

was erected thereon. The engine is seventy horse power, connected directly to the shaft of fan. It is used to ventilate the slope workings which were opened the year before.

The Maltby shaft of this company resumed operations in December, 1888, after being idle for four years.

Delaware and Hudson Canal Company.—This company has erected a new breaker at the Delaware shaft, located at Mill Creek. It was started to prepare and ship coal in August, 1888. It is one of the largest and best equipped, with the most improved machinery for the cleaning and preparing of coal that there is in the valley. The shaft workings are ventilated by the old twenty-foot fan that was formerly in operation at Pine Ridge shaft.

At the Laurel Run mines of this company an underground tunnel was driven from the bottom to the top split of the Baltimore seam a distance of eighty feet, likewise an air shaft to ventilate the same a depth of twenty-four feet, which will give good ventilation to this portion of the workings.

Butler Colliery Company.—The Mosier shaft of this company has been sunk from the Marcy to the Powder Mill seam, a distance of three hundred and eighty feet. The air shaft was sunk the year previous, so that the both shafts are now connected in the bottom seam, and the ventilation restored in the proper direction.

The Twin main and air shafts of this company have been sunk to the Powder Mill seam, a distance of two hundred and sixty-three feet. A new fan fourteen feet in diameter was erected on the air shaft, connected directly with a horizontal engine of forty horse power.

The Ravine shaft of this company was sunk to the Powder Mill seam, a distance of five hundred and seven feet, which opens up a large field of good coal for this colliery. A new fan twenty feet in diameter was erected on this shaft, connected directly by a horizontal engine of seventy-five horse power to ventilate this seam. A new air shaft was started from the surface and sunk to the Marcy seam connecting both shafts in this vein, the air shaft not having reached the Powder Mill seam yet, the second opening has not been completed in this vein. This company has likewise built a new breaker to prepare and ship the coal mined in the Twin and Ravine shafts. It is situated close to the Susquehanna river, in the borough of Pittston. It is the largest breaker in the district, and has a capacity of fifteen hundred tons of coal per day, having the latest improved machinery for the preparing of coal for market. All the machinery is covered or fenced off according to law. The coal is taken from the shafts, by two locomotives to the breaker, over a trestling one mile long.

Hillside Coal and Iron Company.—At the Consolidated slope a new fan was erected on a new air shaft, sunk for the purpose of ventilation. It is a closed fan twelve feet in diameter, connected with a horizontal engine by belt gearing. This slope was ventilated by a fur-

The new breaker is quite an improvement on the old one. It is furnished with first-class machinery for cleaning and preparing coal for market. Its capacity will be about 800 tons per day. It was started to prepare and ship coal on August 25, 1890.

Lehigh Valley Coal Company.

At the Maltby colliery a new Guibal fan, 18' diameter, was erected on a shaft sunk for the purpose close to the out-crop of the 11-foot seam on the mountain north of the main hoisting shaft. This makes the second fan at this colliery.

In the Prospect colliery a rock tunnel was driven from the Baltimore to the Skidmore seam, a distance of 250 feet, with a sectional area of 9.1 square feet. A tunnel was likewise driven from the Abbott to the Bowkly seam in the same colliery, a distance of 100 feet. Thickness of Skidmore vein 4' 6". Thickness of the Bowkly seam 7'.

In the Midvale colliery a rock tunnel was driven from the level of old slope in the Hillman to the five foot seam, a distance of 300 feet. Sectional area 91 square feet. Thickness of seam 4'.

In the Henry colliery two rock planes were driven through the strata from the Baltimore. The first to the Hillman seam on a pitch of 25°, a distance of 650 feet. The other was driven to the five-foot seam, a distance of 550 feet on the same pitch. Sectional area 100 square feet. This opens up a large district of coal for this colliery.

At the Heidelberg No. 1 slope a new fan 15' diameter has been erected on an opening driven for the purpose on the side of the hill, back of the slope opening. It ventilates the new workings at foot of slope, and the old tunnel workings which were formerly ventilated by a furnace

Delaware and Hudson Canal Company.

In Pine Ridge colliery a rock tunnel was driven from the top split of the Baltimore seam to the bottom split, a distance of 165 feet. Sectional area 72 square feet.

In the Delaware shaft a new gravity plane was driven on a pitch of 7°, a distance of 1,100 feet, with a sectional area of 128 square feet.

Delaware, Lackawanna and Western Railroad Company.

In the Hallstead colliery an underground slope has been sunk in the red ash seam 400 feet, which opens up the coal to the dip of the old slope.

A new inside plane has been completed 900 feet in the same seam on a grade of 4°. These improvements will increase the output of the shaft considerably, likewise shortening the transportation to the foot of the main shaft.

Wyoming Valley Coal Company.

