

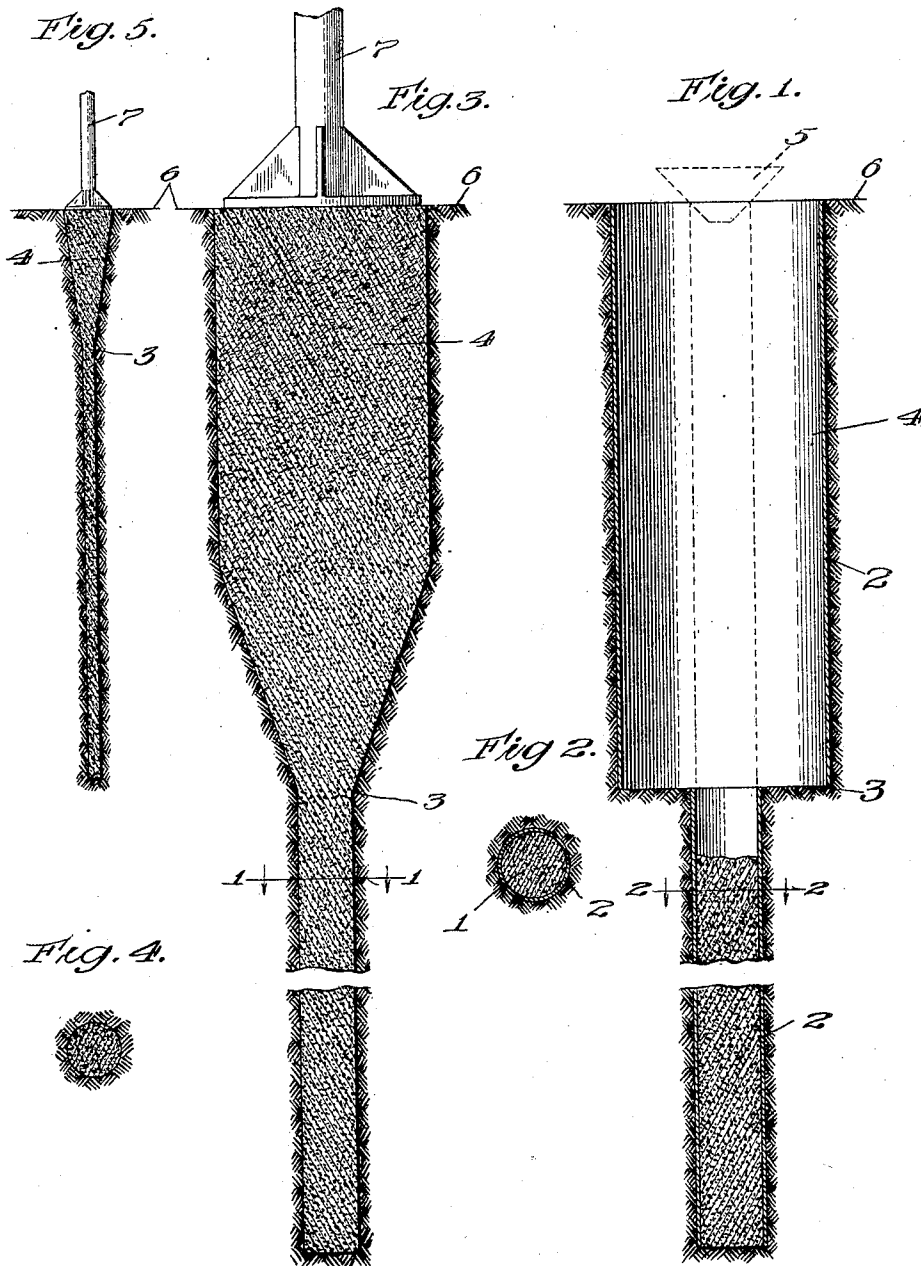
No. 794,971.

PATENTED JULY 18, 1905.

H. ERICSSON.
FOUNDATION.

APPLICATION FILED FEB. 23, 1904.

2 SHEETS—SHEET 1.



Witnesses:

