Of the accidents that occurred in 1915, 36.3% received compensation.
Of the accidents that occurred in 1916, 43.7% received compensation.
Of the accidents that occurred in 1917, 41.7% received compensation.

The sheet shows all payments made during the year on account of accidents which had occurred in 1917 and also those which had occurred in the years 1913, 1914, 1915, and 1916, and the amounts still due in these cases by mines.

In all accident cases for which a definite amount is still to be paid these amounts are set up in the column "Compensation still pending." In serious cases continuing beyond the end of the year an estimate of the probable duration is made up, based on the physicians' reports.

The total amount of compensation to be paid after December 31st, 1917 is \$52,909.95, of which there is pending for 1913, 1914, 1915, and 1916, \$29,822.78.

The compensation for the accidents which occurred in 1917 including the payments made to physicians during 1917 amounts to .012689 of the pay-rolls for the year.

The same rate of payments to the physicians has been continued throughout the year, this being 35 cents per man per month.

The payments on account of Workmen's Compensation, including the payments to the physicians, are given in the following table for the years 1912 to 1917 inclusive.

WORKMEN'S COMPENSATION: (Continued)

Year	Cleveland-Cliffs Iron Co.,	Negaunee Mine	Athens Mining Company	Total
1912	1075.91	105.08	.30	1181.29
1913	13149.70	1152.87	27.15	14329.72
1914	27416.82	2842.13	446.03	30702.98
1915	15657.71	1699.28	656.07	18013.06
1916	32404.74	3496.75	672.29	36573.78
1917	<u>45129.92</u>	<u>5301.30</u>	<u>911.46</u>	<u>51342.68</u>
	134834.80	14595.41	2713.30	152143.51

As arranged for and begun in 1915 the compensation payments, in fatal cases and in those other cases for which a definite total amount is to be paid, are charged to Personal Injury Accounts Payable. The following statement shows the balances due in the different accident cases for the years from 1913 to 1917 inclusive:

Balance due Personal Injury Accounts Payable Dec. 31st, 1917.

Year of Accident	Name of Dependent to whom compensation is payable		
1913	Martha E. Sackrider	\$	562.38
	Annie McCarthy		492.80
	Maria A. Linna		<u>404.25</u>
			1459.43
1914	Cornavetra Stefanelli		819.00
	August Allen		135.00
	Beatrice Frost		805.80
	Robert W. Creer, Guardian		811.92
	Hilda Juhola		250.80
	Ellen Kneebone		2084.88
	Sophie Kostamo		<u>1129.95</u>
			6037.35
1915	Sara Asplund		1379.40
	Anna Olson		853.16
	Elvura Hantula		<u>1393.70</u>
			3626.26

WORKMEN'S COMPENSATION: (Continued)

1916	Cecilia Mongiot	2136.61
	Cecilia Brandt	1673.24
	Victor Luoma	260.00
	Isabella Graham	2470.00
	John Kandelin, Guardian,	2470.00
	Mary Maki	2470.00
	Bartolo Pesenti	<u>1000.00</u>
		12479.85
1917	Annie May Dally	2980.00
	Nick Detona	259.48
	Herman Johnson	490.00
	Hanna Keskimaki	720.00
	Uno Ollilla	256.67
	Hilma Pitila	2860.00
	Nels Rajala	1177.02
	Anna Rayburn	2640.00
	Wm. Roustala	20.00
	Ferdinand Valenghi	<u>130.00</u>
		<u>11533.17</u>
	Total The Cleveland-Cliffs Iron Co.	\$ 35136.06
1913	Divina Mallett	542.64
1914	Mary L. (Barrett) Thompson	450.00
1916	Lilly J. Johnson	2230.41
1917	John Chirio	1095.36
	Amanda Lisku	n <u>3000.00</u>
	Total Negaunee Mine	7318.41
1914	Kati Larson	<u>1079.82</u>
	Total Athens Mining Company	<u>1079.82</u>
	Total all mines	\$ 43534.29

This department has been consulted frequently during the year by the other departments concerning different compensation cases.

WORKMEN'S COMPENSATION: (Continued)

The Industrial Accident Board has continued as it was at the close of 1916. Mr. Wm. M. Smith, Chairman, Mr. James A. Kennedy and Mr. Thomas B. Gloster. There has been a change in the secretaryship of the Board, Mr. Fred S. Johnson replacing Mr. Gilbert W. Dickson.

At the session of the State Legislature in Michigan in 1917 there were a number of bills proposed all of which contemplated some increase in the compensation to be paid. Active opposition was undertaken principally by the Michigan Manufacturers' Association and the Michigan Employers' Compensation Conference. A public hearing was held at Lansing on February 28th, which was attended by Mr. Wm. P. Belden and myself. The hearing was generally a very satisfactory one and the legislators seemed impressed with the idea that there should not be any radical changes made in the law at this time.

There was only one bill passed, just at the close of the session, this being at the suggestion of the Industrial Accident Board and provides for a different method of computing the compensation and reads as follows:

Section 11A: "The term "Average annual earnings" as used in this act is defined to be 52 times the average weekly wages of the employee as arranged for according to the provisions of this section."

Section 11B: "The term "Average weekly wages" as used in this act is defined to be 6 times the daily wages, salary or emolument, which the injured employee is earning at the time he suffers an accidental injury."

This is an improvement in the law as it makes the manner of computing the wages more definite and the increase in amount of compensation is slight over that secured by the former method of computation. The principal reason for this change in the law was that the employers were not uniform in their manner of arriving at the wages and in some cases the matter resulted in a controversy. This change went into effect on August 10th, 1917.

There was considerable agitation in Minnesota and numerous bills were introduced in the legislature providing for changes in the

WORKMEN'S COMPENSATION : (Continued)

compensation law. Some of the bills were very radical and a determined opposition was made by the Minnesota Manufacturers' Association. The law, however, was amended as follows:

1. The percentage of the wage payable is increased from 50 to 60%.
2. The maximum weekly compensation is increased from \$11.00 to \$12.00.
3. The following words were inserted in Section 13 after the words "mental faculties"; "or any other injury which totally incapacitates the employee from working at an occupation which brings him an income.
4. The waiting period is reduced from two weeks to one week.
5. No change is made in the compensation payable for death.

THE CLEVELAND-CLIFFS IRON COMPANY
STATEMENT OF COMPENSATION AND BENEFIT PAYMENTS FROM JANUARY 1ST, 1917 TO DECEMBER 31ST, 1917.

	No. of Employees	No. of Fatal Accidents	No. of Non-Fatal Accidents	Actual Com- pensation paid in 1917	1913	1914	1915	1916	1917	Compensation Still Pending	Actual Payments To Phy- sicians	Less 1916 Pending	Physicians Still Pending	Fatal Cases Pending	Injury Cases Pending	Benefit Payments
Personal Inj. Accts. Payable				16125.00	1204.32	2290.48	2003.99	8992.56	1633.65	35136.06						
Maas	296		12 20	1109.21			115.07	132.04	862.10	251.92	1288.70				2	373.00
Maas Crusher Plant	4		1 1	18.18					18.18		17.68					
Austin	47		4 1	271.67					271.67	320.00	412.04				1	134.83
Gwinn	177		17 27	717.25				68.17	649.08	10.00	821.30				2	277.47
Stephenson	258	1	29 43	1612.30			259.65	266.37	1086.28	334.32	1529.19				3	849.18
Princeton	18		2							83.33	95.37				2	7.33
Gardner-Mackinaw	63		2 14	6.67					6.67	20.00	266.71				1	13.67
Gwinn District Crusher	10		1	6.06					6.06		40.77					
Francis	71		6 12	370.00					370.00		266.34					252.33
Morris-Lloyd	265		16 39	1019.35				102.14	917.21	450.00	1242.34				2	197.81
Barnes-Hecker	8		3								26.95					
Jackson	36		1 4	86.35					86.35		166.79					69.17
Dead River-McClure Plant	15		2							38.13	56.58		14.00		2	
Dead River Water Power				81.90				81.90								
Carp River Water Power	37			81.90				81.90			56.36					
Dead River Storage Basin											2.80					
Lake	331	1	27 21	1690.05				477.32	1212.73	1624.68	1485.04			1	5	908.16
Cliffs-Shaft	375	1	43 49	1628.48			349.44	129.12	1149.92	589.60	1564.12				6	640.99
Salisbury	128		8 10	274.33				68.57	205.76		571.53					170.17
Holmes	142		8 18	1417.24				1248.97	168.27		655.38					647.50
Angeline	21		1								111.03					
Republic	243		22 55	2857.72				1673.69	1184.03	1631.94	1071.53				4	
Spica	84	1	11 14	205.90				12.53	193.37		360.79					
Central Office	148		4 1	102.21				41.52	60.69		622.12					111.67
Belleve Farm Exploration	5										29.75					
Pension Dept.	2										11.38					
Purchasing Dept.	3										25.03					
New Hospital	4										22.22					
Section 3 Exploration	3										7.00					
Section 4 Exploration	3										8.92					
Golf Club Exploration	4		1 1	11.67					11.67		14.36					4.67
East New York Exploration											3.50					
Jackson Exploration	1										4.38					
Union Park Exploration	1										4.72					
Crosby	150		11 14	686.23				346.63	339.60	359.00	695.35				6	
Meadow	82	1	2 3	804.33					804.33		360.85					
Au Train Power Plant			1								7.00					
Personal Inj. Accts. Payable				1615.94	335.92	520.00		469.56	290.46	7318.41						
Negamee	371	1	30 15	2034.21				442.02	1592.19	3662.74	1651.15				6	423.19 (a)
Personal Inj. Accts. Payable				445.64		445.64				1079.82						
Athens	71		4 2	170.41					170.41		295.41					
Total	3457	6	264*369**	35450.20	1540.24	3256.12	2728.15	14635.01	13290.68	52909.95	15892.48	0.00	14.00	1	42	5081.14

Note:-

* Denotes accident reports on which compensation payments were made.

