

Dennis Mulligan's mine is another sample of hap-hazzard work, there being no system of entries or regular circulation of air. The works resemble a labyrinth, and at no point could a measurement of the air be taken except at the furnace. I left instructions to have a map of the mine made, and escapement constructed.

The worst of the lot of poorly-worked mines was that of F. Moon. There were no regular roadways, and no circulation of air. The timbering was very much rotted or fallen away, and had not been restored, and the only place of escape had been allowed to close in through neglect. It was certainly one of the most dangerous and shamefully neglected mines in the district. I directed the roadways to be retimbered, a correct map of the workings to be made, the ventilation to be brought up to the legal standard, and an escapement to be constructed before resuming operations.

All the small mines on Lamarsh creek are in poor condition, and with only one place of egress. I notified them all personally or by letter to make the necessary improvements, in compliance with the law.

LOGAN COUNTY.

The Lincoln Coal Mining Co., Lincoln, has been in operation over 15 years, and, until this spring, has had no escapement shaft. It is now, however, completed, and communication established with the hoisting shaft. The air in this mine was found very deficient, the supply being hardly sufficient for the mules alone. This state of things was, however, gradually improved under my directions, and on my last visit a fan was ordered, which is doubtless before this in operation, of sufficient capacity to ventilate the works properly.

The Citizens' Coal Mining Co., Lincoln, has a first class equipment, and a new mine, laid out now with double entries, and abundantly ventilated.

The Mt. Pulaski Coal Co. has been in operation only about a year. The seam is irregular, and difficult to work, owing to clay seams and "horsebacks." On this account the shaft was sunk to a lower seam, but it was not considered desirable to work it, and mining is continued in the upper seam. They have a fan, and the outfit and general condition is good.

McLEAN COUNTY.

THE McLEAN COUNTY COAL COMPANY—BLOOMINGTON.

The extensive mines of this company have been in operation seventeen years. Two seams are being worked, both on the long-wall principle, the upper one being 400 feet, and the lower one 5-1 feet below the surface. An inclined plane connects the two, and the coal from the upper seam is run down to the lower, and all coal is hoisted from the bottom of the shaft. The pit cars are hauled in and out by tail-rope, operated by a 60 horse-power engine, and 25 one-ton cars can be hauled at each trip. The system works

well and is considered an economical method of hauling their very large output. They are producing from 500 to 700 tons per day, and have a capacity for 2,000 tons with their present equipment.

An eight-and-a-half-foot drum at the head of the inclined plane, between the two seams, is operated with double wire ropes to draw up the empty cars, and let down the loaded ones. Each one of the two cables is capable of holding 10 loaded one-ton cars, but only 5 are let down at once. The loads going down heave up the empty cars, and the drum is controlled by a simple lever-brake, so as to stop the loaded cars at will at any point on the incline.

The escapement shaft, recently completed, is 5x10 feet in dimensions, strongly timbered, and provided with stairways, hand-rails and convenient landings from the top to the bottom intersecting both seams. It is doubtless the most complete and costly escapement shaft in the State.

The works are ventilated by a 10-foot fan, which, driven at the rate of 65 revolutions per minute, was found to give 22,656 cubic feet of air; at the rate of 85 revolutions, 23,872 feet. and for 147 revolutions, 37,403 feet per minute. As their working force requires 22,000 feet per minute, the fan is kept at a speed of only 65 revolutions. They can not allow the whole of this current to circulate around the faces, the velocity being too great. About half of it is kept on the roadways, and swinging check-doors turn the air to the working faces at intervals, renewing the freshness of the current.

Mr. Radford, the underground manager, is preparing to split the current, which will further improve the character of the ventilation.

This is a model mine both in its construction, equipment and management, and deserves most favorable mention.

MENARD COUNTY.

The mines in this county are in very fair condition. One at Tallula has been abandoned this season.

J. C. Cabanas, Petersburg, has a mine which does not show the best of management, though it has more than the legal amount of air. He had no escapement shaft, but by changing the position of the furnace he was enabled to make use of his air-shaft as a place of egress.

T. F. Lanning, Petersburg. This mine has ventilation largely in excess of the legal requirement. At the upcast the volume was 13,000 feet for 56 men. They are introducing the single entry system here, driving with English brattice cloth until a given section is cut out.

THE PETERSBURG COAL COMPANY.