Robert H. Wein

Oliver L. Plumtree

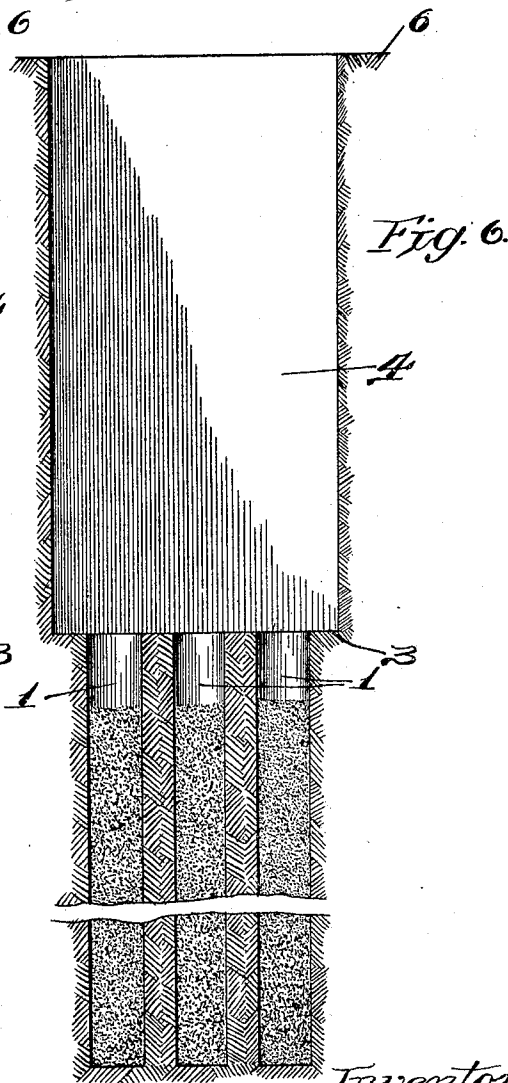
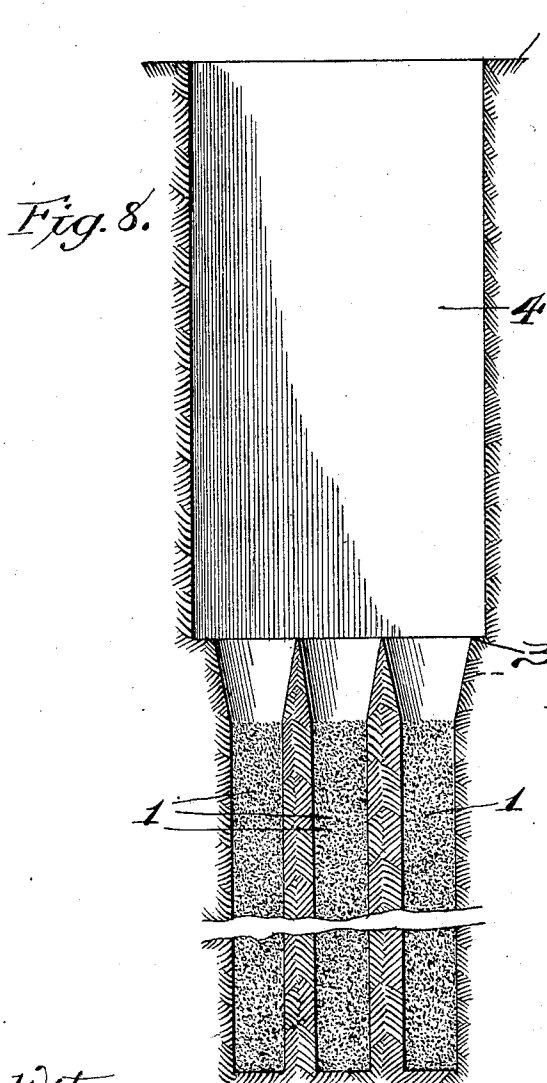
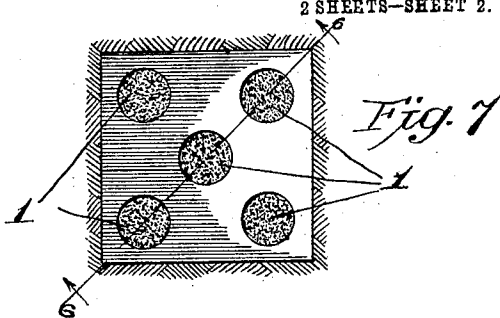
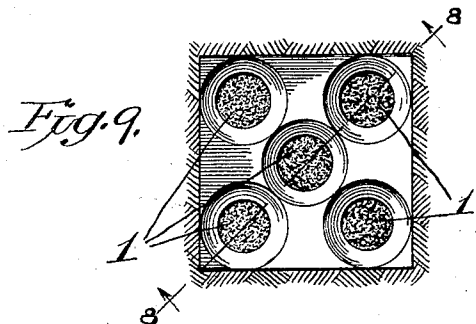
Inventor:

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By John W. Hill
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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

HENRY ERICSSON, OF CHICAGO, ILLINOIS.

FOUNDATION.

SPECIFICATION forming part of Letters Patent No. 794,971, dated July 18, 1905.

Application filed February 23, 1904. Serial No. 194,716.

To all whom it may concern:

Be it known that I, HENRY ERICSSON, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have
 5 invented certain new and useful Improvements in Foundations, of which the following is a description.

My invention relates to that class of foundations which support a weight too great for
 10 the available area of surface soil to satisfactorily sustain or where for any cause it is necessary to depend upon the underlying strata for support. Various means have been employed heretofore to secure such support—
 15 for example, the well-known piles driven into the earth for that purpose.

The object of my invention is to cheaply and expeditiously produce a foundation of the class described embodying the advantages of
 20 any foundation now employed and not open to the disadvantages of wooden piling nor attended with the dangers of sending workmen more than a few feet below the surface of the earth.