** Denotes accident reports on which no compensation payments were made.

(a) Above payment of \$423.19 wiped out the Negamee Mine Benefit Fund. In order to pay men on the Benefit Fund payroll when the Fund was exhausted in July 1917 additional payments of \$95.15 were made which were charged to Gratuities.

Compensation paid on 1917 accidents - - -	13290.68
Compensation still pending - - -	52909.95
Cost of medical and hospital services - - -	15906.48
	82107.11
Less pending for years 1913, 1914, 1915 and 1916	29822.78
	52284.33
Percentage of payroll	.012689

BENEFIT FUNDS:

These funds are paid out in cases of actual injury to the men who were employed by us previous to August 1st, 1912 and who had contributed to the Benefit Funds. No collections on account of Benefit Funds were made after July 31st, 1912.

The Benefit Funds of The Cleveland-Cliffs Iron Company will last for a great many years if paid out on the present basis. This is at the rate of \$20.00 per month to the single men and \$25.00 per month to married men, no payment being made for the first five days.

In the case of a fatality to a man who had contributed to these funds \$500.00 is paid to the widow or other dependents and for the loss of a member or for an eye \$166.66 is paid.

On the following sheets is found a statement of the disbursements of these funds from September 1st, 1912 to December 31st, 1917. There is also shown the credit to the fund by interest allowed. These sheets show a disbursement during the year 1917 of \$5081.14 and a balance on hand December 31st, 1917 of \$45728.34.

During the year 1917 Benefit payments were made to the following number of men:

Austin	4
Central Office	1
Cliffs Shaft	31
Diamond Drill	1
Francis	8
Gardner	1
General Storehouse	3
Gwinn	12
Holmes	12
Jackson Crusher	4
Lake	31
Maas	8
Mackinaw	1
Morris Lloyd	18
Negaunee	10
Princeton	1
Salisbury	7
Stephenson	<u>33</u>
Total	186

Of the 633 men injured 186 received Benefit payments.

CONDENSED STATEMENT OF
BENEFIT FUNDS
ALL COMPANIES

CREDITS TO FUND

January 1st, 1912 Balance		65194.67
1912 Contributed by men		6182.50
1913 No Credits		
1914 Interest C. C. I. Co.	3511.43	
" C. I. M. Co.	1096.69	
" I. C. Co.	832.01	
" Negaunee	301.83	
" Athens	1.11	5743.27
1915 Interest C. C. I. Co.	2083.85	
" Negaunee	55.25	2139.10
1916 Interest C. C. I. Co.	1949.27	
" Negaunee	32.65	1982.12
1917 Interest C. C. I. Co.	1704.18	
" Negaunee	6.37	1710.55
Total Credits		<u>82952.41</u>

DISBURSEMENTS - ALL COMPANIES

January to August	1912	2562.66
September to December	1912	4713.97
Year	1913	6967.32
"	1914	11081.75
"	1915	6445.56
"	1916	8855.94
"	1917	<u>5081.14</u>
Total Debits		45728.34
Balance in Fund, December 31st, 1917		<u>37224.07</u>

WEJ/MER
2/18/18

neg
 5081.14
 423.19
 4657.95

BENEFIT FUND DISBURSEMENTS FROM SEPTEMBER 1st, 1912 TO DECEMBER 31st, 1917.

ALL COMPANIES.

	* 1912	1913	1914	1915	1916	1917	TOTAL
Ashland	(a)2952 71						2952 71
Carp River Water Power					79 16		79 16
Austin	14 05	345 90	145 83	1 67	20 83		528 28
Cliffs-Shaft	575 52	739 30	1074 55	1210 33	1128 14	640 99	5368 83
Morris-Lloyd	98 59	920 41	996 18	1142 51	752 00	197 81	4107 50
Hard Ore	77 50	267 67	205 83				551 00
Lake	565 00	1401 83	940 35	1712 01	1035 17	908 16	6562 52
Jackson	9 52	194 67	24 67			69 17	298 03
Salisbury	65 84	292 50	1308 82	1 67	165 48	170 17	2004 48
Maas	4 17	685 03	1272 16	90 01	908 00	373 00	3332 37
Stephenson	185 57	1010 66	739 66	1499 16	1653 51	849 18	5937 74
Princeton		99 83	23 33	67 51	6 67	7 33	204 67
Gwinn			397 18	154 68	345 50	277 47	1185 83
Chase			31 00	15 00			46 00
General	52 67	52 54					105 21
Gardner-Mackinaw		18 50	339 18			13 67	371 35
Francis				26 00	114 50	252 33	392 83
Dead River Water Power					88 34		88 34
Holmes					1696 14	647 50	2343 64
Angeline					10 00		10 00
Spies					40 49		40 49
Maas Crusher						134 83	134 83
Golf Club Exploration						4 67	4 67
Central Office					61 01	111 67	172 68
Negaunee Mine	112 83	958 48	1846 66	525 01	740 00	(d)423 19	4606 17
Athens Mining Company			(b) 23 61				23 61
Crosby			(c)1712 74				1712 74
	4713 97	6987 32	11081 75	6445 56	8855 94	5081 14	43165 68

(a) Paid on account of injury cases 30.93
 Turned over to Hayes Brothers 2921.78
 Total as above 2952.71

(b) \$500.00 paid to widow of Oscar Larson, killed at the Athens Mine on August 14th, 1914.
 Payment made on the following basis:
 From Benefit Fund 23.61
 Charged to Opening and Equipping Athens Mine 476.39
 Total 500.00

Above payment of \$23.61 exhausted the Athens Benefit Fund.

(c) Used in paying compensation in the case of Christ Matunovich.

(d) Above payment of \$423.19 wiped out the Negaunee Mine Benefit Fund. In order to pay men on the Benefit Fund payroll when the Fund was exhausted in July 1917 additional payments of \$95.15 were made which were charged to Gratuities.

* 1912 column covers payments made from September 1st to December 31st.

WEJ/MER
2/18/18

SUSPENSE FUND:

On the following sheets there is a complete statement of the payments made from the Suspense Fund since September 1st, 1912, at which time the Compensation Law went into effect.

During the year there has been considerable discussion concerning the Benefit and Suspense Funds and Mr. Belden has had the matter under consideration, and the statements of Benefit and Suspense Funds included in this annual report were made up in February of 1918 for the Cleveland Office.

CONDENSED STATEMENT OF
SUSPENSE FUNDS
ALL COMPANIES

CREDITS TO FUND

On hand January 1st, 1912	47540.67	
Contributed by Company - 1912	<u>4626.38</u>	
Total		52369.05

DISBURSEMENTS - ALL COMPANIES

January to August	1912	2970.79	
September to December	1912	931.99	
Year	1913	12261.63	
"	1914	26136.71	
January to October	1915	<u>10067.93</u>	
Total Disbursements			<u>52369.05</u>
Balance in fund October 31st, 1915.			0.00

Contributions by the Company ceased in July 1912.
The Cleveland-Cliffs Iron Company Suspense Funds were exhausted in October 1915; Negaunee Mine Fund in July 1914 and Athens Mining Company Fund in November 1913.

WEJ/MER
2/18/18

SUSPENSE FUND

DISBURSEMENTS FROM SEPTEMBER 1st 1912 TO OCTOBER 1915.

