

PLUMBING.

This business, relying for the most part, like the painting business, on the construction of new and superior houses, is also not brisk, and it is not a class of work that can be carried on favorably out of doors in winter; the operations will be confined principally to repairs. We fear many large shops, this winter, will be obliged to work on half time, if not close up altogether. There are, however, some large contracts on hand by leading firms. Wages averaged, during summer, from \$1.50 to \$2.00 per day.

MECHANICAL ENGINEERS, &c.

Over this particular line (and one of the most important in the Dominion), there still hangs a heavy cloud—the iron trade is very dull in all branches, and there is a general economising all over. The supply of labour is far in excess of the demand, and the outlook is anything but cheering, as capitalists will not invest in, nor will banks advance upon, any line of speculative business, to which this class appertains, until the country has become thoroughly purged of its men of straw.

Recent articles which have appeared in the United States papers, we are glad to find speak more hopefully of a return of business to a normal state after the election of the next President, and, in fact, the wheels of trade are already beginning to move. With a steady reaction in the United States, will come the influx of its wave across the borders; many of the artificers who have flocked back to their native country will again wend their way back to their old workshops in the States and thus relieve us, to some extent, of a great evil, viz., having a surplus of operatives. The coming winter, however, will be one of the hardest experienced in Canada for many years past, and now is the time that those who can afford to put their buildings in repair, should take advantage of the present low prices of materials and rate of wages, and thus, not only benefit themselves, but confer a great boon upon the unemployed mechanics who, this coming winter, will find it hard wherewith to provide food and raiment for their wives and children.

THE PATENT OFFICE REPORT.

AMONG the abundant crop of Parliamentary papers always marking the close of the session is one which, though it falls short (says *The Times*) of what it might be made, yet serves a useful purpose in illustrating the rate of advance in industrial science. The Patent Office Report, which will be in the hands of the members of Parliament in a few days, shows the usual steady increase in the number of applicants for patents during the year with which it deals. In 1875 there were no less than 4561 applicants, or 69 more than in 1874. The growth, however, is smaller than that of the year before, for 1874 exceeded 1873 by 198. The lessened increase may, perhaps, be fairly attributed to the somewhat depressed state of many industries. Certainly such figures as these are evidence of a great deal of inventive ingenuity; but at the same time a severe comment on the average value of the inventions is afforded by the fact that only 28 per cent. survive their third year, and only 10 per cent. seventh. The number of absolutely worthless inventions may also be guessed from the fact that 1173, or more than a quarter of the applications in 1875, are already dead, never having got beyond their six months of provisional protection. From so extensive a business considerable revenue might naturally be expected, and such is, in practice, the result. During the year a profit was earned of £110,950, after payment of all costs and charges, including the not inconsiderable sums of £24,000 for paper and printing, £18,000 for salaries and office expenses, &c. This comfortable income, too, seems very steady, for last year it amounted to £110,618. Since the establishment of the office is on its present footing in 1851, it has produced over a million of money, the exact sum being £1,229,772. Numerous have been

the appeals to the Treasury to devote a portion at least of this large sum to purposes of science and industry; but successive Chancellors of the Exchequer have persistently refused to listen to such proposals, however tempting. Perhaps, now that a Science Museum seems likely to be established, its claims may meet with more attention.

Beyond these statistics, however, there is nothing new in the report, and, indeed, on comparing it with that for last year, it is evident that the same identical form has been adopted, with the alteration of the necessary figures. The greater portion of the report is occupied with a reprint of an application made to the Treasury eighteen years ago by the then Commissioners of Patents for a new office. There is also a plan of an appropriate site for such an office in the middle of what is now one of the Embankment Gardens. The reproduction of this year after year shows a certain poverty of invention on the part of the Commissioners, or, perhaps, rather on that of the clerk whose duty it is to prepare the report, while its adoption year after year—it has appeared almost continuously since 1859—by successive Chancellors and law officers shows much unanimity of feeling as regards the want of the office under their control. It would, however, appear that the Treasury pays but small regard to the requests even of functionaries so exalted.

Yet it is not for want of material that the Patent Office Commissioners fall back on the literary efforts of nearly twenty years back. An account of the recent alterations in the arrangements of the office would certainly be useful to inventors, and there have been quite changes enough to make some such notice almost necessary. This is the case, even though our patent system escaped the radical changes proposed by the Bills brought in during the past and the preceding sessions. It should, however, be stated that the report only professes to deal with 1875, while it is in the present year that the alterations now being made were first commenced.

The work connected with the granting and registering the grants of patent occupies but a small department of the office, and is, of course, of a very simple character. It is in the production of its publications that the principal energies of the Patent Office are absorbed, for in the amount of these and the regularity of their appearance the office can vie with any of our publishing firms, except the very largest.

When the Act of 1852 was passed—the Act which abolished chaff waxes, clerks of the hanaper and their kindred—it contained a provision that all specifications of patents, past and future, should be printed for the public information. For this purpose the then Lord Chancellor, Lord St. Leonards, appointed Mr. Woodcroft, one of the principal patent agents, as superintendent of specifications, an office which shortly after merged in that of clerk to the commissioners, on Mr. Woodcroft being appointed to the latter post. The work of deciphering and printing the older documents was one of some difficulty, but it was successfully accomplished in spite of remonstrances of a few of the ancient keepers of the treasures, who saw in the publication of their record something little better than sacrilege. At the same time the work of printing and issuing the current specifications went on *pari passu*, and in a very few years the arrears were worked off. Since then every specification has been printed as soon as the six months expired during which the invention is kept secret. The number of these in now 95,791, of which 14,369 were filed before 1852. Previous to the passing of the Act, there had been no indices to the contents of the vast mass of specifications hidden away in the Rolls Chapel, the "Petty Bag" Office, and the Enrolment Office. A set prepared by Mr. Woodcroft for his own use was purchased and printed by the Commissioners, and it was determined to carry this on annually. This has been done, but in a considerably improved style, for the earlier indices were made from the titles only of the specifications, and these, in a very great number of instances, afford but little clue to the contents. New indices to the "old law" specifications have often been asked for and often promised, but they yet remain to be made. As an instance of the incomplete nature of those there are, it may be mentioned that an American a year or two ago discovered a description of a sewing machine at least fifty years older than the earliest previously known. This was given in the specification for shoemaking. The latter indices are more complete, and the principal requirement about them now is that they shall be amalgamated into volumes of ten years or so, to lessen the labour of a search through so many separate yearly volumes. An alteration in their form adopted a few years back has caused a little confusion, but, perhaps, has some slight counterbalancing advantages.

Another set of publications hardly less important to intending patentees than the indices, is the series of classified abridgments