At the Forty Fort colliery an underground slope was sunk on a line with No. 1 tunnel in the bottom split of the Baltimore seam, with a sec-

how the accident occurred. The theory which I arrived at, was that Ross and Timboy being in the shanty putting the exploders or caps in the cartridges which were thawed out, by some means exploded one of them, as Ross' hand had some of the wire from the exploder driven into it.

The sticks of dynamite were eight inches long and one and one-quarter inches in diameter, of the B. X. climax brand. The explosive power of the exploder or cap was 85 pounds. Luke Michael, one of the headmen, was standing close to the shaft at the time, and had a narrow escape from being blown down the shaft, his wrist being broken, but he escaped without other injuries.

COLLIERY IMPROVEMENTS DURING THE YEAR 1891.

Pennsylvania Coal Company.

In shaft No. 4 a new gravity plane was driven in the Marcy seam, a distance of 153 feet, with a sectional area of 100 square feet.

In shaft No. 9 a new plane was driven in the Red Ash seam, a distance of 485 feet, with a sectional area of 90 square feet.

On the Old Forge shaft No. 2, a new fan 20 feet in diameter was erected, which gives very good results with a working speed of 50 revolutions, exhausting 108,000 cubic feet of air per minute, with a water gauge of 2.75 inches. The engine is a horizontal cylinder 15 by 36 inches, connected direct to fan shaft.

A new fan 20 feet in diameter was erected on a shaft for the purpose to ventilate No. 8 shaft workings; while running 36 revolutions it exhausts 95,000 cubic feet of air per minute, with a water gauge of 2 inches. The engine is a horizontal cylinder 15 by 24 inches, connected direct to fan shaft.

Delaware and Hudson Canal Company.

In the Delaware shaft two inside tunnels were driven from the bottom to the top split of the Baltimore seam, a distance of 45 feet each, with a sectional area of seven by nine feet. Likewise two gravity planes, one 1,000 feet and the other 1,200 feet long, with a gravity of 7°, and sectional area of 14 by 8 feet.

In Pine Ridge shaft an underground tunnel was driven from the top to the bottom split of the Baltimore seam, a distance of 150 feet, with an area of 84 square feet.

Delaware, Lackawanna and Western Railroad Company.

The new breaker at the Pettebone shaft has been completed, which was mentioned in my report of 1889. It is a large and commodious structure. The coal from the shaft being hoisted to the surface and taken to the hoisting tower at the breaker to be rehoisted to the dump. The breaker is well finished throughout, having ample room to clean and prepare a large tonnage of coal. The breaker commenced to prepare coal for market in February, 1891.

COLLIERY IMPROVEMENTS DURING THE YEAR 1892.

Pennsylvania Coal Company.

In Barnum No. 1 shaft, a new Guibal fan 18 feet in diameter, has been erected on the site of the one which was destroyed by the fire, which occurred on the evening of July 22, 1892. The old air-shaft of No. 2 Barnum has been enlarged from the surface to the depth of 150 feet, and a pair of double engines placed to hoist the coal through it from the 7 and 14 foot seams.

Lehigh Valley Coal Company.

In the Maltby shaft a rock tunnel was driven from the bottom of the 11-foot slope to the 6-foot vein, with a sectional area 7×14 feet, opening up a large territory of good coal.

Delaware and Hudson Coal Company.

In Laurel Run slope a rock tunnel was driven from the Checker vein to the lower Baltimore, a distance of 220 feet, with an area of 60 feet, to be used for transportation.

In the Pine Ridge shaft an air-shaft was sunk a distance of $22\frac{1}{2}$ feet, from the upper to the lower Baltimore seam, to be used for ventilation.

In the Delaware shaft three rock tunnels, 8×10 feet area, were driven between the lower and upper Baltimore seams a distance of 40 feet each, to be used for transporting coal, and a new gravity plane was completed, 400 feet long, 8×10 area, with a gradient of 12° .

Butler Mine Company, Limited.

In the Fernwood shaft an inside slope was sunk a distance of 325 feet in the red-ash seam. A new Guibal fan, 12 feet in diameter, was also erected on the second opening to ventilate the workings, exhausting 22,000 cubic feet of air per minute with a water gauge of 3 inches, working speed of 35 revolutions per minute, driven by a horizontal engine, cylinder 10×24 inches.

In the Chapman shaft the second opening has been completed 130 feet in depth, with an area of 10×12 feet. A new fan, 12 feet in diameter, has been placed thereon to ventilate the workings, exhausting 30,000 cubic feet of air, with a water gauge of 2 inches, running 45 revolutions per minute. The fan is driven by a 20-horse power horizontal engine, cylinder 10×30 inches.

Newton Coal Company.

On the twin shaft a large pair of first motion engines were erected in place of the ones which were destroyed by the fire of September 11, 1892. They were built by the Dixon Manufacturing Company, Wilkes-Barre.

