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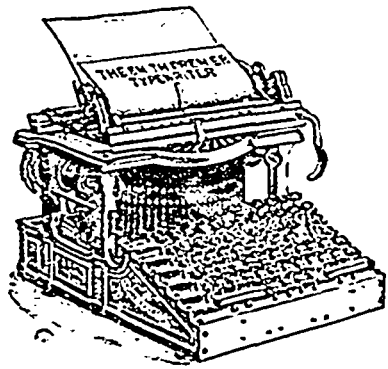
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MINING.

MODIFICATION OF WORKING COAL LATELY INTRODUCED IN NOVA SCOTIA.
 [Being a series of papers contributed to the Transactions of the Mining Society of Nova Scotia.]

From the *Canadian Mining Review.*
 [2] **ACADIA COLLIERY, PIOTOU COUNTY.**

By Mr. James Maxwell, Manager of the Acadia Pit, Acadia Coal Company, Westville, N. S.

The seam dips at an angle of 27° to 30°, and until the workings reached a vertical depth of 1,200 feet, the method of working was by driving back balances to the full rise 400 feet, and then working the pillars on a nearly straight face to the full rise back to the balance.

When greater depths were attained the method that had answered so well heretofore failed, and it mattered not how narrow the primary openings were made, the pressure soon wrecked them. A change of system became inevitable. As narrow places could not be kept open by timber, even where placed skin per skin, it was determined to try an opposite course and make the working places wide. So far so successfully, and the method adopted is to drive headings 26 feet wide to the full rise or pitch of the seam, carrying up on the intake side 2 feet from the cone a packwall with timber 6 feet wide, a space 6 feet wide is then left for a travelling way and for working a counterbalance that takes up timber. Then follows up the centre of the heading a chock pack 5 feet wide separating the travelling way from the coal chute, which is made 6 feet wide. Another similar pack 5 feet wide, forms the other side of the coal chute, and being placed 2 feet from the coal makes a return airway when the heading is being driven up.

At right angles off the chute, walls are started every 12 yards, and a pack 5 feet wide is carried on the low side 2 feet from the wall; then a space 7 feet wide serves for the track on which the tubs run to and from the working face. A continuous chocking 5 feet thick on the high side of the road leaves an open space about 17 feet wide to fall in, which it does on every advance of 5 or 6 yards. These falls return the pressure on the roads which stand fairly well for a distance of 200 feet, the length between the headings.

The thickness of coal worked in these walls is 6½ or 7 feet. In the roadways other 2 feet of bottom are taken up and the material stowed in the packs. The height of 9 feet thus obtained is generally sufficient to allow for the settlement due to the pressure. The chocks on the low side of the roadways are placed about 3 feet apart to leave space for stowage. The chocks on the high side are placed close together to prevent the gob from falling on the roadway.

The face is not in a straight line, but worked in steps the better to prevent it being closed, which it is apt to do when the falls take place.

The shales forming the roof are very soft, and require cross timbers every 4 feet resting on the chocks.

The chock wood is taken up in schooners, long narrow bores running in a 16 inch track with a passing place in the middle of the travelling ways. The schooner at the top of the heading on being loaded with coal acts as a counterbalance to take up the one below loaded with a less weight of chock wood. The coal from the faces is dumped into the chute down which it slides on iron sheets to the level below, where it is loaded with boxes carrying a ton each.

It is interesting to note that while bords 9 ft. x 7 ft. within a few weeks of being driven were reduced in size by the pressure, both on the tops and sides to such an extent that a box 4 feet square could no longer pass, places driven wide and but little higher to allow for the settlement of the strata have required but little attention to keep them open.

[3] **JOGGINS MINES, CUMBERLAND COUNTY, N. S.**

By Mr. James Baird, Maccan, N. S.

The seam of coal at present worked at the Joggins Colliery lies at an angle of 17 degs. with the horizon and is opened out by a slope driven in the seam direct to the dip, a distance of 1,900 feet or 2,300 feet to the face of our present sinkings and the vertical cover at this point is about 670 feet. The seam is from 6 to 9 feet in thickness and of the following section in ascending order :-

- Berch coal 2 feet
- Fireclay 1 to 3 "
- Fall coal..... 3 to 4 "

There is a good hard roof, the sandstone in some places being in contact with the coal.

Up to September, 1890, this seam was worked by bord and pillar, but on taking charge of the mine at that date I altered the system to longwall pure and simple as it is termed. The fireclay band being of too soft a nature to build walls with, I was obliged to adopt wooden butts 8 ft. by 4 ft. and for this purpose I used mostly any size or kind of timber I could get. I found the best plan to keep our roads and faces safe was to place the butts lengthwise to the roads and not farther apart than 4 feet. I had a good chance to try the different methods of keeping roads and face of work. The cross-roads or half angle across the dip I consider a good plan. They are rather steep for horses but work well by self-acting inclines. We drive these places 360 feet which I am of opinion is a good length for roads straight uphill or half across and with seven or eight working faces of 50 ft. to each set of men, makes good work. The straighter the face is kept the better; no jogs nor corners to take extra weight.