	SEPT-DEC 1912	1913	1914	1915	TOTAL
Ashland	11 77	150 00			161 77
Austin		739 16	1090 36		1829 52
Cliffs-Shaft	155 31	1787 56	2686 70	1103 86	5733 43
Morris-Lloyd	110 42	1250 52	3420 55	1863 11	6644 60
Hard Ore	7 70	309 58			317 28
Lake	45 31	1666 41	2833 10	2054 01	6598 83
Jackson	90 90	210 70	45 70	46 80	394 10
Salisbury	96 24	497 59	1094 39	654 97	2343 19
Maas	192 76	1406 67	2672 76	1561 55	5833 74
Stephenson	66 65	1729 96	1331 31	1298 42	4426 34
Princeton		200 88	14 20	69 38	264 46
Gwinn		58 30	727 62	738 77	1524 69
Chase		619 13	983 33	71 39	1673 85
Gardner-Mackinaw		39 60	913 43		953 03
Francis				48 65	48 65
Imperial		8 10			8 10
Miscellaneous		110 57	388 92	289 87	789 36
General Shops			137 30	25 20	162 50
C. C. I. Co. - General	86 55				86 55
Negaunee Mine	68 38	1177 87	1435 03		2681 28
Athens Mining Company		13 50			13 50
Crosby		285 53	6361 81	241 95	6889 29
	931 99	12261 63	26136 71	10067 93	49396 26

DETAIL OF THE CLEVELAND-CLIFFS IRON COMPANY'S GENERAL SUSPENSE FUND.

	BALANCE 12/31/11	CREDIT 1912	TOTAL	PAID 1912	BALANCE 12/31/12
The D. S. S. & A. Ry.	6 60		6 60		6 60
Michigamme	456 52		456 52		456 52
Clowrey	1 50		1 50		1 50
Volunteer	463 42		463 42		463 42
Agents Choreman	16 20	2 40	18 60		18 60
Crosby	1027 63		1027 63		1027 63
Steam Electric Instal.	125 80	9 00	134 80		134 80
Steam Electric Operating	9 00	1 20	10 20		10 20
Iron Belt	142 94		142 94		142 94
Athens	13 50		13 50		13 50
Carp River Water Power	499 63	212 10	711 73	* 90 06	621 67
" " " " OPT.		2 70	2 70		2 70
Section 35	11 10		11 10		11 10
	2773 84	227 40	3001 24	90 06	2911 18

* Of this amount \$3.51 was paid out prior to September 1st, 1912.

WEJ/MER
2/18/18

VISITING NURSE:

The work of caring for our people by visiting nurses has continued to be one of the best things of a special nature done by the Company. The following nurses are now employed:

Miss Ruth Hassler	Ishpeming
Miss Ina E. Atkin	Negaunee
Miss E. R. McLeod	Gwinn
Miss L. N. Fisk	Iron River

During the year Miss Poyseor, who had been employed at Gwinn, left the Company to be married and her place was taken by Miss McLeod in November.

Miss Mahoney, who had been at Mercy Hospital at Iron River, left the first of the year, being succeeded by Miss Wilkinson, who continued the work until the last of October, she being succeeded by Miss Fisk.

Miss Hassler has made two trips to Milwaukee; one with Mrs. F. J. Baker and one with the child of Werner Wicklund, and she also accompanied Mrs. Ole Brekken to Chicago. These cases were for special operations.

Miss Atkin went with the wife of Mr. George Barry to Detroit and has made two trips to the Good Will Farm at Houghton.

Three children of Gust Yoki, who was injured at the Stephenson mine were taken to the Good Will Farm by Miss Atkin, the mother of the children being at Morgan Heights Sanitarium. On October 24th the buildings of the Good Will Farm were burned, all of the children being rescued, but on account of their being no building available at that time for a home the children were distributed and two of the Yoki children were brought back to Princeton, one having shown some signs of tuberculosis having previously been sent to Morgan Heights.

The following statement shows the expenses of the visiting nurses for the year 1917, this including their salaries and expenses incident to their work:

	Total for Year	Average Per Month
Ishpeming	n \$ 1333.38	111.11
Negaunee	1252.38	104.36
Gwinn (6 mo.)	641.09	106.83
Iron River	134.12	11.19

VISITING NURSE (Continued)

At Christmas time we have for a number of years, always done something for the children of our employees and it was found that the regular Christmas party was a dangerous affair as the only places in which the parties could be held were on the second floor. Accordingly, for the last two years we have had a moving picture show instead, and this plan was carried out at Christmas time at Ishpeming, Negaunee, and Gwinn. There was a very large attendance at each of the shows and the pictures were very much appreciated.

The following tables show the total number of patients cared for during the year, the number of new cases, the total number of visits to patients, and families visited for the first time. They also include the number of adults and children of each sex and the different diseases or ailments cared for.

YEARLY REPORT OF VISITING NURSE

Ishpeming.

Miss Ruth Hassler, Nurse.

Total number of patients cared for during year	269
Number of new cases cared for during year	180
Total number of visits to patients	1030
Number of families visited for first time	71
Number of social calls	75
Number died	8

Classification of new cases for the year:

Number of Adults	106	Male	22	Female	84
Number of children	74	Male	50	Female	24

Nationalities of new cases for the year:

American	14	Irish	6
English	49	Italian	22
Finnish	34	Norwegian	5
French	23	Polish	1
German	1	Swedish	25

Diseases of new cases:

Appendicitis	6	Gall Stones	2	Pelvic Trouble	10
Bowel Trouble	4	Graves' Disease	1	Pneumonia	2
Bronchitis	8	Heart Trouble	8	Post Operative	3
Burns	4	Hernia	4	Pregnancy	1
Club Feet	1	Infants newborn	34	Pul Tuberculosis	2
Cold	11	Infections	10	Rheumatism	2
Erysipelas	1	Injury	8	Stomach Trouble	1
Carbuncle	1	Fracture Kidney Trouble	4	Tonsillitis	2
Fracture	1	Mal-Nutrition	1	Unclassified	2
Frozen Feet	1	Obstetrical	39	Undiagnosed	4
				Var. Ulcer	1

YEARLY REPORT OF VISITING NURSE

Negaunee

Miss Ina E. Atkin, Nurse.

Total number of patients cared for during year	424
Number of new cases cared for during year	227
Total number of visits to patients	1649
Number of families visited for the first time	97
Number of pension calls	66
Number of social calls	980
Number died	2

Classification of new cases for the year:

Number of adults	127	Male	12	Female	115
Number of children	100	Male	48	Female	52

Nationalities of new cases for the year:

American	70	French	29
Austrian	4	German	2
English	30	Irish	1
Finnish	51	Italian	25
		Swedish	15

Diseases of new cases:

Aenemia	2	Infections	3	Pregnancy	22
Albuminurice	2	Injury	5	Pul Tuberculosis	4
Appendicitis	2	Insanity	2	Quinsy	4
Bowel Trouble	5	Jaundice	1	Rheumatism	5
Bronchitis	3	Kidney Trouble	1	Senility	2
Burns	3	Mal-Nutrition	7	Sore Eyes	2
Carcinoma	2	Mastoditis	4	Stomach Trouble	5
Cold	5	Neuralgia	2	Suppurating Ear	1
Colic	1	Obstetrical	37	Thrush	1
Constipation	1	Otitis Media	3	Tonsilectomy	1
Eczema	4	Paralysis Agitans	1	Tonsillitis	9
Goiter	1	Patts Disease	1	Typhoid Fever	6
Heart Trouble	2	Pleurisy	1	Unclassified	11
Hernia	2	Pneumonia	1	Undiagnosed	6
Infants, Newborn	32	Post Operative	10	Whooping Cough	2

YEARLY REPORT OF VISITING NURSE.

Gwinn

Miss L. C. Poyseor and Miss E. R. McLeod.

Total number of patients cared for during the year	381
Number of new cases cared for during year	330
Total number of visits to patients	1333
Number of families visited for first time	103
Number of pension calls	4
Number of social calls	239
Number died	2

Classification of new cases for the month:

Number of adults	154	Male	26	Female	128
Number of children	176	Male	95	Female	81

Nationalities of new cases for the month:

American	70	German	1
Austrian	15	Irish	1
English	24	Italian	49
Dane	1	Norwegian	24
Finnish	99	Scotch	2
French	34	Swedish	10

Diseases and number of new cases: Patients for the year:

Aenemia	3	Infants Newborn	39	Quinsy	1
Appendicitis	2	Infections	18	Rheumatism	8
Bowel Trouble	9	Injury	6	Rupture	1
Bronchitis	5	Itch	4	Sore eyes	4
Burns	4	Jaundice	1	Stomach trouble	4
Cold	14	Kidney Trouble	2	Tonsilitis	16
Colic	5	Lumbago	2	Unclassified	22
Convulsions	1	Mal-Nutrition	5	Undiagnosed	10
Chicken Pox	6	Mastoditis	1	Var. Ulcer	1
Croup	7	Obstetrical	47	Bladder Trouble	1
Eczema	2	Pleurisy	1	Diphtheria	3
Feeding cases	17	Pneumonia	3	LaGrippe	37
Gathered Ear	7	Post Operative	3	Gall stones	2
Heart Trpuble	3	Pul. Tuberculosis	3		

YEARLY REPORT OF VISITING NURSE.