A rock tunnel was driven through an anticlinal from the bottom of the shaft in the Red Ash seam, a distance of 300 feet with an area of 7×16 feet which greatly shortens the transportation of coal to the foot of shaft.

Improvements by the Florence Coal Company.

This company sunk a shaft from the surface to the Marcy seam, a distance of 227 feet. It has a sectional area of 220 feet. The coal is taken to the Elmwood breaker by a small locomotive a distance of 1,933 yards. The second opening has not been completed at this writing.

A 15 foot Guibal fan was erected on one of the compartments of the shaft, which is run by a horizontal engine 12x18 inches.

Improvements by Robertson and Law.

A new slope was sunk at the Katydid colliery from the surface to the Checker seam, a distance of 200 feet, area 7x9, grade 18 degrees. The coal from this slope is taken 2,000 feet to the breaker by a locomotive. The workings are ventilated by the Consolidated slope fan.

Improvements by the Babylon Coal Company.

A tunnel was driven from the top to the bottom split of the red ash seam, a distance of 162 feet, area 7x12, to be used for transportation of coal.

Improvements by the Forty Fort Coal Company.

The "Harry E." shaft of this company was sunk from the eleven foot to the red ash seam a distance of 229 feet, area 22x12 feet. The second opening shaft was sunk to the red ash seam at the same time, and a new 20 foot Guibal fan erected therein, run by a vertical engine directly connected to fan shaft.

Improvements by the Delaware and Hudson Coal Company.

Two tunnels were driven in the Delaware shaft, one between the Baltimore splits, a distance of 150 feet, the other to the Ross seam, 300 feet in length, to be used for transporting coal. Two air shafts were sunk to a depth of 30 and 50 feet respectively, to air the workings of these tunnels. Two inside slopes are being sunk on a 15 degree pitch and are 160 and 180 feet down at present.

Improvement by the Mt. Lookout Coal Company.

Electric Power Plant, Mt. Lookout Coal Company, Wyoming, Penna.

The power house containing the generators and engine is a separate brick building forty by thirty feet, situated about two hundred feet from the mouth of the main hoisting shaft and about one hundred feet from the air shaft. The generating plant consists of one M. P. 4. 100 Kilowatt, (135 H. P.) generator, driven at a speed of 650 revolutions per minute and developing 575

A slope is being sunk on the Ross vein from the old Espy tunnel gangway to make connection with the Bliss shaft. This is operated by engines on the surface through a bore hole. The two old Espy slopes have been pumped out and gangways are being driven east and west from them.

Auchincloss.

At this colliery two new hoisting plants have been installed during the year, and are now being used to complete the shaft sinking.

The shafts are now down about 900 feet each. The engines at the main shaft are a pair of 36-inch by 48-inch slide valve engines, the same as described for Bliss, excepting that the drums will each coil 1,800 feet of $1\frac{1}{2}$ -inch rope. These drums are of same diameter as those at Bliss, but of wider face.

At the second opening are a pair of 32-inch diameter by 60-inch stroke engines with Corliss valve motion, being the first engines of this type to be used for hoisting in this region. The cut-off on these engines is controlled by a governor which takes control of the engines upon their reaching the maximum speed, about 3,000 feet per minute in the shaft. When running at lower speeds, the engineer has the same control of the engines with throttle and reverse as in the usual slide valve type.

The drums on these engines are conical, 11 feet 8 inches diameter at small end, and 15 feet, 10 inches diameter at the large end, with cylindrical extension at the large end. They will coil 1,800 feet of $1\frac{1}{2}$ -inch rope each.

One drum is fitted with a clutch, the same as on the "Bliss" engines. As with the others, they are fitted with steam reverse, and two brakes, one of which in this case is operated by steam.

During the early summer, the two shafts at the Auchincloss were walled with concrete, from the rock to the surface, a height in one shaft of somewhat over 100 feet, and in the other of about 80 feet.

The average thickness of these walls is four feet, and the shafts are 12 feet by 43 feet 2 inches inside of walls. The concrete was machine mixed and as many as 1,200 barrels of material, stone, sand and cement were used in 12 hours, making 5 feet height of wall all around the shaft.

Breaker No. 3. Delaware and Hudson Canal Company, Destroyed by Fire.

At about seven P. M., Thursday, November 15, 1894, fire was discovered in the pump room at the main No. 3 shaft of the Delaware and Hudson Canal Company, and every effort made to extinguish it failed. The breaker, pump room, engine and boiler houses were

completely consumed, and the machinery was all irreparably damaged.

There were ten men working in the mine, but all escaped through the Boston shaft without injury. The workings of the two mines are connected.

The fan in the second opening was stopped and the hoisting shaft beneath the fire was converted to an up-cast. No smoke entered the mine workings.

