

been sunk and on account of this fact the property had to be opened up by a slope for taking out the coal, rather than by the better plan of working it entirely by shaft. The shaft will eventually be sunk to a depth of 550 feet, the size of the same being 12x32, consisting of two carriage ways, an airway and a pump way. The airway does not come to the surface, but only as far as the Diamond vein. The shaft will be used for hoisting the coal from the lower veins to the Diamond vein, where the coal will be run by gravity to the foot of the slope. The veins above the Diamond veins will be attacked by driving a rock plane up, and then lowering the coal to the foot of said plane, where it will run by gravity to the foot of the slope. The slope has an inclination of 1' in 4", and is continued down through the Diamond vein to the rock vein next below. The distance between the rock vein and the Diamond vein at the shaft is only 4½ feet; at the foot of the slope it is 25 feet, thus enabling us to drop off the light cars at the slope, and let them run by gravity to the foot of the plane, and also to the foot of the shaft, and at the same time carry the loaded cars from the foot of said plane and shaft to the foot of the slope. In addition to the shaft opening and the slope opening, another slope has been sunk nearly parallel with the hoisting slope for the purposes of an airway, so as to have it separate and distinct from the main hoisting slope. We propose to use wire rope haulage on our main roads and electric haulage for gathering the cars and bringing them to the main road. Knowing the dip of the measures and the general lay of the coal, a straight gangway will be driven through the centre of the property lengthwise, and gangways opened right and left from this road at points favorable for gravity to act in favor of the loaded cars, thus enabling us to use electricity to the best advantage.

The **West Ridge** leases were made February, 1893; ground was broken for sinking the shaft May 11, 1893. Work on the slope was begun June 15, 1893. Work on the breaker site was begun August 14. Began running coal through the breaker January 8, 1894. The plant consists of one pair of hoisting engines at the shaft, one return flue tubular boiler. At the breaker, one pair of geared hoisting engines, 16x30-inch cylinder, one breaker engine, 18x30, one high speed electric engine, 160 horse power, one 100 M. P. generator, one fan engine, 18x30, with a 20 Guiball fan, four return flue tubular boilers, together with all the ordinary breaker machinery, shop engines, etc., etc. Breaker is capable of an output of 1,500 to 2,000 tons a day. Coal is shipped via New York, Ontario and Western Railway. The breaker is situated alongside their main track between this city and Carbon-dale.

Yours very truly,

J. H. RITTENHOUSE,
General Manager.

Nos. 1 and 2 Shafts, Old Forge and Breaker. At Old Forge breaker four Babcock & Wilcox water tube boilers of 600 horse power in two nests or batteries were erected in 1896. Pressure carried, 110 pounds. They were put in operation November 27, 1896, and supply steam to Old Forge breaker, Old Forge shaft No. 2, and to shaft No. 13 of Central Colliery, and have supplanted three cylindrical boilers 60 feet by 30 inches, formerly at the breaker; five 36 feet by 30 inches at Old Forge shaft No. 2, and ten 36 feet by 30 inches at No. 13 shaft; the latter fifteen have not as yet been removed but are not in use at this date.

At Old Forge Shaft No. 1, one Babcock & Wilcox boiler of 130 horse power was also erected in 1896 and put in operation November 18, 1896, and is an addition to the boiler power at that place. The pressure carried is 110 pounds.

William Connell & Co.

A plane has been driven from the abandoned workings in the old tunnel in No. 5 vein to the present workings in No. 4 vein; length, 150 feet; sectional area, 84 feet; gradient, 33 1-3 degrees.

The Connell Coal Company.

"William A" Colliery. A plane has been driven having the following dimensions: Length, 230 feet; sectional area, 7 x 16 feet; gradient, 12 per cent.

An opening has also been made from the Marcy vein to the surface.

Lawrence Mine. A shaft for ventilation has been sunk from the upper to the lower drift workings; depth, 26 feet; sectional area, 8 x 8 feet.

Two planes have been driven, one 485 feet long; 7x21 feet sectional area; gradient, 10 per cent.; the other 1,600 feet long; 8x14 feet sectional area; gradient, 2 per cent to 5 per cent.