Iron River.

Miss M. Wilkinson and Miss L. N. Fisk.

Total number of patients cared for during year	22
Number of new cases cared for during year	22
Total number of visits to patients	99
Number died	1

Classification of new cases for the year:

Number of adults	7	Male	0	Female	7
Number of children	15	Male	6	Female	9

Nationalities of new cases for the year:

English	12	Polish	1
Finnish	5	Swedish	4

Diseases and number of new cases for the year:

Adonitis	1	Infants newborn	6
Bowel trouble	4	Obstetrical	8
Club Foot	1	Typhoid fever	1
Heart trouble	1		

Number of patients attended and calls made by Visiting Nurses.

	No. of Cases	No. of New Cases	Male Adults	Female Adults	Male Children	Female Children	Total No. of Visits
Ishpeming	269	180	22	84	50	24	1030
Negaunee	424	227	12	115	48	52	1649
Gwinn	381	330	26	128	95	81	1333
Iron River	22	22	0	7	6	9	99
Total	1096	759	60	334	199	166	4111

	No. of Patients Died	Social Calls	Families Visited for First Time	Pension Calls
Ishpeming	8	75	71	
Negaunee	2	980	97	68
Gwinn	2	239	103	4
Iron River	1			
Total	13	1294	271	72

NATIONALITY OF CASES

	American	Austrian	English	Finnish	French	German	Danish
Ishpeming	14		49	34	23		
Negaunee	70	4	30	51	29	2	
Gwinn	70	15	24	99	34	1	1
Iron River			12	5			
Total	154	19	115	189	86	3	1

	Italian	Irish	Norwegian	Swedish	Polish	Scotch
Ishpeming	22	6	5	25	1	
Negaunee	25	1		15		
Gwinn	49	1	24	10		2
Iron River				4	1	
Total	96	8	29	54	2	2

REST COTTAGE.

The cottage was open for guests seventy days, from July 7th, to September 15th.

The results continued to be very satisfactory in every way. Mrs. Goldsworthy, a widow and daughter of our first pensioner, John Barry, took care of our cottage during the season, and got along very well with all of the guests. The sanitary conditions were first rate in every way, having no trouble at all with the water from Deer Lake.

A Kaustine closet was put in the house and this made it specially satisfactory to some of the women who could not walk very much.

The work can be continued next year without very much change and without any extensive repairs to the buildings, unless there should be some damage done through the winter.

The following data gives the number of guests and the cost of maintenance of our Rest Cottage work for the last ten years.

Year	Place	No. of Guests	Cost of Operation
1908	The Maples	21	\$ 89.93
1909	Deer Lake	29	305.82
1910	"	24	403.45
1911	"	45	482.89
1912	"	57	270.23
1913	"	82	358.45
1914	"	107	625.56
1915	"	137	572.40
1916	"	82	543.00
1917	"	111	745.11
	Total	695	\$ 4396.84

Details of operation for the year 1917.

Number of meals furnished	2689
Total days	750 $\frac{1}{2}$
Number of people at Rest Cottage	111
Average number of days per person	6.75
Number of days the Cottage was open	70
Average number of people at Cottage per day	10.7
Total cost of operation reduced to cost per person, per day	99.2

GWINN ASSOCIATION:

The work has continued as in the previous year with Mr. Adler in charge and it was a very successful year.

The report for December 1917 shows a membership of 526 and an average daily attendance at the building,

Men	Boys	Girls	Total
129	20	9	158

This attendance does not include those who go to see the moving pictures.

Attendance at Night School	1378
Attendance at Gymnasium & Swimming classes	4119
Attendance at Bass Lake Camp	1150
Attendance at Building	58250
Basket ball games with outside teams	10
Dances	20
Child Welfare Meeting - attendance	300
Men's meeting - attendance	100
Use of rooms by church organization	31
Wrestling matches with outside men	2
Farewell Banquet to Drafted Men- attendance	200
Farewell Supper & Dance Drafted men - attendance	1000
Patriotic meeting	70
Boys' Garden Exhibit:*	
Exhibitors	50
Exhibits	300
Books loaned from library	2355
Attendance at Moving Pictures	
Adults	30208
Children	5734
	35942

The annual statement following shows the receipts and expenditures for the year.

GWINN CLUB HOUSE

GWINN, MICHIGAN.

Balance on hand on January 1, 1917	\$	86.22
Receipts during year		<u>7963.88</u>
Total	\$	8050.10
Total Expenditures		<u>8034.31</u>
Balance on hand December 31, 1917	\$	15.79

RECEIPTS

Membership Fees	\$	1618.50
Theatre "		3609.84
Coupon Books		760.25
Bowling alley		263.50
Pool and Billiards		284.80
Lockers		27.50
Buffet		1856.40
Towels and soap		86.38
Miscellaneous		<u>224.21</u>
Total		8731.38
Less Coupons Returned		<u>577.50</u>
Net Receipts		7963.88

EXPENDITURES.

Building, maintenance	\$	217.58
Equipment		253.87
Lighting		349.74
Heating		444.71
Water		59.04
Bowling alleys		179.00
Pool room		75.18
Buffet		1403.19
Stationery and Printing		187.17
Towels and soap		
Laundry and soap		81.69
Entertainments		74.16
Power		14.35
Salaries		799.27
Education		232.93
Reading room		433.96
Gymnasium		48.40
Theatre		2867.40
Camp		190.22
Miscellaneous		<u>122.45</u>
	\$	8034.31

GWINN ASSOCIATION: (Continued)

Attention is called to certain features from which a profit is made.

	Receipts.	Expenditures	Profit
Bowling Alleys	\$ 263.50	\$ 179.00	\$ 84.50
Pool and Billiards	284.80	75.18	209.62
Lockers	27.50	0.00	27.50
Buffet	1856.40	1403.19	453.21
Towels and soap	86.38	0.00	86.38
Moving Pictures	<u>3609.84</u>	<u>2867.40</u>	<u>742.44</u>
Totals	\$6128.42	4524.77	1603.65

ISHPEMING Y. M. C. A.:

The Association's work for the year has been under the direction of Mr. E. J. Townsend and has been quite satisfactory.

The officers of the Association are Mr. W. H. Johnston, President, Dr. H. S. Smith, Vice-President, Mr. C. H. Moss, Recording Secretary, and Mr. W. H. Argall, Treasurer. Mr. Townsend has been very active and, while new, all the work has got along very well, and as he gains experience he should be a very good man for the work.

The year of the Association ends on April 31st, but the following sheet shows the receipts and expenditures during the calendar year. On certain features there was some considerable profit.

	<u>Receipts</u>	<u>Expenditures</u>	<u>Profit</u>
Dormitories	\$ 1596.40	232.87	1363.53
Bowling	827.72	476.41	351.31
Billiards	205.50	122.07	83.43
Athletic Games	220.82	135.20	85.62
Baths & Towels	197.30	123.90	73.40
Spa	<u>1018.65</u>	<u>928.56</u>	<u>90.09</u>
Total	\$ 4066.39	2019.01	2047.38

Plans have now been made for a financial convass early in 1918 to clear up the existing obligations.

ISHPEMING Y. M. C. A.:(Continued)

ISHPEMING Y. M. C. A.

FOR YEAR 1917.

* * * *

RECEIPTS:

Membership Fees - Sustaining	\$ 271.00
Membership Fees - Seniors	332.75
Membership Fees - Boys	173.30
Subscriptions	50.00
Miscellaneous	431.54
Mining Companies	2868.00
Dormitory Rentals	1596.40
Gymnasium Fees	196.65
Bowling	827.75
Billiards	205.50
Athletic Games	220.82
Baths and Towels	197.30
Spa	1018.65
Socials & Entertainments	34.65
Educational	14.65
Summer Camp	<u>23.00</u>

\$ 8461.96

EXPENDITURES:

Miscellaneous & Advertising	321.01
Equipment	23.00
Repairs	297.08
Fuel	486.88
Electricity & Gas	230.75
Water	87.86
Supplies	146.58
Salaries	4482.51
Stationery & Printing	61.60
Telephones	71.60
Postage & Office Sundries	78.12
Reading room supplies	62.75
Religious work	79.50
Interest	94.00
Dormitory maintenance	232.87
Gymnasium "	78.70
Bowling alleys "	476.41
Billiards "	122.07
Athletic Games	135.20
Bath Maintenance	123.90
Spa	928.56
Socials & Entertainments	122.63
Summer camp	17.32
Educational class work	<u>6.82</u>

\$ 8767.72

NORTH LAKE CLUB HOUSE:

Mr. J. S. Mennie designed a building to meet the needs of the people living at North Lake and the contract for the building was let in April and the work continued through the year. The building is working out very well and will be a most useful institution.