The next morning the company made preparations to build a new breaker about 300 feet west of the location of the old one, which is, by this time, about half finished and will be completed in April or May, 1895. The new breaker is to be covered with sheet iron instead of boards. The engine house will be of brick, and only a simple frame will be erected over the shaft.

A Singular Accident and Happy Escape at the South Wilkes-Barre Colliery.

The New York Retail Coal Dealers' Association visited the Wyoming coal field, about 120 in number, and on Thursday, May 24, under the guidance of the officials of the Lehigh and Wilkes-Barre Coal Company, they started early in the morning to make an examination of the South Wilkes-Barre colliery. After making a cursory examination of the boiler plant, consisting of three batteries of high pressure water tube boilers of 750 horse power and twelve cylindrical boilers, they examined the 35-foot fan and the hoisting engines and outside arrangements. While some were going to see the breaker, the others desired to see the interior workings of the mines.

When ready, nine visitors, in charge of Superintendent Morgan, descended the shaft on the first cage. The second party of nine, in charge of John F. Jones, the mine foreman, was descending, when, to the consternation of all on surface, one of the cylindrical boilers exploded with a loud report. All the hoisting engines and fan at both shafts were instantly made powerless. The flying boiler and debris had broken all the steam pipe lines. Fortunately, Mr. Elmer H. Lowall, the general superintendent, and Mr. W. J. Richards, chief mining engineer, and other officials were at the head of the shaft. Every available man was set to work at once to repair. In fifteen minutes, by plugging a steam pipe, they were able to run the hoisting engines of No. 3, and all the men were hoisted out. The visitors and over 400 workmen were in the No. 5 shaft, 1,068 feet deep, which is the gassiest mines in the country, and no hope for ventilation for an hour at least.

On losing steam the engineer applied the brake and stopped the descending cage within about 20 feet of the bottom, fortunately oppo-

Delaware and Hudson Canal Company.

In the **Delaware** shaft a tunnel was driven from the top split of the Baltimore to the bottom split, a distance of 105 feet. It is used for transporting coal. Sectional area 7x9 feet.

The Laurel Run Colliery, located in the borough of Parson's, which had been operated by the Delaware and Hudson Canal Company since 1869, passed into the possession of the Laurel Run Coal Company on the 1st day of April, 1895, on account of the expiration of the lease.

Newton Coal Mining Company.

Three rock tunnels were driven in this company's colliery from the sixth to the fifth seam a distance of 300 feet each, which are used for the transportation of coal.

Old Forge Coal Mining Company.

An underground slope was sunk in this company's Columbia shaft, a distance of 200 feet; sectional area, 84 feet.

In the Phoenix shaft a tunnel was driven through a fault or roll in the Red Ash seam, a distance of 200 feet; area 7x10 feet. A new plane was erected 500 feet in length with gradient of one foot in five.

A new fan 20 feet in diameter was erected at the Columbia shaft to ventilate the workings of the sixth, or Red Ash seam in both of those shafts which are connected with the upcast to fan. While running 60 revolutions, 164,462 cubic feet of air per minute is exhausted.

Delaware, Lackawanna and Western Railroad Company.

An underground slope was sunk in the Hallstead colliery of this company to a depth of 1,000 feet; 6x12 feet area. A rock tunnel was driven a distance of 398 feet, 6x12 feet which has not tapped the coal at this writing.

In the Pettebone shaft a tunnel was driven 138 feet sectional area, 128 feet. An underground slope was sunk 86 feet on a 25 degree pitch. A new fan 35 feet in diameter, 9 feet face with two inlets enclosed in brick work was put in place. At a speed of 43 revolutions per minute 129,960 cubic feet of air is exhausted with a water gauge of 1 9-10 inches.

Florence Coal Company, Limited.

At the No. 2 shaft the second opening to the Marcy seam was driven to the surface, a distance of 120 feet.

Delaware Mine Fire.

The fire which took place in the Cooper or Top split of the Baltimore vein Delaware shaft located at Hudson, December 13, 1900, mention of which was made in my last report, was successfully extinguished as far as any indications can be discovered by daily examinations of the surrounding territory, by flushing the mine with culm, and the colliery resumed operations in the later part of June, 1902, after being idle for six months. Too much credit cannot be given to those who had charge of the undertaking, and likewise to all the workmen for their persistency in overcoming all the obstacles which were many, as the main roof was crushing and the pillars giving way on the main road to the shaft, and while there was another way for escape, it was such an inconvenient way to bring in supplies, that the main gangway was timbered for a half mile by which they succeeded in holding the gangway open. While this state of affairs prevailed the air current to some extent was destroyed, and the surrounding old workings became filled with the damp from the fire, and between the Laurel Run slope workings east of the fire, a large body of explosive gas had accumulated in the old workings, causing grave apprehension in the minds of all, of the roof caving and forcing the body of explosive gas back on the fire and causing an explosion, therefore on December 29, 1900, I sent the following notice to David J. Williams, inside foreman of Laurel Run colliery.