To this end my invention consists in the novel arrangement and construction herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, wherein
 30 like or similar reference characters indicate like or corresponding parts, Figure 1 is a longitudinal section of my foundation as constructed in soil that is not self-sustaining or where water or quicksand is encountered,
 35 with a portion of its length broken away, leaving the upper part of the excavation empty. Fig. 2 is a section taken on line 2 2 of Fig. 1. Fig. 3 is a longitudinal section of my foundation as constructed in soil that is self-sustaining, with a portion of its length broken
 40 away. Fig. 4 is a section taken on line 4 4 of Fig. 3. Fig. 5 is a longitudinal section showing a modified form of my foundation near the surface. Fig. 6 is a section on line
 45 6 6 of Fig. 7, showing a foundation partially completed, having a plurality of shafts or columns. Fig. 7 is a plan view of the partly-completed foundation shown in Fig. 6. Fig. 8 is a section on line 8 8 of Fig. 9, showing a

modified form of the foundation shown in 50 Fig. 6. Fig. 9 is a plan view of a partially-completed foundation shown in Fig. 8.

Referring to the drawings, 1 is a cylindrical hole cut in the earth. 2 is the usual tubular casing which may be used to maintain the
 55 bore should quicksand or water be encountered. 3 is a point where the bore 1 is enlarged into the part 4. 5 is a funnel-shaped hopper which may be placed in the mouth of the bore to direct the concrete filling into the bore. 6 60 is the upper surface of this part of the foundation and may be the bottom of the columns 7 or other supporting members of a building or other structure or the under side of a larger surface foundation, as for an engine, 65 the concrete, stone, or brick structure upon which an engine-frame is secured.

In constructing my foundation the hole 1, which is of such a cross-section that any of the well-known devices for boring wells may
 70 be employed, is bored to a suitable depth, which may be to a stratum of hard-pan or to bed-rock, although it is not necessary for the shaft end to rest upon any such formation. When the soil through which the hole is bored
 75 is not self-supporting or where quicksand or water is encountered, the casing 2 or equivalent means to maintain the bore may be employed, which may be the same as employed in constructing wells; but in self-sup-
 80 porting soil I prefer to dispense with this casing. In any case it is unnecessary for workmen to descend below the point 3 in constructing my foundation, and this, in connection with the comparatively small cross-section of the part 1 of the excavation, practically eliminates the danger of caving in and
 85 consequent loss of life or property. When the bore has been completed, the funnel 5 may be placed over the opening and concrete 90 introduced, falling by gravity from the mouth of the funnel, the impact of the falling mass thoroughly tamping that upon which it falls and rendering any other tamping unnecessary until near the surface 6. When the point 3
 95 is reached, any means may be employed to form the portion 4 and later fill the same with concrete.

It is obviously immaterial whether the portion 4 is formed by abruptly enlarging the bore 1, as shown in Fig. 1, or by gradually increasing its size, as shown in Figs. 3 and 5.

5 It is also obvious that in some cases the part 4 may be enlarged and a plurality of columns 1 arranged to support it.

Having thus described my improvement, it is obvious that immaterial modifications
10 may be made without departing from the spirit of my invention. Hence I do not wish to be understood as limiting myself to the exact form and construction shown.

Having thus described my invention, what
15 I claim as new, and desire to secure by Letters Patent, is—

1. A foundation member, comprising an integral concrete pile or pillar, composed of a plurality of similar regularly-formed sections
20 each of substantially uniform cross-sectional area its entire length, the connections between the sections forming a uniform shoulder about the pillar.

2. An article of the kind described, comprising an integral concrete pile or pillar
25 composed of a plurality of regularly-formed sections of different cross-sectional areas, the connections between the sections forming a shoulder at substantially a right angle to the
30 length of the pile.

3. A foundation member, comprising an integral concrete pile or pillar composed of a plurality of sections of different cross-sectional areas, each section being of substantially-uniform cross-sectional area its entire
35 length, the lower surface of each section being substantially horizontal and of the same

general dimensions as the remainder of the section.

4. A foundation member, comprising a plurality of concrete piles or pillars each of substantially uniform cross-sectional area its entire length, united at their upper ends by a similar section, formed integral with each pillar.
40

5. An article of the kind described, comprising an integral concrete pile or pillar, composed of a plurality of similar regularly-formed sections each of substantially uniform cross-sectional area its entire length.
45

6. A foundation, comprising a plurality of substantially vertical concrete shafts or columns, positioned wholly below the surface of the earth, the cross-section of each column being substantially uniform its entire length,
50 an extension provided at the upper end of said columns connecting the same and formed integral therewith.

7. A foundation member, comprising a plurality of concrete piles or pillars each of substantially uniform cross-sectional area its entire length, united at their upper ends by a similar section formed integral with each pillar, the connection between the pillars and said upper section forming a shoulder at substantially a right angle to the length of said sections.
55

In testimony whereof I have hereunto signed my name in the presence of two (2) subscribing witnesses.

HENRY ERICSSON.

Witnesses:

BURTON H. HILLS,
CHARLES I. COBB.