An additional plane is in course of construction in lower drift.

Jermyn & Co.

Jermyn No. 1 Shaft. A shaft has been sunk for hoisting coal; depth, 220 feet; sectional area, 11 x 26 feet.

West Ridge Coal Company.

The main hoisting shaft was completed to a depth of 556 feet; sectional area, 12 x 30 feet.

A second opening is being sunk from the Clark vein to the China vein; present depth, 80 feet; sectional area, 8 x 10 feet.

A new slope has also been completed in the No. 4 vein: length, 500 feet; sectional area, 6x15 feet; gradient, 4 per cent.

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bottom vein. Length of slope, 1,700 feet, grade, 4 degrees. A four-ton electric locomotive to haul coal 3,800 feet to the foot of main slope has been added during the year.

The Mt. Pleasant Coal Company.

The big shaft has been sunk from the Clark vein to the Second Dunmore, a distance of 135 feet, the shaft being 11x30. The Rider shaft has been sunk from the Clark to the Second Dunmore, distance 134 feet, size of shaft 11x24. A tunnel has been driven from the surface vein near the foot of the little outside shaft to the main hoisting shaft with the idea of footing all the surface coal directly in the big shaft; the tunnel is 7x9, and 100 feet long.

An electric motor, weighing eight tons, has been installed in the surface vein, and an electric pump of the Knowles design, with a capacity of fifty-two gallons per minute has been placed in the third counter of the surface vein.

In the breaker two new screens have been hung up and two screen rooms built. The old drum on the hoisting engine shaft has been taken off, and in its place there is a clutch drum of the latest design.

Pennsylvania Coal Company.

This company has introduced a number of automatic mine doors into their mines during the year. These doors are known as the "Champion" automatic mine doors, manufactured in Terre Haute, Ind.

John & J. J. Jermyn.

Jermyn No. 1 Mine.—A rock plane from the Dunmore No. 2 to the Clark vein has been made during the year 1899. This plane is 16 feet by 7 feet, and 185 feet long, on a grade of 12 degrees. Another similar plane connecting the veins named in another part of the mine was also made; its dimensions are 7 feet by 12 feet; pitch, 9 degrees; length, 360 feet.

An extensive rope haulage has been installed during the year. Its features are its heavy grades and curves of small radius. The cars are hauled a distance of 3,500 feet. The round trip is made in twelve minutes.

West Ridge Coal Company.

West Ridge Mine.—By order of the court the engines, boilers and tower were removed from the head of the main shaft. A pair of 16x10 inch second motion engines were erected in the Diamond vein to hoist through the main shaft from the China vein. The Diamond

workings are connected with the main slope. An air shaft and second opening was sunk from the Rock vein to connect with the China vein; its dimensions are 10x8. It is fitted with hoisting engines and carriage equipped according to law to hoist and lower men.

The Mine Foreman's Examination.

The examination of candidates for mine foreman and assistant mine foreman's certificates was held in the city hall, Scranton, Pa., July 18 and 19, 1899. The following named persons were recommended for certificates:

Mine Foremen.

Thomas E. James, Scranton.
James Hartshorn, Scranton.
William Hartshorn, Scranton.
D. T. Williams, Scranton.
M. T. Walsh, Scranton.
R. Harrison, Moosic.
T. G. Brown, Moosic.
F. MacKinder, Old Forge.
R. P. Thomas, Taylor.
D. M. Harris, Taylor.
Alex. Laird, Moosic.
Charles E. Robertson, Scranton.
F. White, Scranton.
C. Hamsworth, Scranton.

Assistant Foreman.

James W. Reese, Scranton.
Joseph King, Moosic.
Joseph John, Scranton.
B. Amos, Scranton.
R. N. Courtright, Scranton.
W. M. Howell, Scranton.
Charles Richards, Scranton.
George Hopkins, Scranton.
John Morgan, Scranton.
James Regan, Scranton.
A. McHale, Scranton.

Board of Examiners.

