supplied to Government by contract, but the copper and zinc battery-plates come from a Government manufactory in Gloucester-road, Camden Town. The wires used here are copper, sheathed in gutta-percha. For the electric transmission of time signals, which require a very powerful single shock, not a long-continued stream of force, a special battery is used. This is the Le Clanché battery, formed by placing rolls of carbon, instead of copper, between the solution of peroxide of manganese, in the inner cell, and that of chloride of ammonia, in the outer cell. The Battery Room contains, in all, 23,000 cells, but many of these are worked in sets or groups, more or less numerous, connected with the same wire. There are, as we understood, about one thousand separate batteries here. The efficiency of any one of them can be tested in a moment, by the superintendent in the instrument-gallery above.

The south-west is partly devoted to newspaper despatches and reports, and to the special "racing circuits;" the extra force of spare instruments, on Wheatstone's automatic system, is placed here, for use on particular occasions. The two eastern galleries are mainly occupied by the metropolitan telegraphs. They contain 263 instruments, of which 21 are duplex, 101 Morse printers, and 100 single needles. The central hall contains the instruments which are connected with the different provincial circuits of England. The provincial telegraph business employs 205 instruments at the Central Office; and of these 57 are Wheatstone's automatic, 20 are duplex, 7 are Hughes's type-printers, and 97 are Morse printers. But on the south side of the central hall are the pneumatic despatch-tubes for sending telegrams bodily, through an underground tube, to or from the more important London offices. On the west side is a tall and wide frame, called the test box, exhibiting in its front a great number of metal knobs and wires; these afford means of establishing an electric communication with any station throughout the kingdom. They derive their power from 4000 cells in the Battery-Room. The battery test box, above referred to, and the sympathetic clock, with the chronifer, or regulator of clocks, are situated also here, between the two western galleries. The total floor space is 50,000 square feet; the mahogany desk space extends in length three quarters of a mile."

Any of our readers who has ever enjoyed a tramp through a Canadian hard-work forest will acknowledge at a glance the faithful delineation of the Canadian birch on page 269.

To any who have ever enjoyed hard times in the woods, as we have, it will be suggestive of many a comfort—of fires lighted by the aid of its bark in spite of long continued rain, of extra plates and dishes which when used might be thrown away and so relieve the tired sports man from the nasty work of washing dishes. It is suggestive too of the frail but, safe in skilful hands, birch-bark canoe, and one or two of our readers may have seen an Indian bulletin in hieroglyphics on its papery inner surface. We were out once in the early fall with a sportsman whose love of picturesque knew almost no greater treat than to set fire to the tattered, hanging, bark and watch the flames rush up the tall trunk, and out along the knotted branching stems. He repeated the experiment, however, once too often for our peace of mind. On this occasion as the fire began first to lick along the branches we were astonished to hear shrill and painful cries. The next moment a mother bird fluttered from her nest in a forked twig of the tree and perching on a neighbouring limb responded in mournful long-drawn notes to the gradually fading shrill cries of her brood. We felt almost as sorry for the fisherman as for the bird. He had no idea that any birds bred so late in the season and the pained look in his face and his restless slumbers that night bore witness to a sorrow that will surely last longer than that of the poor mother bird.

We conclude, in this number, our illustrations of tobacco manufacture as carried on in France. There, as here, it will be perceived that all, except the heaviest work, is done by women. The French people are great smokers, and consequently the industry has attained immense proportions, and the machinery used in the manufacture is said to be of the most skilfully constructed description. The revenue derived from this article alone amounts annually, in France, to at least $60,000,000; the number of cigars annually consumed is estimated at 875 millions. In the largest establishments, where the operatives number many hundreds in each, nearly all the work is done by machinery, even to the damping which has been till lately universally done by hand. In our illustrations, this month, on pages 284 and 285 we show the packing in small paper packets of smoking tobacco, scaferlati as it is called, and the manufacture of cigarettes.

Some time ago, we described and illustrated a device, the invention of Mr. Boys of Ontario, for utilizing the motions of a ship, rising and falling and rolling with the waves, in propelling her through the water. A Mr. Deverill of Victoria, Australia, has recently patented a similar invention. The results of the experiments were recently detailed before the Royal Society of Victoria. It would appear from these experiments that the duration of the voyage was 2,026 hours, the number of rolls being 1,764,088, and of pitches 1,041,137. The approximate number of compound oscillations was 14 per minute, ascertained by means of a pendulum, and some other instruments, which we believe are now in the possession of Mr. Bessemer.

Reports as to the success of the various parties observing the transit of Venus are rapidly coming in. At Madras and in Japan, the observations were more or less interfered with by clouds. At Shanghai the sun was obscured during the whole period of transit. The observations in India and in Egypt were very successful. At Cairo one hundred photographs were taken. The Khedive is said to have lent every possible aid to the observers.

Preparations for the Arctic Expedition about to be sent out by the government of Great Britain, are being rapidly pushed forward. The arrangements are under the chief superintendance of Rear Admiral Sir Leopold M'Clintock who is well known as an Arctic navigator. Two ships have already been selected for the expedition and are being fitted, and an official has left Portsmouth for Scotland to examine the whalers to be selected for the expedition.

The production of beet-sugar seems to occupy somewhat the same position in some parts of France, that the production of cheese has of late assumed in the Eastern townships of this Province. Our illustration on page 268 represents a sugar factory on about the same scale as our cheese factories. The factory illustrated is one that was much admired at a recent exhibition of agricultural products and implements at the Champs-Elysées, and is the result of the experience of M. Peltier a celebrated French producer of agricultural implements. By its means the labour of six or eight unskilled men can easily produce 700 or 800 kilogrammes of sugar daily.