Pittston, Pa., December 29, 1900.

Mr. David J. Williams, Mine Foreman, Laurel Run Colliery, Parsons, Pa.:

Dear Sir: Please keep all the workmen of Laurel Run colliery out of the mines, as I understand that explosive gas has accumulated to an alarming extent between the inside workings of your mine and the fire in the Delaware workings, until you hear from me.

I am truly yours,

H. McDONALD,
Inspector of Mines.

I would here state that I was at the Delaware colliery on the 29th of December, 1900, and ordered the men out by telephone at 9 A. M., which order was immediately complied with, and when I went to my office, I sent the above notice which I understand Mr. Williams showed to some of the officials, who advised him to keep out of the mine.

While Laurel Run mine was shut down and the men who were fighting the fire had been driven back on account of lack of pure air, a consultation was held and it was decided to close the intake of the Laurel Run mine and connect both ventilating fans on the Delaware workings, as by stopping the Delaware fan they found that the workmen could approach the fire and proceed again with the work of cutting around it.

A steam plant has been projected in the Thomas shaft Red Ash vein from the shaft level up the east rise and driven a considerable distance which will work all the coal to the crop a distance approximately 3,500 feet. A pair of 16x20 inch engines is placed in position to handle all the coal.

A new slope called Butler Marcy slope, has been sunk from the surface in Marcy vein and through the old abandoned workings of the Butler shaft until at the present writing it has reached a distance of 3,500 feet. A pair of first motion 26x36 inch Vulcan engines installed for hoisting the coal, a new engine and fan house were erected and a 20-foot diameter fan built to ventilate the workings.

At the Consolidated colliery, of the above company, the No. 1 slope has been extended 140 feet to the bottom split of Red Ash vein.

DELAWARE AND HUDSON COMPANY

At the Delaware shaft, a new air return has been driven in the Cooper vein, a distance of 3,000 feet, to ventilate the territory covered by the mine fire of 1900, and also to ventilate numbers 19 and 20 tunnel workings.

At the Baltimore slope, No. 5 plane in Baltimore seam has been graded and a pair of engines installed on the surface which operate the plane by rope through a bore hole.

HUDSON COAL COMPANY

At the Laflin colliery a bore hole was drilled near the breaker and crusher plant installed for crushing the refuse from the breaker which is being flushed into the mine.

An engine plane in the Red Ash vein was driven 1,250 feet, a bore hole was drilled from surface to head of plane and a pair of 14x2 inch engines was installed on the surface to operate the same.

At the Laurel Run colliery, a rock tunnel from the Checker to Red Ash vein was driven a distance of 1,050 feet.

A new haulage road has been driven 450 feet toward Pine Ridge workings, to transport the coal up the Pine Ridge shaft to be prepared in the breaker. This road when finished will do away with the Laurel Run breaker.

Mine Foremen's Examinations

The examination of applicants for certificates of qualification as mine foremen and assistant mine foremen, was held on the 15th and 16th of June, at Pittston.

Blasts

March 14, Carmine Gindies, Italian, laborer, was killed by a shot fired in an adjoining working place at No. 5 shaft, Pennsylvania Coal Company.

March 17, Taliesin Williams, American, miner, was instantly killed at Von Storch slope, by returning to shot which he thought had missed fire.

March 22, John Roak, Polish, laborer, was killed at Dickson mine by flying coal from a blast. He walked into a neighbor's chamber after the alarm had been given.

May 16, Pregze Vivdena, Hungarian, miner, was instantly killed at Pancoast mine by flying coal from his own blast.

May 29, John Sepsice, Slavonian, miner, was instantly killed by a blast of coal at Green Ridge slope. The blast exploded just at the instant the miner touched the squib.

August 3, Jeremiah Welton, English, miner, and Charles Parrish, Polish, miner, working on a rock tunnel at the North End mine were instantly killed by returning to the face just as a charge of dynamite exploded.

November 7, Gusti Kuba, Hungarian, miner, was instantly killed at the Pancoast mine, by a blast. He had prepared two shots and thought he heard them explode. He returned to the face and was killed by the flying coal from the second shot.

November 20, Steve Sopt, Polish, laborer, was instantly killed at Tripp slope, Diamond mine, by the flying coal from a blast he fired in the absence of his miner.

November 21, Owen Grogan, American, miner, was killed at Tripp shaft, Diamond mine, by a premature blast caused by the ignition of gas issuing from the hole.

Falling into Shafts

October 12, Gabor Puckle, Hungarian, laborer, was in the cage with a number of fellow workmen, when he fell off and met his death.

November 14, Thomas Rodway, American, company man, fell into main shaft at Brisbin mine, from the surface vein landing, while in the act of hailing the footmen at a lower "foot".

