

Donnellson, Montgomery county. The shafts are 380 feet deep as finished to the bottom of the coal. The hoisting shaft has two hoisting compartments 6 by 9 feet 6 inches in the clear. The buntons are 8 by 8 inches, with an 8-inch partition and 8 by 8-inch guides. A water ring catches the water from the drift from where it is taken by a pipe into the sump. The air shaft has two compartments, one for air 9 by 9 feet 4 inches in the clear; the other is intended for an escapement which is 5 by 9 feet 4 inches in the clear. There is a solid 8-inch partition between these compartments. In the escapement there is a stairway of oak lumber with handrails; the upper part of the air and escapement shaft is surrounded by concrete re-enforced with corrugated iron bars to keep back the water; a pump lodgement is made behind this concrete dam and the water is pumped up for use in the boilers. The concrete lining makes the shaft dry. Both shafts are heavily timbered from top to bottom.

The ventilating fan is a 7 by 12½-foot Capell, guaranteed to furnish 300,000 cubic feet of air per minute with a 5-inch gauge; the fan casing is of brick and steel plate; the fan is nominally a blowing fan, but it is arranged to quick reverse.

The roof of the tunnels and side drift are of re-enforced concrete to avoid all woodwork; the doors are made of heavy steel plate. There is an explosion door immediately over the airway.

The tippie building is a steel tower erected by the Wisconsin Bridge and Iron Company. It is an end wind with shearer 8 feet in diameter. Self-dumping cages are used, the coal being dumped into a larger hopper. The shaking screens, designed by the general superintendent, George R. Rice, were furnished by the Duncan Foundry & Machine Works. They are 8 feet wide and 40 feet long, loading the coal on four tracks. A box car loader will be installed soon, and a washery is now being erected. The raw coal to be washed will be taken from the shaking screens by belt to the top of the washery.

The hoisting engines are 22 by 36 inches. The drum is 8 feet in diameter, and is furnished with two post brakes and a winding device which automatically shuts off the steam and sets the brakes. This, together with the detaching hooks, makes as near a perfect device to prevent over-winding as is possible. In mining the coal is cut entirely by punching machines, of which the company has 20 Sullivan now in operation; also one Sullivan and one Norwalk air compressor. The compressor room is large enough for another compressor, and is built of brick with iron roof trusses, with gravel roofing. The boiler room, immediately adjacent but separated by a brick wall, is also of brick with iron trusses and gravel roofing. It now contains four internally fired boilers and two horizontal tubular boilers, all giving about 700 H. P. The feed water is heated by a Stillwell heater, all of the exhaust from engines and pumps passing through the heater. A generator in the power room furnishes light for the top works, and in the mine immediately near the bottom. The intention is to mine the coal on the panel system of 1,000 foot blocks. When the mine is fully opened out it is expected to produce 2,500 tons per day.

#### PROSPECTIVE MINES.

The Peabody Coal Co. is sinking a new mine, two miles north of Nokomis, Montgomery county. The escapement shaft is 10 by 15 feet and 630 feet deep, and is now down to the coal, a seam 8½ feet thick. The main shaft is 10 by 26 feet and 8 inches in the clear, and is now down 500 feet. The company intends to make this a model mine. The head frame and guides will be of steel. Two self-dumping cages 9½ by 12 feet will hoist two cars side by side, each car having a capacity of 3½ tons. Ropes will be fastened to the cages with self-detaching hooks. The hoisting engines are 34 by 60 inches with conical drums 7 to 10 feet. There are six boilers 6 by 18 feet having 70 4-inch flues, and a steel smoke stack. The boiler house will be brick, 74 by 48 feet; the engine room, also brick, 48 by 40 feet, with composition roofing and tile coping. The other buildings, such as office, shops, barns, powder house, etc., will be built on the same order. Four 100-ton

scales will be put in, with ten-foot shaker screen and four bar screens; also four weigh baskets. There will be four dead chutes, one receiving chute and one loading apron. Three steel chutes and one engine, necessary for driving the machinery will handle the coal from the cages to the railroad cars. A drag will be put in to convey coal to the boiler house. A Capell fan, having a capacity of 300,000 cubic feet of air per minute, will be the ventilator. Everything about the plant will be equipped with the latest and best machinery and material, all of which will require an expenditure of at least \$175,000. When the mine is fully opened out it expects to produce 3,500 tons of coal per day.

The Burnwell Coal Company is sinking a new mine one mile north of Witt, Montgomery county. The company expect to reach the coal at 600 feet. This mine will also be of large capacity.

The White Hall Railway Company, White Hall, Greene county, expect to operate two small coal and clay mines. One shaft is now down, and they are working on the other. It is expected to use the coal to convert the clay into sewer pipe and stoneware.

The Lovington Coal Mining Company, Lovington, Moultrie county, is making slow progress with its shaft on account of the water and sand with which it has to contend.

#### IMPROVEMENTS.

The following improvements have been made during the year:

All of the mines in this district, where signals are required, have been equipped with either pneumatic or electric signals. Very few, however, have encased the bell wires.

The Royal Colliery Co., Virden, Macoupin county, has made extensive improvements and are still adding more. It has installed an improved Christy box car loader; built a shed 50 by 100 feet over the scales and railroad tracks, framed and covered with galvanized iron; and has also put in a pump so arranged that it can be used both for a boiler feed and fire extinguisher, pipes are laid around the plant for that purpose. In addition to the Robinson fan already in use, a 20-foot Crawford & McCrimmon fan has been erected, so arranged that either or both can be used at the same time. This will insure good ventilation for a long time to come. The fans are built on and are encased in brick and cement. A fire proof building 48 by 30 feet has been built to be used for carpenter and blacksmith shops; also a granary 40 by 20 feet, with a capacity for 1,000 bushels of corn, 500 bushels of oats, 30 tons of baled hay, with two stalls, harness and feeding space. The company is now erecting a 1,500-ton Stewart washer, and installing two new boilers of 300 H. P. each, especially made for this plant, with smoke stacks and building complete, all painted. In all \$70,000 will be spent on improvements. This will place it among the first class mines of the State.

The O'Gara Coal Co., at its Green Ridge mine, is installing an electric and coal cutting plant, consisting of two 6 by 18 feet Erie boilers, having 70 4-inch flues, one 19 by 18-inch Erie automatic engine, one Morgan-Gardner generator, 150 K. W., 250 volts; one 8-ton traction motor. The engine room has been enlarged, and new boiler house, blacksmith and machine repair shops have been built. Heavy steel rails have been laid in the mine for the motor road. The mine has been wired to run the motor and the Morgan-Gardner chain machine.

The Dering, now the Burnwell Coal Co., Witt, Montgomery county, has installed two new 72-inch boilers, having 70 4-inch flues, 18 feet long, 150 H. P. each. A brick dynamo house has been built, adjoining the engine room on the west, 12 by 24 feet, with one Atlas engine 9 by 14 inches; one 75 Amp., 250 volts, Kester electric dynamo; one fan house frame, concrete foundation; one 20-foot Crawford & McCrimmon fan; one fan engine 12 by 24 inches connected direct to the fan shaft. A blacksmith shop 30 by 50 feet has been built, constructed with clay building blocks; one engine 7 by 10 inches, one roof blower, one Ottumwa box car loader, one pair of hoisting engines 24 by 36 inches, and two conical drums 7 to 9 feet.