

The details of the screening-plant are as follows:—

The Tippler is 6 ft. 6 in. in diameter, two-speed type, is designed to prevent the spilling of coal, and is fully automatic in action.

The coal will be discharged on to an inclined, reciprocating, balanced screen 5 ft. wide and 55 ft. long, which will screen to $+1\frac{1}{2}$ in. and also from $-1\frac{1}{2}$ in. to $+\frac{3}{4}$ in. The coal over $1\frac{1}{2}$ in. in size passes over the screen, and is delivered on to a 3 ft. wide flat rubber loading and picking band. The material through the $\frac{3}{4}$ in. mesh is delivered by a fixed chute on to a balanced, horizontal, high-speed screen which screens out material less than $\frac{1}{4}$ in. The $-\frac{3}{4}$ in. to $+\frac{1}{4}$ in. material passes over this screen, and is delivered on to a 2 ft. 6 in. loading-band, and all the $-\frac{1}{4}$ in. mesh is delivered to a hopper to be loaded into wagons. By means of doors in the screens, and fixed chutes, it will be possible to make the following sizes and mixtures: $+1\frac{1}{2}$ in.; $-1\frac{1}{2}$ in. to $+\frac{3}{4}$ in.; $-\frac{3}{4}$ in. to $+\frac{1}{4}$ in.; slack and also run-of-mine coal.

Flat rubber bands are to be used for picking belts. Each has a hinged lowering jib for loading the coal into the wagons without breakage.

The contract for the supply of the whole of the plant has been let to English manufacturers. The plant is capable of screening 120 tons of coal per hour.

Work of extending Rope Road from James Bins to Nine Mile.—From the bins a haulage road two and a half miles in length and rising steadily to the coal-seam some 400 ft. higher is being formed. The lower portion of that haulage road some 140 chains long has been used for some years to convey coal from the present James Colliery, but of that 140 chains some 12 chains has to be regraded by cutting into the stone roof above the James seam. Beyond the regrading, a new tunnel has to be driven 30 chains in length above the present James Mine haulage road, and to the outlet at Cannell Creek. From Cannell Creek to the Nine-mile Creek another tunnel 37 chains long is being driven. The haulage road then follows along the southern bank of the Nine-mile Creek for 32 chains and in a line with the stone drive about 27 chains long being driven to intersect the coal-seam.

Up to 31st March, 1938, nearly 49 chains of driving had been completed, leaving 61 chains of further driving to be done.

In place of ordinary rails laid on 8 in. by 4 in. timbers on the rope road it was found to be more economical to use 90 lb. rails, $6\frac{1}{2}$ in. in height, and the side of this road on which the full tubs run is laid throughout with these rails.

Viaduct.—The steel viaduct near the new mine-entrance is 400 ft. long with a maximum height of 35 ft., and has been completed.

Coal will be hauled along the $2\frac{1}{2}$ -mile rope road by means of an endless rope-road hauler, driven by a 75-horse-power totally-enclosed fan-cooled slip-ring motor, equipped with remote control. The whole of the plant complies with British Board of Trade specifications for electrical plant to be used in fiery mines.

Mine Tubs.—Seven hundred (700) steel mine tubs, each of 15 cwt. capacity, are being constructed in the Railway Workshops, Addington.

Compressor-house.—The compressor building has been completed and will house three compressors; two capable of compressing 600 cubic feet of free air per minute, and one of 400 cubic feet capacity, all compressing air to 110 lb. per square inch. Two of the machines have already been installed.

The 11,000/400 V. transformer is housed in a concrete cubicle alongside the compressor house.

Bathhouse.—A reinforced-concrete bathhouse, 60 ft. by 40 ft., with walls 14 ft. in height, is being erected adjacent to the mine-mouth. Owing to the country thereabouts being more or less slip country, the bathhouse had to be built on concrete columns founded on rock approximately 26 ft. below the floor level.

The bathhouse is designed to accommodate 100 men, and provision is made for an extension to accommodate a further 100 men. The drying arrangements are designed on the latest air-conditioning and heating method. The hot water to the heater unit is supplied by a boiler consisting of 55 Babcock Wilcox boiler tubes set in brickwork, and is heated by an automatic stoker equipped with a thermostatic control. The thermostat so controls the heater that there is no waste of fuel. During the period of a heavy draw off the stoker can be operated in No. 3 gear feeding 350 lb. of coal per hour till the water is raised to the correct temperature, and then changes into No. 1 gear feeding 100 lb. of coal per hour.

The hot water is fed to a heating unit consisting of two hot-water-heating coils, each 36 in. by 24 in. by $7\frac{1}{2}$ in., two-row, capable of raising 3,500 cubic feet of air per minute from 60° to 150° Fahrenheit. A pump, direct coupled to a $\frac{1}{6}$ -horse-power electric motor, and capable of delivering 15 gallons of water per minute against a 5 ft. head, is attached to the return pipe of the heater unit, and is automatically controlled by a thermostat in the drying-room. The thermostat has a range of adjustment from 40° to 280° Fahrenheit, and can be set to control the air within a limit of 5° to 10° Fahrenheit.

A $17\frac{1}{2}$ in. Sirocco fan driven by an electric motor is attached to the air-heating unit and forces the air through suitable ducts to the damp clothes. The ducts are so arranged that cold air can be drawn in from the outside of the bathhouse, or a damper can close off the outside air, and the fan then circulates and recirculates the air in the drying chamber and bathhouse. The hot air is exhausted from the drying-room under the doors leading to the central part of the bathhouse.

Workshops.—A concrete workshop, comprising fitting, blacksmiths, carpenters, and electrical workshops, 79 ft. by 25 ft., has been constructed adjacent to the railway at Rapahoe, and the following plant has been installed, and is now in use: Power hacksaw; screwing-machine; electric drill; electric-power hammer; circular and band saws; vertical bench drill; two electric grinders; radial drilling, boring, tapping, and studding machine; buffer planer; screw-cutting lathe; electric-welding and oxy-acetylene-welding plants. The whole of the above plant is driven by a 15-horse-power electric motor.