Breaker Machinery

October 11, James Jordan, Irish, slate-picker, was fatally injured in a conveyor line at Brisbin breaker, some distance from his post of duty.

CONDITION OF COLLIERIES AND IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

This company has under construction a new breaker to take the place of the present breaker known as the Diamond. When completed the new structure will prepare the output of the Diamond shaft and drift, and the Tripp shaft and slope.

The ventilation of the mines is good, the drainage is properly attended to, and conditions as to safety are good.

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 DEPARTMENT OF MINES
 PENNSYLVANIA
 IN DEPT. COLO.

Laurel Run.—Number 11 tunnel extended 450 feet to bottom split of Red Ash. Haulage road toward Pine Ridge driven 1,275 feet. Condition of colliery, good.

DELAWARE AND HUDSON COMPANY

Delaware Shaft.—New steel tower erected over main shaft to take place of frame structure. Condition of colliery, good.

TRADERS' COAL COMPANY

Ridgewood Slope.—Condition of colliery, good.

Mine Foremen's Examination

The examination of applicants for certificates of qualification as Mine Foremen and Assistant Mine Foremen, was held on the 19th and 20th of June, at Pittston.

The Board of Examiners was H. McDonald, Inspector of Mines. James McCarty, Superintendent, John J. Morahan and David P. Williams, miners.

The following applicants were recommended for certificates:

Mine Foremen

William H. Muir, Edgar C. Weichel, William Jeffery, Walter J. Hutchings, John Richardson, Patrick Durkin, George Parry, Michael Houston, Albert A. Carey, Samuel Harrison, F. G. Wilcox, E. F. Lewis, James C. Johnston, Charles Johnston, Charles B. Smith, William Moore and Michael Connors, of Avoca; William Fowler, John Henighen, Benjamin J. George, F. W. Campbell, Patrick J. Hopkins and John E. Davis, of Pittston; Charles Pyne, Reese Bennett, Wyoming; Evan Fulton, Edwardsville and Morgan Mainwaring, Dupont.

Assistant Mine Foremen

George Steel, Michael Price, James Thompson, Daniel R. Jones, Pittston; George P. Kearney, John Killeen, Inkerman, William Llwellyn, William Branch, Wilkes-Barre; Henry R. Kettle, H. B. Bittenbender, Plymouth; Samuel Prichard, Edwin Jones, Edwardsville; John Vinton, John Harris, Plains; Thomas Hughes, Parsons and David Thomas, Avoca.

A mule stable in the Red Ash vein was extended and made ready for more mules.

At Coal Brook slope, a new plane, 7 x 14 feet and 186 feet long, was completed between the No. 29 tunnel and No. 35 tunnel levels.

HILLSIDE COAL AND IRON COMPANY

Butler.—Erected a new concrete building, 94 x 40 feet, with an annex 40 x 60 feet, fire-proof throughout, to be used as machine, car and blacksmith shop.

At Fernwood a new slope, 7 x 12 feet and 1,000 feet long, was driven on the west rise, from the surface to the bottom split of Red Ash vein, to open up the Fernwood mines to deliver the coal to the Butler breaker. A tunnel was also driven off the new slope to the middle split of Red Ash. A new plane opening was driven from the Fernwood to the Clarence mine, 7 x 12 feet and 400 feet long, the coal to be taken up the Fernwood slope, thence to the Butler breaker.

In the Thomas shaft, a tunnel, 7 x 12 feet and 38 feet long, was driven from the middle split to the bottom split of Red Ash, for developing purposes.

DELAWARE AND HUDSON COMPANY

Delaware.—The new shaft in the course of sinking was sunk 160 feet from the surface and will be continued to the Red Ash vein.

The Mill Creek air shaft was extended 105 feet to the Ross vein; No. 7 rock slope was sunk 1,100 feet to the Red Ash vein; No. 10 plane in the Ross vein was extended 900 feet; No. 8 slope Ross vein was sunk 1,100 feet towards the North basin. A return airway in the Ross vein was driven 300 feet towards Mill Creek air shaft.

DELAWARE AND HUDSON COMPANY

Delaware Colliery.—A new shaft 12 by 36 feet was sunk from the surface to the Red Ash vein, a distance of 490 feet. A 10-inch concrete lining was built between the airway and pumpway from bottom to top of shaft. A Guibal fan 20 feet in diameter was installed on the upcast shaft. A pair of hoisting engines, 26 by 48 inches, was installed at head of shaft. A return airway was driven from No. 7 slope in the third vein to new shaft, a distance of 500 feet.

structural steel house, retail pockets and scales for retail sales were installed and Spring Brook water main was tapped to supply the company houses.

Inside: Built four additional concrete stalls in the Red Ash barn to accommodate more mules. Laid double track No. 8 slope, in Red Ash vein, from foot of No. 5 plane to shaft level. Built concrete hospital in Baltimore vein slope. Floor of air bridge in return leading to the shaft in the Red Ash vein was replaced by concrete.

