

the rods stuck. Invariably, sticking is caused by failure to wash away the cuttings from the outside of the bit and barrel. When this occurs on an ordinary barrel the pump stops and the water ceases to return at the top of the hole, an instant warning to the drillmen. With the water returning through the inner tube, it is difficult to determine how much, if any, water is passing up around the outside of the barrel, so that a bit may be stuck while the water is returning. This frequently results in not only the loss of rods, core-barrel and diamonds; but of the hole as well. It is rather common practice amongst runners, when this barrel is furnished, to plug the upper hole in the barrel: thus preventing the water returning through the inner tube and eliminating the danger of sticking. With the hole plugged, the barrel is the same as the simple rigid type. The fact that this is often done and that runners claim better results is not a very strong recommendation for the return water barrel.

From a drillman's standpoint, all drilling is either hard rock drilling or soft rock drilling and there is rather a distinct line between the two. Hard rock comprises the metal producing formations while soft rock means such formations, as fire-clay, salt, sulphur, asphalt, coal, gypsum, etc. The standard barrel for the former is the small single tube and for the latter the large double tube ball bearing barrel. If conditions are such in the so-called hard formations that it is desirable to use a double tube barrel, better results can be obtained by employing the soft rock practice of large hole and proper double tube barrel rather than by using small fittings not adapted to such conditions.

The foregoing opinion is based on twenty years experience in many parts of the world and is substantially the same as the views held by Mr. Harrington and most other experienced drillmen. Furthermore I believe it is in line with the practice of the Sullivan Company, who make all the barrels under discussion. As they are considered the leading authority on the subject it would be interesting to have their ideas.

Yours etc.,

J. G. GRATTAN.

Flower, Ont., May 22, 1918.

BLASTING COAL IN NOVA SCOTIA MINES.

Up to within very recent years the blasting of coal in Nova Scotia mines was accomplished by loose black powder, fired by squibs, but this practice has very properly been abandoned. In the damp mines compressed powder, or "pellets" are used. The charge is fired by an ordinary squib, sometimes ignited by a wire heated by contact with the safety lamp flame, and inserted through a small hole specially bored in the lamp glass. The use of squibs is with good reason coming to be regarded with disfavor, and powder fuses fired by electric batteries are being introduced. In the dry and dusty mines, or in mines where gas occurs, so-called "safety" or "permitted" explosives are used, as "Excellite" or "Monobel." These explosives are, of course, fired by a fulminate of mercury detonator, and electric battery. The quantity of explosive used varies with the nature of the seam, but from 4 to 7 tons of coal produced per pound of powder used, may be taken as usual practice.—F. W. G.

Mr. Maurice M. Summerhayes, formerly manager of the Ppreupine Crown Mining company has been made manager of the Blueston Copper Mining company, Nevada, and has already left for Nevada.

PRINTED COPIES OF PATENTS.

By H. A. Budden.

Sir Robert Hadfield, head of the firm of Hadfield, Limited, Sheffield, in a recent address on Patent Law Reform, made the following statement:

"As an example of the antediluvian policy of our Empire on this question an Englishman in this country cannot get a copy of a Canadian Patent without sending to Canada, and even then he gets only a typewritten copy, as patent specifications are not printed there."

This condition of affairs in the Patent Office, Ottawa, is one that demands immediate attention.

The Canadian Patent Office have issued over 180,000 patents and Canada ranks seventh among the countries of the world issuing Patents for Inventions.

A copy of a British Patent costs 8 pence, while the U. S. Patent Office sell copies at 5 cents apiece.

A copy of a Canadian Patent costs on an average over two dollars and can only be obtained after considerable delay.

In the U. S. Commissioner of Patents' report to Congress for the year ending December 31st, 1917, the following figures are given relating to this subject.

Printed copies of specifications and drawings of Patents to the number of 2,511,082 were sold at five cents each, bringing to this Office on this account, \$125,554. For 1,277,184 copies sold to libraries the Office received \$1,612. The total received from the sale of copies of Patents was \$127,166.

Copies to the number of 1,097,550 were shipped to foreign governments and 142,640 copies were drawn for office use. The total number of printed copies of Patents distributed during the year was 5,354,136.

These figures show that there is a great demand for printed copies.

The public is interested in the publication of Patents because it has the right to know the terms of the grant of a monopoly in order to avoid infringement while the monopoly exists, and it has also the right to know what has become public property when that monopoly ceases.

The patentee is interested in the publication of patents as he would readily purchase a number of copies of his patent, to assist him in exploiting his invention.

The Patent Office is urgently in need of printed copies not only to supply the examiners' files, but also to fulfill an agreement with the U. S. Patent Office to exchange copies.

In Great Britain and the United States the libraries in all the great centres contain copies of patents for reference. In Canada it is necessary to go to Ottawa to make a search and even then the cumbrous typewritten copies, which are not properly classified, make a search difficult and tedious.

The Canadian Patent Act as it now stands provided for the printing of specifications and drawings in Section 63, subject to the approval of the Governor in Council.

Undoubtedly it will take a long time to print the 180,000 patents which have been already issued, but that is a matter for special consideration.

There is no doubt, however, that the system of printing specifications and drawings should be adopted at once and thus prevent the increase of arrears.

Canada has reached such a stage in her development that she should endeavor to be among the progressive nations, particularly in matters that concern her intercourse with other nations. Her present time of rapid industrial and technical advance demands a change from old methods which may have been suitable for a young country.