(No Model.)

R. S. GILLESPIE.

CONSTRUCTION OF SUPPORTS FOR BUILDING WALLS, &c.

No. 598,418. Patented Feb. 1, 1898.

Fig. 1.

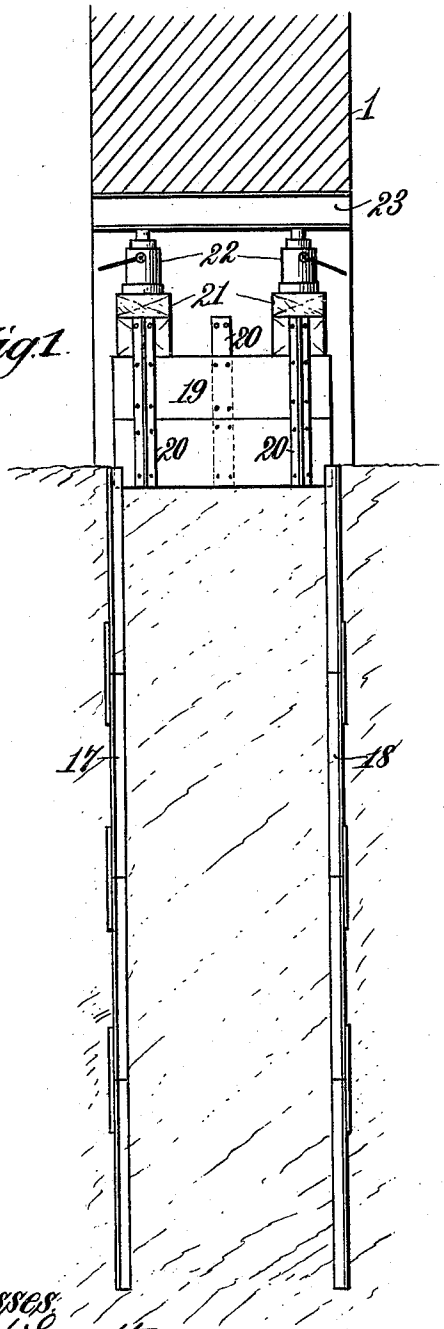
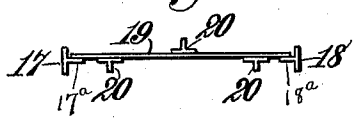


Fig. 2.



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UNITED STATES PATENT OFFICE.

RICHARD S. GILLESPIE, OF NEW YORK, N. Y.

CONSTRUCTION OF SUPPORTS FOR BUILDING-WALLS, &c.

SPECIFICATION forming part of Letters Patent No. 598,418, dated February 1, 1898.

Application filed July 24, 1896. Renewed September 18, 1897. Serial No. 652,178. (No model.)

To all whom it may concern:

Be it known that I, RICHARD S. GILLESPIE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in the Construction of Supports for Building-Walls, &c., of which the following is a specification.

This invention relates generally to engineering-shields, and particularly to supports which are driven or sunk perpendicularly into the earth by hydraulic jacks, rams, or water-jets until they reach the depth necessary to constitute a foundation for a building or other structure.

The chief object of the invention is to provide new and improved means for supporting the wall of an existing building and which will enable excavations to be safely made below the original foundation of a building already erected for laying the foundation for an adjacent or contiguous new building or any other structure.

The invention also has for its object to avoid the use of the cumbersome and expensive sheet-pile driving and the underpinning and shoring of walls through the medium of heavy needles or timbers.

The invention also has for its object to provide new and improved means whereby the foundation of a wall can be carried to any depth without removing the earth and therefore without the great expense attending such removal.

These objects are accomplished in the manner and by the means hereinafter described, and specifically pointed out in the claims, reference being made to the accompanying drawings, in which—

Figure 1 is a transverse sectional view of part of a building-wall, showing the manner in which the shield-sections are driven into the earth between opposite columns having inwardly-projecting perpendicular guide-flanges, and Fig. 2 is a detail plan view of the shield-sections and columns.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein the numeral 1 indicates the wall of an existing building, which, however, may be a pier or any other structure.

The wall-supporting shield is made in sections designed to be successively driven perpendicularly into the earth, and each section is preferably composed of complementary plates, as at 19, arranged vertically one above the other and rigidly secured together through the medium of perpendicular angle-irons 20, which stiffen and strengthen the plates, prevent the same from buckling, and enable one section to be connected with another section. The shield-sections are designed to extend or stand crosswise of the existing building-wall, as will be understood by reference to Fig. 1, and in order to properly sink the shield-sections I provide opposite perpendicular columns 17 and 18, having inwardly-projecting perpendicular flanges 17^a and 18^a. These columns are each made in sections and are driven section by section perpendicularly into the earth through the medium of hydraulic jacks or rams engaged with the building, so that the superincumbent weight of the latter resists the pressure of the jacks as they drive the column-sections. By this means it is possible to sink columns any required depth to meet the conditions required. After the supports or columns 17 and 18 are driven into the earth the shield-sections, as at 19, are driven or sunk perpendicularly section by section through the medium of suitable blocking 21 and hydraulic jacks 22, so that the ends of the shield-sections lie against and are guided by the inwardly-projecting flanges 17^a and 18^a of the T-shaped columns 17 and 18, as will be readily understood by reference to Fig. 1. The shield-sections may be composed of metal plates driven or sunk plate by plate; but, as shown, the shield-sections are each composed of a plurality of connected plates connected by the vertical angle-irons 20, as before stated.

The transversely-arranged shield-sections are driven, as before stated, by hydraulic jacks 22, and preferably the latter are engaged with transverse beams or girders 23, set into recesses in the building-wall, so that two jacks or rams can be employed to drive each shield-section, and the pressure will be equally distributed upon the existing wall.

The perpendicular columns 17 and 18 are not designed to support existing walls nor any new part that may be added thereto; but,

on the contrary, the actual support consists of the transversely-arranged shield-sections driven in the manner described in engagement with the columns. After the requisite number of shield-sections have been driven into the earth the necessary connection is made between the uppermost shield-section and the existing wall or other structure in such manner that the shield-sections themselves support or sustain the superincumbent weight.

Having thus described my invention, what I claim is—

1. The method herein described of supporting a wall, or other structure, which consists in first driving opposite columns perpendicularly into the earth, arranging jacks or rams under a part of the wall or other structure, and causing these jacks or rams to drive transverse shield-sections into the earth in engagement with the said opposite columns, substantially as set forth.

2. The combination in a support for a building-wall or other structure, of opposite perpendicular columns having inwardly-projecting guide-flanges, and transversely-arranged shield-plates driven perpendicularly into the earth with their opposite ends in engagement with the flanges of the perpendicular columns, said columns and said shield-plates being arranged directly beneath the existing wall, or other structure, substantially in the manner described and shown.

3. The combination in a support for a wall, or other structure, of opposite columns driven perpendicularly into the earth and provided with inwardly-projecting guide-flanges, and a shield-section composed of a plurality of rigidly connected and braced plates driven perpendicularly into the earth with their opposite ends in engagement with the said guide-flanges of the columns, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RICHARD S. GILLESPIE.

Witnesses:

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THOS. A. GREEN.