DELAWARE AND HUDSON COMPANY

Delaware Colliery.—No. 1 shaft was concreted from top of rock to surface, and concrete lining put between air shaft and hoistway.

McCAULEY COAL COMPANY

Pickaway Colliery.—This company's breaker was burned May 4 and the colliery shut down until new breaker was completed in December. Operations resumed December 8. The breaker has a capacity of 300 tons a day. The machinery is all protected by railings or covered over.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the Y. M. C. A. Hall, Pittston, April 22 and 23. The Board of Examiners was composed of H. McDonald, Mine Inspector, Pittston; H. T. McMillan, Superintendent, West Pittston; John Gravell, Miner, West Pittston; James Martin, Miner, Avoca.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

James Donaldson, Avoca; Hugh MacDonald, Plymouth; William F. Cosgrove, Parsons.

ASSISTANT MINE FOREMEN

Richard M. Williams, Thomas Farrell, Albert J. Coles, Thomas F. O'Malley, Avoca; Herman Schultz, James A. Donohue, James Duffy, Morgan I. Watkins, Parsons; Thomas Robertson, Inkerman; James A. Hennigan, Pittston.

Outside. Completed a brick, iron and concrete power house 38 by 96 by 16 feet, and installed therein one 330 H. P. McEwen engine driving D. C. generator to furnish electricity to Nos. 5, 6 and 11 shafts. Also completed a concrete, iron and brick building for sand-dryer, cement-house, lime, hay, feed, hospital and storeroom.

Number 14 Colliery.—At the Red Ash shaft installed a hoisting and a fan engine, and built houses for same. Also built an addition to No. 2 tower. At the Hillman slope installed an engine, and built a house for same.

Ewen Colliery.—Inside: Sunk an air shaft, 12 feet by 14 feet, from surface to the Marcy vein at Hoyt shaft. A new concrete pump-room was built in the Schooley shaft, Pittston vein, and a Jeanesville pump, 24 by 48 by 12 by 36 inches was installed therein.

Outside:—Erected a new concrete and steel breaker and washery to replace the breaker destroyed by fire on December 11, 1914. Installed a 14-foot fan, enclosed in a brick building, to ventilate workings in the Hoyt shaft. At the Schooley shaft, a new washery was erected to prepare coal taken from the culm bank for steam purposes.

DELAWARE AND HUDSON COMPANY

Laffin Colliery.—Extended No. 4 plane, Red Ash vein, a distance of 250 feet.

Delaware Colliery.—Extended No. 14 plane in the Red Ash vein, 350 feet through fault to the workable coal beyond. Completed a tunnel, from No. 7 plane Ross vein, a distance of 500 feet, to cut veins in back basin.

Pine Ridge Colliery.—Completed No. 26 slope, Checker to Bennett vein, and No. 30 slope in Red Ash vein was extended a distance of 250 feet toward the basin.

HILLSIDE COAL AND IRON COMPANY

Butler Colliery.—Completed the water tunnel to Fernwood to take the water to the Pittston water tunnel.

LEHIGH VALLEY COAL COMPANY

Mineral Spring Colliery.—Inside: A fire line was installed in the Red Ash vein.

Outside:—A concrete dam was constructed at the reservoir to increase capacity of same. Completed structural steel work under an empty car trestle. Drilled a bore hole from the surface to the Red Ash vein, a depth of 265 feet, to conduct signal wires from outside engine house to No. 5 plane.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the Y. M. C. A. Hall, Pittston, May 18 and 19. The Board of Examiners was composed of Hugh McDonald, Inspector; H. T. McMillan, Superintendent, West Pittston; Frank J. Parks, Miner, Pittston; and Michael J. Ford, Miner, Pittston.

The following persons passed a satisfactory examination and were granted certificates:

Delaware Colliery.—The following tunnels were driven: No. 29, Ross to Red Ash, 1160 feet; No. 30, Red Ash through fault, 850 feet; No. 31, Ross to Checker, 330 feet; No. 32, Ross to Checker, 250 feet; No. 33, Cooper to Five foot, 320 feet. Drove No. 17 plane from Ross to Bennett, 210 feet.

Pine Ridge Colliery.—Extended Laurel Run No. 4 plane 450 feet to the surface for a manway. A second opening connecting No. 19 plane, Red Ash, with Delaware, was extended 160 feet.

The breaker was remodeled and improved.

Baltimore No. 5 Colliery.—Two tunnels, 170 feet long, were driven from the Red Ash to Top Split and one 190 feet from the Abbott to Snake Island.

The Baltimore landings at Conyngham and No. 4 shaft and the Red Ash landing at Baltimore No. 5 shaft were secured by concrete walls and steel beams.

