

When the well has been sunk as deep as desired, the filling takes place. The bottom is first well covered with very coarse material, preferably big hard rock mixed with cement mortar, the whole being vigorously tamped by means of an ogival hammer, a "Bourreur" weighing 4400 lbs. An addition of the coarse stuff is repeated two or three times and thanks to the tamping a relatively much expanded heap of solid ground is formed in the cavity produced by the "Perforator." With this well formed base attained, the filling and tamping goes on with finer material, ground and cement concrete.

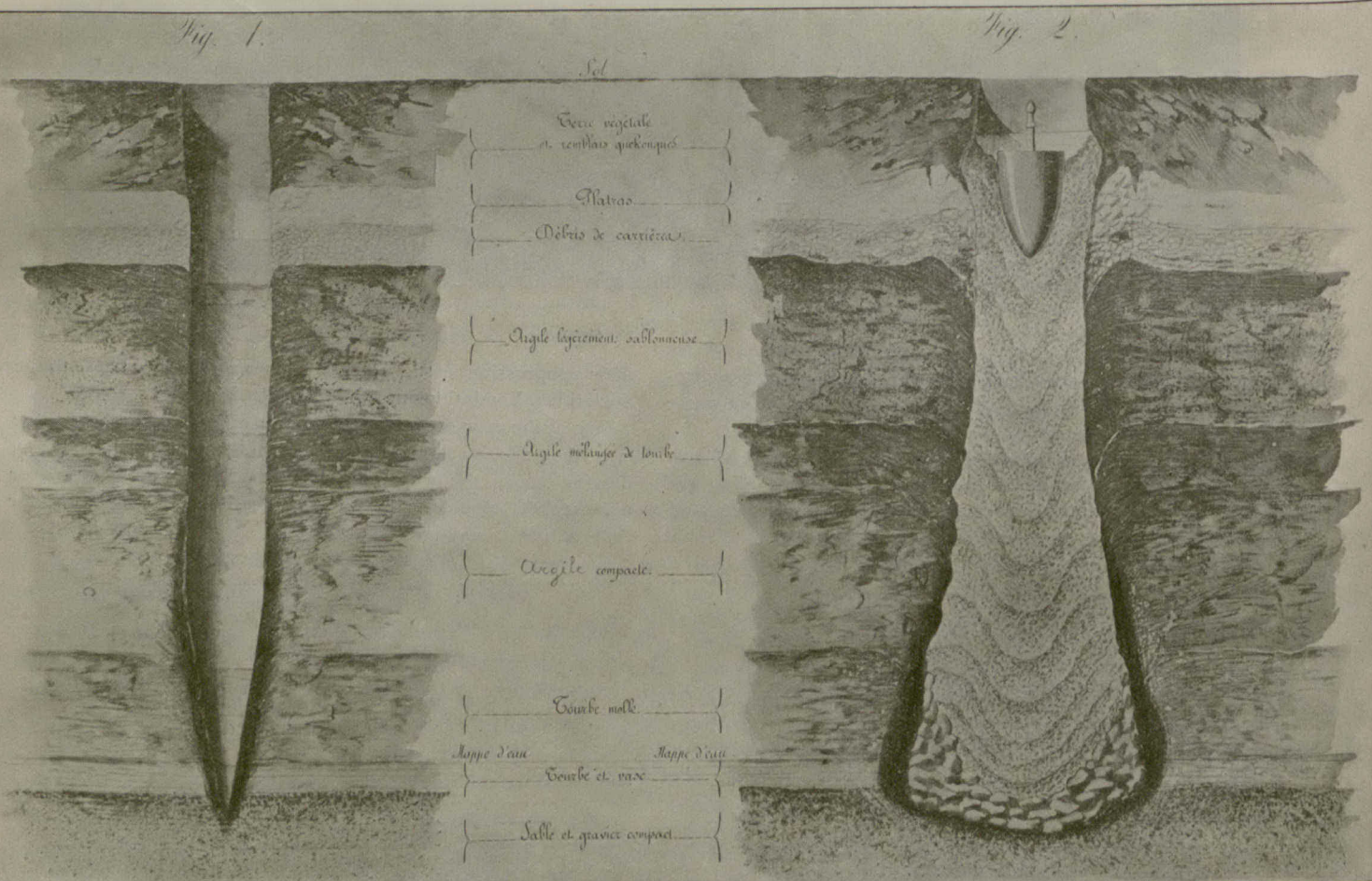
Owing to the formation of the expanded mass of heavy material on which rests the concrete foundations while the base itself covers a compressed bottom, resistance to sinking is obtained in the fullest manner possible.

This resistance of the base is increased by the one resulting from the adherence of the concrete pile to the compressed walls of the well. Under the blows of the tamping hammer, the contour of the pile has been expanded so as to encircle a diameter of 1.10 to 1.50 meters (40 to 55 in.) and more if necessary.

Besides, by virtue of lateral compression effected by the

MM. De Waele, Associate Grantees of the "Societe" are at present laying the foundations for the piers of the Gas Works at Brussels, as they had previously done for the very important foundations of the Sunlight Soap Co.'s Works.

In Belgium, the new process has received sanction. The most eminent engineers among whom, McJaquemin the far famed chief engineer "des Ponts & Chaussees" have expressed their full confidence in the merits of the process. In Holland, Algeria, Egypt, etc., the "Societe des Fondations par Compression Maconnique des Sol" has had and presently has important works to perform. In France the "Societe" has taken charge of vastly important foundation works. The foundations undertaken for the "Imprimerie Nationale" to cover grounds several hectares in area, in Paris close by the Seine river, deserving special mention. The ground presently occupied by the Imprimerie Nationale forms a part of an old quarry filled up with all sorts of rubbish, especially apt to absorb water. This made up soil is in direct connection with the waters of the Seine river, so that when these run with more or less volume, the riparian grounds are water-soaked to within less than three meters (10 ft.) below the general surface of the soil. To reach the solid bottom, about 41 ft. of the incon-



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conical hammer used in the first stage of the well preparation the soil has been powerfully compressed between the adjoining pile and the well preparation and the resistance thus added not only tells against the sinking tendency but also against the over-turning strains.

Last, but not least, the pile being wrinkled in a high degree on its periphery has penetrated the earth in a way to be absolutely imbedded therein, as the hand in a glove, and securely held in its folds.

One machine can dig per day two pile wells 9 meters (30 to 40 ft.) in depth.

Modifications of the process are easily found to meet any emergency. As an instance, for the bridge necessitated by the straightening of the Ourthe river, the foundation had to be laid in the bottom of same. A light cofferdam was built, its inner face was duly embanked and the perforation went on. In spite of the surrounding water and owing to the robe-like envelope formed in the clayey soil by the perforator, the filling up of the wells was done without any of the filling material getting wet.

gruous filling have to be gone through. The pile wells of course had to be dug and then tamped in made up soil having a superficial density on top but entirely deficient in tenacity and semi-liquid down to the solid ground. This work has been executed by the Societe des Fondations with an unprecedented promptness, and if not with ease, at least, methodically, and with perfect success. Thus far about 1,200 of these unalterable stands of support have been laid down, some of which actually carry loads of 600 to 700 tons.

BUILDING IN MONTREAL.

The report of the Building Inspector of Montreal for October as to building operations, shows that one hundred and thirty-one permits for new buildings were issued, at a cost of \$559,049. Permits for alterations numbered 29, and the amount involved was \$80,374. This made a total amount invested in building operations last month of \$675,423. The increase over the corresponding month of last year was \$399,393.