James Young, superintendent.
P. H. Salmon, miner.
J. R. Jones, miner.
H. O. Prytherch, District Mine Inspector.

Pennsylvania No. 5 Colliery.—Erected new hay barn on the outside constructed of corrugated iron. One Duplex slushing pump 24x8x36 installed in a building constructed of corrugated iron on the outside; one 21x20 automatic engine with connections to a 240 K. W. and D. C. generator; one 8x10 McEwen generator with 100 ampere for lighting purposes. Installed on the surface in a building constructed of corrugated iron, one electric hoist, 30 H. P., to handle coal in the No. 1 Dunmore vein in the old No. 2 shaft section. At old No. 2 shaft one 18-foot fan was installed in a building constructed of corrugated iron, to ventilate the Clark No. 1 and No. 3 Dunmore veins. One electric hoist, 25 H. P., installed in No. 1 Dunmore vein to handle coal on slope. One electric hoist, 25 H. P., installed in No. 3 Dunmore vein to handle coal on slope.

Gipsy Grove Colliery.—Old Gipsy Grove breaker destroyed by fire on April 27, 1911. Erected a new head frame and constructed coal pockets of concrete and corrugated iron, from which the coal from the Gipsy Grove mine will be dumped and conveyed to the Pennsylvania No. 1 breaker. Erected a new engine house, carpenter shop and wash-house of wood on the surface.

SCRANTON COAL COMPANY

Pine Brook Colliery.—A rock tunnel 6x12x92 feet long on a pitch of 45 degrees was driven through fault from Dunmore No. 2 vein connecting Dunmore No. 2 vein. A rock tunnel 7x12x240 feet long on a pitch of 2 degrees was driven from Dunmore No. 2 vein connecting Dunmore No. 1 vein. Sunk a shaft for second opening 10x10x30 feet deep from Dunmore No. 1 to Dunmore No. 2 vein. Erected concrete fireproof barn. All pump-rooms, engine houses, emergency hospitals and foremen offices inside of mines are of incombustible material.

Mount Pleasant Colliery.—Erected new fireproof barn of iron and concrete. All pumprooms, engine houses, emergency hospitals and foremen offices inside of mines are of incombustible material.

West Ridge Colliery.—Erected a new second opening provided with 360 feet of steps to be used in an emergency in case the steam plant is put out of commission. Cleaned up and provided a new return airway along side of slope, 2,000 feet long, as a traveling way for men and mules.

Also added during the year fire escapes to the breaker, beginning in the tower and continuing down on the outside of the breaker to the ground; also installed other escapeways from the screen rooms making two escapes from this point.

PRICE-PANCOAST COAL COMPANY

Pancoast Colliery.—All barns, engine houses, pump-rooms and air-bridges have been made absolutely fireproof. Fire escapes have been built on both sides of the breaker. A tunnel has been driven from Dunmore No. 4 vein connecting with Dunmore No. 2 vein as an additional outlet from both veins and traveling way. Two 6-inch bore holes have been sunk from the Surface to the Clark vein 430 feet deep for slushing culm into the old workings. One new No. 10 Knowles pump has been installed at the No. 2 Dunmore vein to help take care of the extra water caused by slushing.

THE SPENCER COAL COMPANY

Spencer Colliery.—Ventilation good. Drainage and safety conditions fair.

CARNEY AND BROWN COAL COMPANY

Carney and Brown Colliery.—Ventilation, drainage and safety conditions fair.

BULL'S HEAD COAL COMPANY

Bull's Head Colliery.—Ventilation, drainage and safety conditions fair.

CLEARVIEW COAL COMPANY

Clearview Colliery.—Ventilation and safety conditions fair. Drainage good.

NO. 6 COAL COMPANY

No. 6 Colliery.—Ventilation and drainage fair. Safety conditions good.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery.—Erected a new annex to the breaker. Installed boiler feed pump, four flat slate-pickers, rock pulverizer and fuel conveyor.

Brisbin Colliery.—Rock tunnels were driven from Rock vein to Big vein; New County vein to Big vein; Four-Foot vein to Five-Foot vein. A duplex pump and 2 Jeffrey coal-cutting machines were installed.