LEHIGH VALLEY COAL COMPANY

Mineral Spring Colliery.—Two concrete fire boss stations were constructed; one in the old slope at Jones lift and the other at the foot of No. 2 shaft, Red Ash vein.

Concrete floor was laid in the carpenter shop, partitions torn out and steel columns substituted for roof support. A substantial concrete platform was constructed in front of the ware-house and minor improvements were made on the inside.

EAST BOSTON COAL COMPANY

East Boston Colliery.—Drove tunnel from Eleven Foot to Bennett, new Bennett slope.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Kingston, June 6 and 7. The Board of Examiners was composed of John B. Corgan, Inspector; Gilbert Jones, Superintendent, Dorranceton; Thomas Thornton, Miner, Parsons; Charles Semanski, Miner, Swoyersville; John J. McNelis, Clerk, Luzerne.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Patrick H. Conway, Old Forge; James Dixon, Hudson; John J. Llewellyn, Wilkes-Barre; Frank Davitt, Miners Mills; Timothy Cronin, Nathaniel Dixon, Parsons; William F. Corgan, Luzerne; John Hosey, Kingston.

ASSISTANT MINE FOREMEN

Ellsworth Austin, Joseph Loscoskie, Con Maloney, Thomas Summerson, Parsons; Thomas Bottoms, Jr., Michael J. Condon, Mark Luksic, Louis Sulzbacher, Luzerne; William Brazill, Miners Mills; Albert Joseph Bevan, Wilkes-Barre; Anthony John Mattick, Anthony M. Sudnick, Benjamin Eckertt, Hudson; Thomas Nankwell, Cecil Ninness, Plains; Martin Shields, Forty Fort.

CONDITION OF COLLIERIES

DELAWARE AND HUDSON COMPANY

Baltimore No. 5 Colliery.—Ventilation, roads, drainage and condition as to safety, good.

Pine Ridge, Delaware and Laffin Collieries.—Ventilation, roads, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Mineral Spring Colliery.—Ventilation, roads, drainage and condition as to safety, good.

TRADERS COAL COMPANY

Ridgewood Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

HADDOCK MINING COMPANY

Black Diamond Colliery.—Ventilation, roads, drainage and condition as to safety, fair.

EAST BOSTON COAL COMPANY

East Boston Colliery.—Ventilation, roads, drainage and condition as to safety, fair.

WILKES-BARRE COLLIERY COMPANY

Madeira Colliery.—Ventilation and condition as to safety, good. Drainage and roads, fair.

RAUB COAL COMPANY

Louise Colliery.—Ventilation, roads, drainage and condition as to safety, fair.

CONLON COAL COMPANY

Conlon Colliery.—Ventilation, roads, drainage and condition as to safety, good.

CENTRAL COAL COMPANY

Wyoming Colliery.—Ventilation, roads, drainage and condition as to safety, good.

HEALEY COAL COMPANY

Miners Mills Colliery.—Ventilation, roads, drainage and condition as to safety, fair.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Delaware Colliery.—Rock plane, Checker to Bennett and Cooper beds, 260 feet; second opening, Red Ash and Three Foot, No. 29 tunnel, 175 feet; air return, No. 19 plane Red Ash, 290 feet.

CONDITION OF COLLIERIES

HUDSON COAL COMPANY

Pine Ridge Colliery.—Ventilation, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Henry and Mineral Spring Collieries.—Ventilation, drainage and condition as to safety, good.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone Colliery.—Ventilation, drainage and condition as to safety, good.

EAST BOSTON COAL COMPANY

East Boston Colliery.—Ventilation, drainage and condition as to safety, good.

HADDOCK MINING COMPANY

Black Diamond Colliery.—Ventilation, drainage and condition as to safety, good.

WILKES-BARRE COLLIERIES COMPANY

Madeira Colliery.—Ventilation, drainage and condition as to safety, good.

TRADERS COAL COMPANY

Ridgewood Colliery.—Ventilation, drainage and condition as to safety, good.

RAUB COAL COMPANY

Louise Colliery.—Ventilation, drainage and condition as to safety, good.

JOHN CONLON

Conlon Colliery.—Ventilation, drainage and condition as to safety, good.

CENTRAL COAL COMPANY

Wyoming Colliery.—Ventilation, drainage and condition as to safety, good.

HEALEY COAL COMPANY

Miners Mills Colliery.—Ventilation, drainage and condition as to safety, good.

IMPROVEMENTS

HUDSON COAL COMPANY

Delaware Colliery.—Completed a rock plane from Rose to Cooper vein; tunnel through fault in Ross vein, 480 feet long; rock plane from Ross to Top Ross vein, 117 feet long; and a second opening and air return from Red Ash to Three Foot bed.

Pine Ridge Colliery.—Completed No. 42 tunnel from Ross to Checker vein; No. 41 tunnel from Ross to Checker vein; rock plane from the Red Ash to the Three Foot bed, with return airway 22 feet