The intake air enters the compressor through a short length of pipe 4 in. diameter, projecting through the end of the building into the external air. To prevent dust and foreign substances being drawn into the compressor, we built a wooden box or shaft, 22 in. by 12 in. in section, and 16 ft. in height, against the end of the building and enclosing the end of the intake air pipe. The air being thus drawn from a point above the roof of the building, is free from dust and smoke.

The compressed air is conveyed from the air receiver down the shaft and into the workings by wrought iron pipes ; these pipes are 6 in. diameter from the receiver for a length of 2,467 ft ; thence they are 5 in. diameter for 1,152 ft. farther ; thence 4 in. diameter for the next 860 ft., to air receiver No. 2. This receiver, made of steel plates, is 8 ft. long by 30 inches diameter, and near it stands pump No 1. The pump, situated at 4,479 ft. from the air compressor, is a Northey duplex, having 7 ½ in. air (or steam) cylinders, 4½ in. plungers and 10 in stroke ; it works at the average 100 strokes per minute, forcing the water to an elevation of 209$\frac{1}{6}$ ft. through 3,590 ft. of delivery pipe of 5 in. diameter. The water delivered, deducting 5 per cent. from the calculated delivery for slip of pump, is 54$\frac{1}{6}$ imperial galls. per minute.

From air receiver No. 2, the pipes are continued of 4 in. diameter for 1,150 ft. down the engine plane ; thence they are only 3 in. diameter for 400 ft farther to air receiver No. 3. This receiver is of same dimensions as receiver No. 2, and from it the 3 in. air pipes are continued 120 ft. farther, to pump No. 2. This is a Worthington duplex pump, having 4½ in. air (or steam) cylinders, 2¾ in. plungers, and 4 in. stroke. This pump, situated at 6,149 ft. from the source of the motive power, works at 90 strokes per minute, forcing 7$\frac{1}{6}$ galls. of water per minute to an elevation of 155 ft. through 1,700 ft. of delivery pipes, of 2½ in. diameter ; it delivers its water to pump No. 1, which forwards it to the shaft bottom.

It was determined to apply the compressed air taken in bye to such a distance, to the operation of two coal cutting machines, and a winch to assist the underground haulage ; as well as to working the two pumps above described. The winch having two cylinders, each 7 in. diameter by 12 in. stroke, was fitted with a drum of 26 in. diameter, on the second motion of 5½ to 1, and was set up in the vicinity of pump No. 2. The wire rope by which this winch hauls 4 or 5 boxes of coal at a trip up an