Cayuga Colliery.—Erected new wash-house and new fan engine-house. A new fan 18 feet by 6 feet by 5 feet 6 inches was installed. Rock tunnel plane was driven from Clark vein to Diamond vein.

PENNSYLVANIA COAL COMPANY

Pennsylvania No. 1 Colliery.—Rock plane was driven 300 feet from the Fourteen-Foot vein up through the fault to the Fourteen-Foot vein above. Erected the following concrete fireproof buildings inside the mine: Mule barn, barn-boss's house, motor-house, foreman's office and hospital.

Additional slate-pickers were installed in the breaker.

SCRANTON COAL COMPANY

Pine Brook Colliery.—Installed 45 horse power electric hoist in the West tunnel. Tunnel was driven from Dunmore No. 2 vein to Dunmore No. 1 vein on the head of No. 4 plane, for a return airway from Dunmore No. 1 vein.

West Ridge Colliery.—Removed 400 feet of roof for grading purposes.

Mt. Pleasant Colliery.—Tunnel was driven from Dunmore No. 3 vein to Dunmore No. 2 vein for transportation purposes.

plane and branches. A car haul, steam driven, 140 feet long, is in course of construction in the Clark vein for the same purpose. Extended Rock slope No. 14, 300 feet on pitch of 12 degrees, in Dunmore vein, through big fault from top of Eddy Creek anticlinal into Miles basin. An air shaft, 10 by 10 feet, 40 feet deep, and fan drift 75 feet long were completed, connecting with up-cast of Eddy Creek shaft for proposed emergency fan.

Olyphant Shaft.—A second opening and return airway, 7 by 18 feet, was driven from Clark vein to Rock vein, 700 feet on 28 degree pitch. An intake shaft, 12 by 12 feet, to Rock vein, was sunk through 60 feet of wash at face of No. 25 plane near crop.

Bird Eye.—Extended No. 4 slope 150 feet through fall and graded 1,200 feet of slope in Clark vein.

Olyphant Breaker.—Installed a central power plant, comprising one 1,000 K. V. A., 25 cycle alternating generator, directly connected to a Hamilton-Corliss cross compound engine. The voltage is 2,300, and power will be furnished to mine motors in Archbald, Olyphant and Scranton districts. Steam for the plant is provided by two batteries of Sterling boilers, yielding 1,800 H. P. The whole is housed in a brick and steel structure.

Marvine Colliery.—Extended Rock plane 7 by 12 feet, from 14 foot vein to the Diamond vein 1,000 feet on a pitch of 12 degrees to lower coal to 14 Foot landing at shaft. This plane is operated by a 14 by 20 inch Flory engine, located on surface. Extended Rock plane 400 feet on pitch of 12 degrees from No. 4 Dunmore to No. 3 Dunmore vein. Built a new pump room in Clark vein, 17 by 32 by 11 feet, for locating plant to deliver water to 14 Foot vein level.

Legitts Creek Colliery.—Extended Rock plane from Rock to Diamond vein 350 feet on 12 degree pitch for handling coal in latter vein on northwest end of property.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Storrs Colliery.—Installed one 18 by 6 foot fan, including engine and fan house. Remodeled scales. Added two 5 by 6 inch plunger pumps with motors, and one haulage electric motor with reel.

Brisbin Colliery.—Installed one 18 by 6 foot ventilating fan, including engine and house. Built brick and concrete oil house. Made second opening shaft from four foot to five foot vein.

Cayuga Colliery.—Installed one 7-ton electric motor with reel in Dunmore No. 2 vein.

SCRANTON COAL COMPANY

Johnson Colliery.—Built a hospital, 12 by 14 feet, equipped with steam heat, electric lights, hot and cold water, cots and First Aid outfit.

Richmond No. 3 Colliery.—Built a hospital, 14 by 15 feet, equipped with steam heat, electric lights, hot and cold water and First Aid outfit.

West Ridge Colliery.—Built a hospital, 10 by 12 feet, equipped with steam heat, hot and cold water and First Aid outfit.