

limiting the number of miners, and consequently the output; but since the Morgan seam will be operated on from the entrance of the No. 1 Mine, and its output will also be handled in conjunction with the output of the No. 1 Mine without any additional labour being employed between the mine and the storage-bins, the cost of production from this mine will be lessened.

*No. 3 Mine*, situated near the bins, from which the principal part of the output of this colliery was obtained, was for the greater part of the year worked on two shifts. Since the fault referred to in my previous report has been crossed over and a moderate area opened up it has been the means of enabling all the men to be employed on one shift, which is more satisfactory in every respect.

A main haulage-road has been constructed from a point near the bins, connecting with the mine-workings in as central a position as was possible, and it is expected that the same will be put into commission at an early date.

#### *Surface Works.*

The whole of the surface works and machinery have been maintained in efficient working-order, and during the year several alterations and additions were carried out, as follows:—

The screened-coal conveyer at the storage-bins was extended, thus enabling the coal to be delivered direct into the railway-wagons and minimizing the breakages considerably.

The unscreened-coal storage-bin was reduced, and the small-coal bin correspondingly increased. An elevator was also installed for elevating the small coal from beneath the shaking-screen. From the elevator the coal is distributed to any required part of the bin by means of chutes automatically arranged.

Near the storage-bins a new lamp-room was built and fitted with a charging-stand and other appliances necessary for dealing with the Gray-Sussman electric lamps; also a large stable and feed-house to enable the horses to be brought out of the mine daily.

At the power-house midway between the storage-bins and the upper section of the haulage-road an air-compressing plant was erected to supply power for driving a fan engine, and also a dip-haulage engine at the No. 3A Mine.

At the upper section (No. 1 Mine) an endless-rope haulage was installed, dispensing with horses. A large Sirocco fan has also been erected, and a cable line laid for conveying power from the power-station for driving this fan, which is so situated that both the No. 1 Mine and the underlying Morgan seam can be ventilated by it.

#### *Exploratory Work.*

Work under this head was confined to boring and surface prospecting in various parts of the reserve.

Boring operations were carried out between the No. 3 Mine and Spring Creek, off the service tramway, and also between Spring Creek and the main haulage-road near the upper terminus. The former boring operations were carried out with the object of proving whether the seam at present worked in No. 3 Mine existed beyond where some disturbance had been encountered in the main level of that mine. Three bores were put down, each proving the continuity of the seam, but at a much deeper level. The seams penetrated were also so much intersected with dirt-bands that it was not deemed advisable to recommend any expenditure in the development of that area.

The latter boring was carried out with the object of ascertaining the depth to the seam that had been located on the banks of Bishop Creek and dipping south. This hole was bored to a depth of 650 ft. and abandoned, it having proved that the coal was too deep to be commanded by the present haulage-road. Surface prospecting was carried out for a short period on the western part of the reserve, but when, as above stated, it was proved by boring that practically all coal on the western part of the field was too deep to be commanded by the present haulage this work was discontinued.

#### *Future Development-work.*

The principal work under this head for some considerable time to come will be confined to developing the Morgan seam, which has been proved by bores to exist over a considerable area. This seam has now been connected with the No. 1 Mine by means of a cross-measure drift, but so far very little development-work has been done, it being impossible to do so until the second connection, which is now in the course of construction, is completed.

When the seam was struck in the drive the coal appeared to be of a soft nature, with signs of being disturbed by faulting. Subsequently the presence of a fault was conclusively proved, for when driving east to make ready for the second connection an upthrow of 20 ft. was encountered. Further driving beyond the fault shows considerable improvement in the hardness of the seam.

As this seam when passed through in all the bores appeared to be of a hard nature, there is every reason to expect that the seam will improve as the workings are extended from the line of this fault.

#### **ELECTRIC SAFETY-LAMPS.**

During the last few years the question as to the advisability of installing electric lamps in the coal-mines of the United Kingdom has been a very live one, and, although considerable extension in the use of these lamps has taken place, the results obtained at several collieries were not the success anticipated. To make a success of these lamps a great deal more depends on the management of the lamp-cabin and the care exercised by those who use the lamps than appears to be generally known.