The work was nearly completed at the end of the year and will be finished up so that the building will be ready for occupancy early in January.

MUNISING Y. M. C. A.:

The work of fixing up the building has been completed during the year and plans made for getting the work started on a satisfactory basis.

The club which is occupying the upstairs rooms have not been doing very well financially and will not be able to meet their agreed payments to the "Y". This, with the great increase in the cost of fuel, has made it a hard proposition for the year. The local men believe that it will work out all right.

SAFETY WORK:

This department has co-operated with Mr. Conibear and the Central Safety Committee and the full report of the work is being covered by Mr. Conibear.

EDUCATIONAL WORK:

Mr. Stevenson had a class at Ishpeming and one at Negaunee along the regular lines of previous classes. These were held one night a week.

The first of the year Mr. Stevenson took up work with the Engineering Department, giving his days to the regular work of that Department and using his evenings for the educational class work.

On the first of September he went to Fort Leavenworth, Kansas, for the Officers' Training Camp and returned just before Thanksgiving with his Lieutenant's Commission established. He has since received a Captain's commission.

During his absence there has been no educational work carried on.

HOSPITALS:

I have frequently during the year visited the hospitals at Ishpeming, Negaunee, Gwinn and Republic. In a general way the work has continued satisfactory but the call for physicians has been very strong and it is only with some difficulty that the physicians have maintained their forces to a reasonable degree.

Dr. Braden of the Ishpeming force entered the Government service with a Captain's commission and has been at the various camps in this country since August. In his place they secured the services of Dr. Wm. Mudge who has been with Dr. Robbins of Negaunee, he coming to Ishpeming the first of January, 1918.

At Negaunee the conditions have not been even as satisfactory as at the other hospitals. The physician at Palmer left them for a position elsewhere and Dr. I. A. Abrahamson of Negaunee entered the service of the Government. Dr. G. M. Belheumer, who had been the chief operating man at Negaunee, resigned his position in November to go to Niagara, Wisconsin, for the Kimberly-Clark people.

They secured the services of Dr. H. B. Haynes, who came up into this country because of the condition of his wife who is tubercular. Previous to coming here, Dr. Haynes had been offered a position in the Government service and was urged to accept it and take up the work, but he felt that on account of the importance of the work in the iron producing county and the condition of his wife's health it was desirable for him to remain here and the War Department officials were asked for this permission. It was granted for a temporary period but it is hoped that he may be allowed to stay at his work. Dr. Whitmore has been secured for Palmer so that the work is now in better shape than before, but they are still operating with one less man than has been regularly employed.

GWINN:

Dr. C. J. Addison, who had been Dr. MacIntyre's assistant for a year, left in June to enter the medical service of the Government, his place being taken by Dr. D. C. Eisele. Dr. Eisele is in the first draft list

HOSPITALS: (Continued)

in the state of New York. He had enlisted in the medical service but was rejected on account of some trouble with his throat. This has now been remedied and he probably would be accepted. We feel the need of his services and have asked that he be put on the deferred list. The decision of the District Board has not yet been received.

REPUBLIC:

Dr. H. H. Loveland was in bad health during the early part of the year having some trouble with one of his ears, and being deaf in the other from early youth his condition was quite serious. He has, however, recovered from this trouble and apparently is going to be all right.

The work at Republic which was formerly handled through the Benefit Fund has been changed over to the control of Dr. Loveland on the same basis as at our other hospitals and this has worked out satisfactorily.

The yearly reports of the hospitals are attached.

STATEMENT OF RECEIPTS AND EXPENDITURES

ISHPEMING HOSPITAL

1917.
- - -RECEIPTS:

The Cleveland-Cliffs Iron Co.,	\$ 23432.10
Oliver Iron Mng. Co.,	6781.35
Jones & Laughlin Ore Co.,	225.50
Michigan Gas & Electric Co.,	453.50
Aetna Explosives Co.,	993.75
Foundation Co.,	54.37
Rent	60.00
Operations	1669.49
Pharmacy	<u>2575.81</u>

\$ 36245.87

EXPENDITURES:

Salary of employed physician (7 mo)	1050.00
Salaries of nurses	2040.00
Salaries of other employes	4506.00
Rent	208.92
Light & Gas	151.69
Groceries & Provisions	1020.69
Fuel	833.26
Telephone	50.05
Drugs and medical supplies	3852.19
Horses and autos	937.12
Insurance	12.35
Taxes	66.28
Dressings and office	713.07
water	14.63
Laundry	13.19
Library	11.25
Other expenses	<u>377.29</u>

15857.98

Income of Physicians (4)

20387.89

STATEMENT OF RECEIPTS AND EXPENDITURES

GWINN HOSPITAL

1917.

* * *

RECEIPTS:

The Cleveland-Cliffs Iron Co.,	\$ 10129.92	
Other Companies	535.67	
Hospital service	1222.67	
Other sources	<u>240.00</u>	
		\$ 12128.26

EXPENDITURES:

Salaries of Physicians	719.70	
Salaries of Nurses	748.00	
Wages - help	1053.52	
Electricity and Lamps	67.14	
Fuel	758.73	
Provisions	1766.55	
Telephone	56 .10	
Drugs	575.28	
Repairs	112.55	
Insurance & Taxes	191.63	
Equipment	220.85	
Laundry	366.94	
Kitchen supplies	17.63	
Hospital Supplies	265.04	
Miscellaneous	93.95	
Barn	656.26	
Office Expense	<u>27.38</u>	
Total Expenditures		<u>7797.25</u>
Income		\$ 4331.01 -

STATISTICAL REPORT

GWINN HOSPITAL

1917.

* * *

Number of C. C. I. injury cases admitted during year	5
Number of other cases admitted during year	129
Number of births during year	21
Number of deaths during year	2
Number of operations during year	58
Number of hospital calls - C. C. I. families	6662
Number of hospital calls - outside cases	167
Number of visits - C. C. I. families	2698
Number of visits - outside cases	183
Number of nurses employed during year - average	3
Number of meals served to patients	3092
Number of meals served to nurses, help, etc.,	6147
Total number of meals served	9239
Total number of days of patients	1220

NEW HOSPITAL AT ISHPEMING:

At the request of Mr. Mather Dr. Crile of Cleveland was asked for his opinion in regard to the most desirable architect for a new hospital building and he recommended Mr. M. J. Sturm of Chicago who was the architect for St. Luke&s Hospital in Marquette. On March 1st Mr. Belden and I called upon Mr. Sturm at his office in Chicago, he coming to Ishpeiming with us that evening. The matter of the new hospital was carefully considered and Mr. Sturm authorized to prepare the plans and specifications.

Mr. Mennie and I have made several trips to Chicago in consultation concerning the various features required in the hospital for our work and plans were secured and approved.

The general contract was let to O. W. Rosenthal Company of Chicago and the work undertaken early in the fall. It was hoped that the building might be under roof by the first of December but various delays prevented and the weather came off cold early and has remained at a low temperature since. Up to the first of January the lower part had been put in and part of the second floor concrete poured.

The matter of equipment has been considered and orders placed for various kinds including sterilizers and laundry machinery which, on account of Government orders, are difficult to obtain, when needed unless orders are placed far in advance of requirements.

HEALTH:

The general health conditions of our different cities has been first rate and we have not had any serious epidemics. I have visited the different cities and locations and have found the conditions of the lots and alleys generally very good.

The visiting nurses have kept us well informed of conditions found by them so that we are in a position to discover and remedy any unsatisfactory condition if such should develop.

WAR DRAFT:

On June 5th by order of President Wilson all men between the ages of 21 and 31 inclusive were required to register. Following the registration the men appeared before the Local Boards for examination and for the filing of any claims which would relieve them from service. The Local Board at Ishpeming was composed of

Mr. Wm. Trebilcock, Chairman
Mr. Denis Hughes, Secretary
Dr. Henry Holm, Medical Examiner.

This was District No. 2, which comprised Ishpeming, Gwinn, Republic, Palmer, Diorite, and the townships in this section of the county.

The office of the other district was at Marquette. The members of the Board being

Mr. A. K. Moore, Chairman
Mr. John L. Zoberlein, Secretary
Dr. E. H. Flynn, Medical Examiner.

We co-operated with the different departments in the matter of this work. We visited Marquette one day each week during the early period and spent four evenings each week at the office at Ishpeming to meet any of those who needed assistance in filling out the reports.

The men have responded loyally to the draft. During the year we had from the Mining Department the following numbers that have enlisted and been called into the service.

Drafted - First District	24
Drafted - Second District	93
Drafted - Spies Mine	<u>4</u>
Total	121
Enlisted in U.S. Army	
and Navy	34
Enlisted in Canadian Army	<u>9</u>
Total	164

This work has taken a great deal of the time of the department throughout the whole season.