This company has a well appointed mine, employing over 100 men and six mules. Ventilation abundant. The coal is from six to seven feet thick, but it has a very variable top requiring considerable care and expense for timber. A commendable practice in this mine is the driving of a blind entry between each pair of cross

entries, as soon as they are worked out, to increase the ventilating facilities. By this means the air-courses are greatly shortened and improved. This company shows an evident desire to anticipate and keep in advance of legal requirements.

GREENVIEW COAL COMPANY.

This mine is in very fair condition and is worked on the double-entry system. It has enough air in circulation if properly conducted, but by using screens, for the most part in dilapidated condition, instead of doors, much of the air is wasted. Mr. Wadsworth, Superintendent, proposes to remedy this defect in the ventilation.

I had been informed that this company did not weigh the miners' coal and was requested to enforce the law in this respect. Believing it my duty to do so, I made an effort in that direction, but found that I was powerless in the matter, owing to the fact that the miners had entered into a special agreement with the company for the purpose of evading this provision of the law.

The Athens Coal Company has good ventilation, but their escapement is too small. Otherwise the place is all right.

An escapement has been sunk this year at the Sweetwater mine.

CASS COUNTY.

THE CASS COUNTY COAL COMPANY, ASHLAND.

This is a co-operative company composed of coal miners, who at great cost of labor have sunk a shaft 205 feet, only to find 30 inches of coal. They have no trade except to supply the local demand. The time has already expired in which they should have had an escapement, but I do not suppose they will be able to sink it.

THE VIRGINIA COAL AND WATER Co., VIRGINIA.

This company has a three-foot seam of good quality, which they are just opening, though not in good shape. If the workings were properly laid out on the long-wall system, and a market were secured, the property could be made to pay. An escapement was begun, but work was subsequently suspended because they could not secure railroad facilities for shipping. On my last visit only six miners were at work, merely for the purpose of keeping the place in workable condition, and I allowed them to continue while negotiations with the railroad company were pending.

TAZEWELL COUNTY.

This county has eight mines, though one of them—Vaglesang's, at Hilton,—has this year been worked out.

The principal mine is operated by D. M. Alexander, and has been worked for fourteen years. The air-courses are consequently

long, and although the amount of air passing was really up to the legal standard, it was impregnated with so much carbonic acid gas as greatly to impair its quality. The company, however, opened a new air-course, shortening the distance and improving the ventilation. They had no escapement shaft, but I induced them to order a fan and get the use of the air-shaft for place of egress. On my last visit they had only to attach the engine to the fan to have it in operation. This improvement will give them rank among the better class of mines.

Rundle & Goold's mine was found in good condition, but they had no escapement shaft. Subsequently they constructed a good one, with stairs and railings from top to bottom.

J. B. Ledterman's mine is poorly managed, though well ventilated. I had some trouble to get him to sink an escape shaft, being obliged to take legal proceedings. On my last visit, however, the new shaft was within ten feet of the coal.

Norman C. Hawley is working rather an old mine, fairly conducted, and well ventilated. The road to the escapement was blockaded, but subsequently cleaned up. He enlarged and retimbered his hoisting shaft and covered his top buildings with corrugated iron, to render them fire proof. The only thing now wanting is a brake on the drum, which he has promised to put on.

Mr. Dissman's mine, four miles from Pekin, required retimbering at the bottom of the shaft, also an escape shaft. He put in the timbers and sunk the shaft.

G. Millard's shaft was frozen up last winter, and he informed me he should not attempt to do any more work that season. I instructed him to put in an escapement shaft before resuming operations.

Ruche Bros. only work a few men during the winter, but had good air and an escapement.

WOODFORD COUNTY.

THE CHICAGO AND MINONK COAL MINING Co., MINONK.

This company has been in operation for fifteen years. It has an extensive plant, a large business, and a deep shaft to a thin seam of good coal. This is generally considered the No. 2 seam, but I was informed by Mr. McDonald that two workable seams had been found below it, so that it may really prove to be No. 3. There were 258 men and 18 mules at work in this mine, and the ventilation was very defective. Several measurements of the air, both at the in-take and up-cast, disclosed the fact that the current was really barely sufficient for the animals. The stables were also placed at intervals along the in-take air-course, which still further impaired what feeble current there was in circulation. To remedy this condition of things, the company erected a ten-foot fan, driven by a 45 horse-power engine, and reversed the current. On a subsequent visit, I found 17,028 cubic feet of air passing, which was still further increased by enlarging the fan blades. An escape shaft had been