WAR DRAFT: (Continued)

A new plan was decided upon by the War Department late in the year and a Questionnaire was sent out by the Government which required a great deal of work to properly fill out. This questionnaire was for the purpose of dividing the men into different groups according to the order in which they would be called into service, at the present time the men all being taken from Class I. This plan provided for a Deferred Classification for men engaged in certain industrial pursuits necessary to the maintenance of the war and within this class were our miners and skilled men.

The questionnaires were of such a nature that it required much time in filling them out properly and a meeting of the mine clerks was held at which Mr. Berg was present and the matters of the questionnaire fully gone into and the mine clerks were requested to devote their time to the assistance of the men at the different mines so far as their services were required. This work was largely done in the evenings and on Sundays. Affidavits were made out by the superintendents in those cases in which our men came under the Deferred Classification.

The members of the Local Draft Board did not act upon any matters of Deferred Classification except to make recommendation to the District Board meeting at Houghton, which had entire charge. In almost all of our cases the District Board granted the Deferred Classification. In this way we shall practically lose very few of our miners for if a man was experienced as a miner he was put in Class 4 if married and in Class 2 if single. Married men, or men with dependents recognized by the Local Board, were put by the Local Board in Class 4 even if a Deferred Classification Claim had been made.

RED CROSS:

The sale of Red Cross seals was undertaken for the county by the women of the Visiting Nurse Association of Marquette and we co-operated with them and assisted the Ishpeming women who had charge of it for this city.

The organization of Red Cross work was effected in May of 1917, and as the ruling of the National Red Cross Association is that counties should usually have only one chapter, Ishpeming was organized as a branch of the Marquette County Chapter with

Mr. Wm. P. Belden, President
Mrs. V. H. Vandeventer, Vice-President
Mr. Carl Brewer, Secretary
Mr. C. H. Moss, Treasurer.

The work has been continued in a very successful manner and the women of the city have very generally been interested in the work. On Mr. Belden's leaving the city for Cleveland Judge W. T. Potter was elected President in his place.

At the annual election the officers as above noted were elected with the exception that Mr. John G. Welsh was made treasurer. Members for the directors of the County Chapter were nominated at this meeting and elected at the meeting of the Chapter held in October at Marquette.

We have also assisted in the organization of branches of the chapter at Negaunee, Palmer, Republic and Champion.

EMPLOYMENT:

Applications of all men seeking positions have been carefully investigated on account of the general agitation of I. W. W. men. Careful watch has been kept of the men at our different mines. There has been no abundance of men looking for work but a considerable number of new men, some of them coming from mines that were shutting down, have been put at work at our mines during the year.

INCAPACITATED EMPLOYEES:

During the year payments have been made to various men whose term of service did not fully bring them under the provisions of the pension system, but who were badly in need of assistance. The following table shows the

INCAPACITATED EMPLOYEES: (Continued)

men in this class and the amounts paid to them during the year:

Donations to Incapacitated employees.

August Larson	\$ 171.48
Chas. Fagerberg	90.00
John Trembath	180.00
John Beale	130.00
Thomas Dawe	125.00
Fred Fredette	300.00
Wm. Holman	180.00
John Salson	250.00
Andrew Lerlie	<u>45.00</u>
Total	\$ 1471.48

August Larson died May 3rd, 1917. Funeral expenses of \$100.00 paid in July 1917.

Chas. Fagerberg died June 28th, 1917.

Thos. Dawe returned to work in June 1917.

One item of interest in connection with incapacitated employees is the case of Julius Larson who has, since his injury at the Cliffs Shaft Mine, been paid a considerable amount by us up to this year. He was quite early in the war draft and had expected that his condition would prevent him from being called to serve but he was accepted by the physicians and on a furlough from Camp Custer this fall stated that he was now getting along very nicely and thought he was going to be all right again.

PHYSICAL EXAMINATION:

We are, from time to time, finding some cases under the Workmen's Compensation Law which have indicated previous defects of which we did not have any knowledge and which undoubtedly contributed in some degree to their liability to injury. We have kept close watch of the men employed so far as possible, and especially so at Gwinn where we are keeping some records of any physical ailments or defects discovered.

PHYSICAL EXAMINATION: (Continued)

As the provisions of the Compensation Law become more liberal it certainly will be necessary to introduce physical examinations of the men. These examinations need not be so extensive as have been adopted by some of the manufacturing establishments but should cover the matter of heart, eye-sight, hearing, hernia, and special injuries or diseases or defects that would make them liable to injury.

HOME GARDENING:

Our usual plan of home gardening work was changed somewhat on account of the need of food products and, therefore, this year the prizes were divided equally between Food Products and the Best Kept Premises; Vine Planting and Window Box Gardening being considered a part of the Best Kept Premises effort. The work was very satisfactory for the year, although we had very early frosts in the fall.

The following is the list of the awards.

Ishpeming:

Best Kept Premises	\$ 100.00
Vegetable Gardens	<u>100.00</u>
	200.00

Negaunee:

Best Kept Premises	32.00
Vegetable Gardens	<u>50.00</u>
	82.00

Gwinn, Austin & Princeton:

Best Kept Premises	50.00
Vegetable Gardens	<u>50.00</u>
	100.00

North Lake:

Best Kept Premises	50.00
Vegetable Gardens	<u>50.00</u>
	100.00

Republic :

Best Kept Premises	50.00
Vegetable Gardens	<u>50.00</u>
	100.00

Ishpeming Schools: 72.50

Munising : 52.50

A special effort was made through out the whole county for the raising of all food products, especially potatoes, and this plan aroused a great deal of interest at our different properties.

Men working for the Company were encouraged to plant potatoes and lots were assigned to those who previously had no garden plots for this purpose. The new land was plowed for these men and in addition the

HOME GARDENING: (Continued)

lots were fenced in a few cases necessary. It was very difficult to secure seed potatoes and in order to assist them the Company purchased potatoes and sold them at cost to the employees, the price being \$3.10 per bushel.

The following list shows the amount of new lots cultivated and the bushels of potatoes furnished for seed to our employees:

	No. of Lots	Acres	Bushels Potatoes
Republic	50	6	147
Ishpeming	147	25	479
North Lake	30	10.3	61
Negaunee	166	59.6	494
Gwinn	<u>43</u>	<u>16.7</u>	<u>391</u>
	436	117.6	1572

Before the usual time of harvest we had a long spell of cold rainy weather and many people expected that this would be followed by pleasant weather during which time the potatoes could be dug, but the bad weather was immediately followed by a very severe freeze, the ground being frozen perhaps to a depth of 2 inches, and no potatoes could readily be dug, and following this time there was no period but what the ground was somewhat frozen. When dug, many were found spoiled and a great many were left in the ground.

We have reports of the following quantities of potatoes raised by our employees from seed furnished by us:

	No. Bu.
Ishpeming	5213
North Lake	1544
Republic	786
Negaunee	7737
Gwinn	<u>2970</u>
Total Bushels raised	18250

IMPROVEMENT WORK:

On Mr. Warren H. Manning's visits we have accompanied him on his inspections and co-operated with Mr. Cotter during the season.

It was with the greatest regret that we had to report the serious illness of Mr. Cotter which was followed by his death.

Mr. Cotter's work has been very satisfactory and he will be greatly missed here in succeeding years and it will be exceedingly difficult to find a man who can take care of this work with the satisfaction and general helpfulness which has always been so pronounced with Mr. Cotter.

CLUBS:

The Mining Club has continued its meetings throughout the year with Mr. James H. Rough, President and Mr. James Stephens, Secretary. The annual outing was held in August, going by autos to the camp of Joseph Richards at Little Lake. It was the largest attendance and the best picnic ever held by the Mining Club.

OUT-OF-DOOR SPORTS:

The Ski Tournament on February 22nd, though somewhat local in character, was open to anyone and we had some very good riding and a good number of contestants, not only from this locality but from outside cities. The Wm. G. Mather gold, silver, and bronze medals were awarded to the best amateur contestants of Michigan.

MEETINGS:

During the year I was present at several important meetings. With Mr. Belden I attended the hearing before the Legislative Committee at Lansing for the consideration of the different proposed amendments to the Compensation Law.

In May I attended a meeting of the State Y. M. C. A. held at Detroit to discuss with Dr. Mott the matter of a canvass for funds for taking care of the Y. M. C. A. work among the troops, both in this country and across the water.

MEETINGS (Continued)

With Mr. C. B. Randall I attended a hearing before the Leigslative Committee at Madison, Wisconsin. This was on account of the Pickands Mather Company.

In July I visited the Calumet & Hecla Company looking into the matter of their hospital management and employment department work.

FOOD CONSERVATION:

There has been a very active campaign throughout the whole season by the Food Conservation Committee of the County.

The Committee canvassed all the homes in the county asking the women to sign the food conservation cards, and this was done very thoroughly and with very satisfactory results. In July public meetings were held in the different cities, towns, and townships. Talks were given on the matter of food substitutes for the saving of wheat, meat, sugar and fats. We assisted in meetings at Ishpeming, Palmer, Whitbeck, and Witch Lake.

WAR FUNDS:

The year 1917 has been an exceedingly busy one in the raising of funds for various organizations to assist in war service. These campaigns were undertaken in Ishpeming through the organization of a War Council made up of ten teams consisting of eight men each, with Mr. J. S. Wahlman, mayor of the city, chairman, and Mr. C. J. Shaddick, secretary. The men in this organization did very excellent work in the campaigns.

Red cross Membership:

May 14th to May 21st.

Y. M. C. A. War Fund:

May 21st to May 28th.

Red Cross War Fund:

June 18th to June 25th.

Y. M. C. A. War Fund:

November 12th to November 17th.

Red Cross Membership:

December 16th to December 24th.

1st Liberty Loan:

May 10th to June 15th.

2nd Liberty Loan:

Oct. 15th to October 29th.

General Welfare:

The following sheets show the contributions that have been made by the Land, Furnace, Lumbering, and Railroad Departments for special work during the year and a comparison for a period of five years.

There is also attached the comparative statement of the expenses of the Pension Department for the period of five years from 1913 to 1917 inclusive.

THE CLEVELAND-CLIFFS IRON COMPANY

LUMBERING DEPARTMENT

GENERAL WELFARE EXPENSES FOR YEARS

1913, 1914, 1915, 1916, AND 1917.

	1913	1914	1915	1916	1917
General Welfare Acct #11					
Prop. charged by Treasurer	491 73	504 28	410 63	430 99	583 15
Donations:					
Various societies	15 00				10 00
Red Cross					514 00
Y. M. C. A.					256 50
Persons	7 20	4 00	129 55	64 00	13 22
Hospital at Munising	350 00	350 00	350 00	350 00	262 50
Safety Work:					
Equipment					
Compensation:					
Medical and Hospital	730 84	1537 52	1217 55	1456 03	1611 52
Payments	573 28	841 11	352 02	932 96	1431 71
Totals	2168 05	3236 91	2459 75	3234 23	4682 60

Compensation payments:
Percentage of payroll

.0082 .006 .007 .003

THE CLEVELAND-CLIFFS IRON COMPANY

LAND DEPARTMENT

COMPARATIVE STATEMENT OF GENERAL WELFARE

EXPENSES FOR THE YEARS 1913 to 1917 INCLUSIVE.

	1913	1914	1915	1916	1917
General Welfare Account #11					
A-2 Prop. charged by Treas.	154 40	197 84	163 85	192 43	252 48
" charged Welfare work					
b Prizes to tenants, etc.,					
Munising			55 00	69 20	52 50
c Traveling Expenses					
Housing Committee					
d Rest Cottage					
Equipment	12 00				
1/2 expenses of rink and					
tennis court					
Donations:					
Churches					50 00
Fire Department	15 00	25 00	10 00	20 00	10 00
Societies	10 00				
Celebrations	10 00				
Munising Hospital	160 00	160 00	150 00	150 00	150 00
Munising Y. M. C. A.	900 00	900 00	900 00	450 00	
Playground - Negaunee	10 00	10 00	10 00	10 00	10 00
American Red Cross Ass'n (Seals)			10 00	10 00	20 00
Munising City Band				100 00	
American Red Cross Association					160 00
Y. M. C. A. War Work Fund					81 00
Safety Work:					
Charges for Safety Work					
and Equipment			86 62	50 89	
Compensation:					
Office Expense					
Compensation Paid	451 00	838 37	160 47	701 23	1255 27
Medical Attendance	311 90	231 92	394 03	785 95	1067 10
TOTALS	2043 30	2363 13	1939 97	2539 70	3108 35

Compensation payments- percentage of pay-roll	.0094	.00579	.00622	.012207
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PENSION DEPARTMENT.

THE CLEVELAND-CLIFFS IRON COMPANY

PIONEER IRON COMPANY - FURNACE DEPARTMENT

COMPARATIVE STATEMENT OF GENERAL WELFARE

EXPENSES FOR THE YEARS 1913 TO 1917 INCLUSIVE

	1913	1914	1915	1916	1917
General Welfare Acct. #11					
A-2 Prop. charged by Treasurer	534 59	444 59	526 61	694 75	872 08
b Prizes to tenants, etc.	50 00	50 00	50 00	50 00	50 00
d Visiting nurse	300 00	300 00	300 00	300 00	400 00
f Miscellaneous expenses					
Gladstone Club:					
Total cost of operation	(4587 49)	(3586 95)	(4226 81)	(5040 06)	(2631 57)
Net Loss or Gain	(122 30)	(411 90)	(69 53)	(308 20)	(83 29)
Donations:					
Churches	40 00	55 00	25 00	0 00	375 00
Y. M. C. A. War fund					375 00
Fire Department	10 00	10 00	10 00	10 00	
Societies	39 00	50 00	140 00	25 00	70 00
Celebrations				10 00	10 00
Persons	21 00	25 00	62 78	12 00	35 00
Miscellaneous			50 00	15 00	
Institutions-St. Luke's Hospital			300 00	300 00	300 00
Young Men's Reading					
Room - Gladstone				100 00	100 00
Red Cross					650 00
Pensions:					
Pensions Paid	448 20	448 20	448 20	328 20	268 20
Safety Work:					
Charges for Safety Work and equipment	502 40	2525 00	3 32	139 10	111 47
Compensation-Medical and Hospital Expense					
Compensation Paid	96 96	31 31	603 66	470 05	1712 22
Totals	2042 15	3939 10	2519 57	2454 10	4953 97

Compensation payments:

Percentage of payrolls Pioneer Iron Co.	.000371	.00141	.00150	.00150
Cleveland-Cliffs Iron Co	.000000	.11541	.00030	.00030

Gladstone club - Red figures show a gain.

STATEMENT OF EXPENSES OF PENSION DEPARTMENT

FOR FIVE YEAR PERIOD FROM JANUARY 1st, 1913 TO DECEMBER 31st, 1917.

ACCT. NO.		1913	1914	1915	1916	1917
A-1	Salaries of Superintendent of Pension Department and assistants	3754 70	3822 26	3570 00	4370 50	5476 24
B	Prizes to tenants and employes for Best Kept Premises, gardens etc.	609 38	947 25	671 25	661 00	654 50
C	All expenses of Supt. of Pension Department including traveling expenses and livery	517 37	481 72	417 48	195 58	358 21
D	Salary and expenses of Visiting Nurse - Ishpeming	1177 03	1135 24	1155 48	1154 40	1333 38
	Rest Cottage - Deer Lake	358 45	625 56	572 40	543 00	745 11
	Salary and expenses of Visiting Nurse - Negaunee	927 01	1012 82	1077 64	1157 03	1252 38
	Salary and expenses of Visiting Nurse - Gwinn	1129 78	1191 03	1174 56	1177 11	641 09
	Our Proportion of Visiting Nurse Expense - Iron River				65 75	134 23
E	Apparatus, Expenses and Freight	30 33	63 87	21 17	36 41	23 66
F	Miscellaneous Expense					
	Books, cuts, magazine, papers, etc.	11 38	9 25	17 00	18 00	42 05
	Incidental Expenses - Mining Department	16 67				86 75
	Incidental Expenses - To Treasurer	60 00	58 15	33 00	44 08	27 50
	Donations to Incapacitated Employes	712 75	266 40	169 92	757 76	1471 48
	Other Donations	60 00		196 24	20 00	273 04
	Membership in Associations		80 00	130 00	215 00	105 00
G	Employes Clubs					
	Bowling Alley and Club Work	42 45	62 46	66 90	146 47	215 42
	Tennis Courts - Ishpeming, Negaunee and Gwinn Districts	42 97	4 74	11 21		
	Superintendents Lunches and Incidentals	17 40	34 57	30 36	85 31	149 12
	Gwinn Club House	3267 19	3162 17	2969 47	3439 37	3591 05
	Ishpeming Y. M. C. A.	1680 00	4999 29	1680 00	1680 00	1680 00
	Gwinn Club Moving Pictures - Equipment and Installation		828 11			
H	Office Expense					
	Stationery, Office Supplies and Expenses - To Treasurer	115 31	112 06	144 98	223 03	574 80
	Stationery, Office Supplies and Expenses - Mining Department	118 50		91 85	46 39	84 15
	Office Furniture and Equipment	58 55	121 58	22 50	215 71	152 27
	Postage	68 00	83 00	76 76	140 00	172 00
	<u>SCHOOL OF INSTRUCTION</u>					
I-1	Salary of Instructor	1587 12	2340 00	2260 00	2020 08	868 00
	Travelling expenses, livery, printing, stationery, etc.	329 04	772 71	403 00	547 22	88 71
	TOTAL	16691 38	22214 24	16963 17	18959 20	20000 14
	DISTRIBUTION					
	Mining Department	7666 77	12201 04	11718 05	13024 55	14060 29
	General Expense - To Treasurer	4615 64	4831 89	250 60		
	Land Department	12 00		122 48	192 43	252 48
	Furnace Department			402 83	694 75	872 08
	Lumbering Department			325 18	430 99	583 15
	Gwinn District Office Expense	4396 97	5181 31	4144 03	4616 48	4232 14
	TOTAL	16691 38	22214 24	16963 17	18959 20	20000 14

G E N E R A L .

The past year has been a difficult one from an operating stand-point. While there has been no very serious shortage of labor, we have never had a full complement of men at any except the Lake Mine. This has, to some extent, affected the output, but taken on the whole, the results have been satisfactory. There has been, however, a restlessness and independence on the part of the men, which has made it difficult to secure maximum results. The most serious shortage has been in trammers at the Cliff Shaft and Republic Mines. This class of labor is difficult to hold, as it consists principally of unmarried men who work for a short time only. The turn-over, therefore, is large and the men as a class incompetent. The first draft took from us 141 men, of whom 41 were miners. This represented 3.6% of this class employed, and measured in tons per man was a loss of 123,000 tons per year. If the same percentage of the remaining registered men is called, the number drafted will approximate three times those in the first draft. The new classification will reduce the number of miners, but will take a larger proportion of trammers.

In 1916 we secured the highest average efficiency ever known at our properties, and this year I am able to report that the results have been practically the same, as is shown by the statement which follows. Where the total per man is less than for 1916, there is an explanation. For example, the slight falling off in the total per man at the Stephenson Mine was due to decreased production, the result of having to transfer a certain number of the men from this property to the Austin, which is a summer proposition; also to the flooding of the mine, which occurred in the latter part of the year.

At the Maas Mine the slight decrease in 1917 was due to the fact that most of the ore came from drifting instead of stoping. It was desirable to secure as large a product of Bessemer as possible, and for this reason that portion of the ore immediately below the hanging was attacked.

At the Cliffs Shaft there are three reasons for the decrease in the total ore per man: The first is that in 1916 there was an over-run of 19,820 tons, whereas in 1917 the piles were not cleaned up and, therefore, no over-run is shown. Second, because the working places in 1917 were on the whole much smaller than in 1916. This necessitated breast-stoping in place of over-hand stoping, with a consequent decrease in the output of the men. Third, there was a large amount of improvement work done on surface, which was charged directly to operation.

At the Crosby Mine the slight falling off is due to the fact that a larger proportion of the ore came from underground than in 1916.

The increases in cost for the year are, therefore, entirely due to higher wages and increased cost of supplies, over which the superintendents had no control.

The efficiency of the men is a high tribute to the ability of our superintendents, and I cannot too highly commend them for the work which they did. The only serious accident at any of our properties was the flooding of the Stephenson and adjacent mines, the Austin and Section 29. This has been fully treated in Mr. Graff's report so that it is unnecessary for me to make any further reference to it, except to say that orders have been placed for pumps and as soon as they are received, work of unwatering these properties will begin. On the first of next May Michigan will adopt Prohibition. What effect it will have on our force is

difficult to determine. It is not likely that we shall lose many of our married men, but it is not improbable that a number of the young Italians and Finns may seek work where they can get liquor. There is a difference of opinion in regard to this, but it is well to bear it in mind. At this time there is no agitation among the men, and they seem satisfied with conditions. The only danger is from outside. For example, should any of the miners' unions attempt to organize, it is going to be a difficult problem to handle on account of the attitude of the Administration towards Unionism and the fact that we are producing one of the basic war necessities.

LEASES.

The only outstanding lease on lands of this Company is held by the Empire Iron Company, covering the E $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Section 19, 47-26.

.....
General Manager.

THE CLEVELAND-CLIFFS IRON COMPANY

MINE DEPARTMENT

COMPARATIVE STATEMENT OF PRODUCTION AND WAGES FOR YEARS 1917 AND 1916, INCLUDING OVERRUNS AS REPORTED BY SHIPPING DEPARTMENT BUT NOT OPEN PIT PRODUCT AT MORRIS-LLOYD MINE.

	LAKE	NEGAUNEE	STEPH- ENSON	SALIS- BURY	MAAS	MORRIS LLOYD	CLIFFS SHAFT	REPUBLIC	GWINN	MEADOW	CROSBY	HOLMES	SPIES
TOTAL PRODUCT													
Year 1917	477,964	543,757	253,266	98,999	320,356	267,787	367,595	153,425	161,963	103,987	290,795	68,773	74,530
Year 1916	410,922	537,086	303,562	88,875	264,248	281,833	395,320	173,096	144,066	62,279	222,277	-	-
Average per Month 1917	39,835	45,315	21,150	8,250	26,750	22,310	30,630	12,785	13,495	8,666	24,230	7,238	9,316
Average per Month 1916	34,240	44,760	25,300	7,406	22,020	23,485	32,940	14,420	12,050	5,662	27,785	-	-
AVERAGE DAILY PRODUCT:													
Year 1917	1,584	1,794	898	328	1,057	887	1,217	506	540	337	935	291	364
Year 1916	1,339	1,796	1,019	294	884	942	1,317	573	479	239	1,063	-	-
TONS PER MAN PER DAY:													
Surface:-													
Year 1917	20.90	30.79	15.96	9.50	19.73	18.47	15.09	7.38	16.33	15.95	24.03	9.02	16.65
Year 1916	18.18	32.26	17.04	8.28	19.56	15.83	18.84	8.45	12.13	13.13	30.10	-	-
Underground:-													
Year 1917	6.29	5.94	5.73	3.67	4.67	4.29	4.65	2.93	4.44	5.76	10.50	3.93	5.41
Year 1916	6.57	5.91	5.67	3.39	4.84	4.05	4.93	2.82	3.40	4.51	11.54	-	-
Total:-													
Year 1917	4.83	4.98	4.22	2.65	3.78	3.48	3.55	2.10	3.49	4.23	7.31	2.74	4.09
Year 1916	4.82	4.99	4.25	2.40	3.88	3.23	3.91	2.11	2.66	3.35	8.34	-	-
Stoping:-													
Year 1917	10.20	10.84	12.60	6.23	8.99	9.48	11.80	8.69	8.67	10.20	17.65	7.50	10.53
Year 1916	10.91	11.29	11.57	6.56	8.95	10.61	13.30	7.74	8.40	7.66	19.34	-	-
RATE PER DAY - SURFACE													
Year 1917	3.25	3.26	3.31	3.39	3.28	3.44	3.31	3.56	3.38	3.60	4.00	3.38	3.36
Year 1916	2.68	2.67	2.75	2.80	2.67	2.82	2.74	2.86	2.74	2.94	3.14	2.79	2.69
RATE PER DAY - UNDERGROUND													
Year 1917	4.15	3.88	3.95	3.86	3.91	3.90	3.81	3.82	4.03	4.19	4.06	4.57	3.87
Year 1916	3.31	3.12	3.21	3.10	3.18	3.16	3.05	3.12	3.16	3.19	3.19	4.53	3.48
RATE PER DAY - TOTAL													
Year 1917	3.94	3.78	3.78	3.73	3.79	3.81	3.70	3.75	3.89	4.03	4.04	3.81	3.74
Year 1916	3.14	3.05	3.10	3.01	3.08	3.09	2.99	3.05	3.09	3.12	3.18	3.53	3.04
MEMORANDUM													
Stockpile Overrun 1917	0	12,000	15,843	392	0	2,495	0	0	0	3,183	1,906	2,244	0
Stockpile Overrun 1916	33,886	25,541	2,918	0	0	5,209	19,820	4,598	0	1,360	0	-	-

Holmes Mine - Started on operating basis March 14th, 1917.

Spies Mine - Started on operating basis May 1st, 1917 - Total Product includes 6728 tons produced in development.

Stephenson Mine - Discontinued operating December 5th, 1917 on account of mine being flooded.

Gwinn Mine - Changed from double shift to single shift July 16th, 1917.

Changed back to double shift December 10th, 1917. 2-8 hr. 177 days - 1-8 hr. 123 days.

Lake Mine - Changed from single shift to double shift October 1st, 1916.

Crosby Mine - Resumed operating May 1st, 1916. Total Product, Average monthly product, average daily product and tons per man based on crude ore.

WAGES: - Rates and percentages based on labor at above mines only including Mining Captain.

Average total rate per day 12 Mos. 1917 - 3.81

Average total rate per day 12 Mos. 1916 - 3.08

Increase 12 Mos. 1917 over 12 Mos. 1916 - 23.7%

