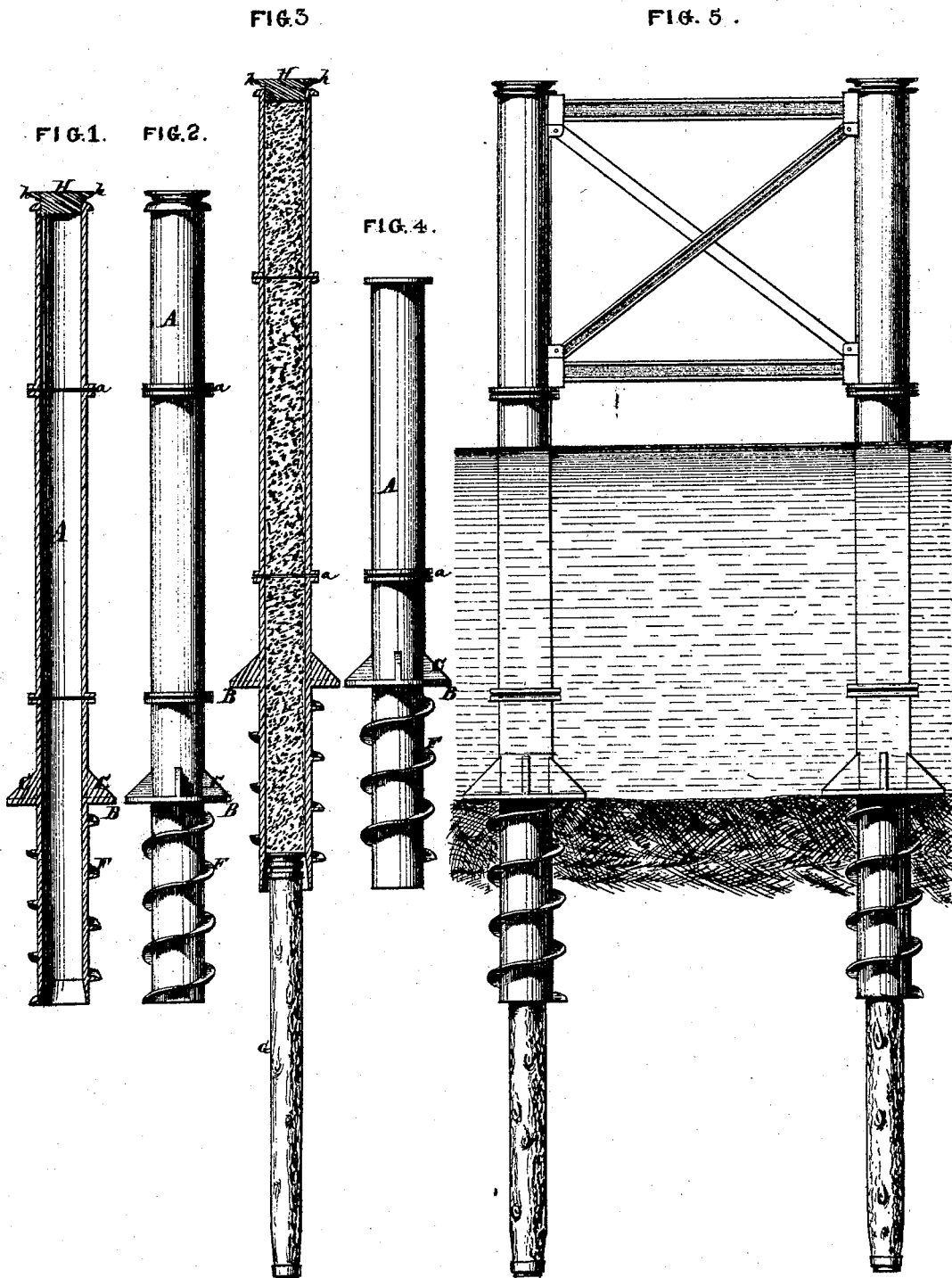


*T. W. H. Moseley,*

*File Driver.*

*No. 109,337.*

*Patented Nov. 15, 1870.*



*Witnesses*  
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# United States Patent Office.

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Letters Patent No. 109,337, dated November 15, 1870.

## IMPROVEMENT IN SCREW-PILES.

The Schedule referred to in these Letters Patent and making part of the same.

I, THOMAS W. H. MOSELEY, of Boston, in the State of Massachusetts, have invented certain new and useful Improvements in Piles for Engineering Purposes, of which the following is a specification.

### *Nature and Objects of the Invention.*

My invention consists in combining with a hollow metallic pile and sub-pile of wood, or other material, a cap so applied as to cause a part of the load to be borne by the sub-pile independently of the hollow pile.

### *Description of the Accompanying Drawing.*

Figure 1 represents a longitudinal section of a hollow iron pile.

Figure 2 is an elevation of the same.

Figure 3 represents a longitudinal section of a similar pile with a wooden pile projected through its lower end, and the hollow metallic shell filled with concrete.

Figure 4 is an elevation of a pile similar to that represented in figs. 1, 2, and 3, but with the flukes or screw-flanges omitted at the extreme end, so that the cylindrical end will constitute a guide below the flukes.

Figure 5 represents, in elevation, a set of piles in position, framed together, and constituting the side of a pier.

In all the figures like letters of reference indicate corresponding parts.

### *General Description.*

My piles are generally of cast iron and hollow, varying in caliber from eight inches to six or more feet, and in thickness of shell from one-half inch to two inches or more.

They are usually made in sections, A A A, from twelve to sixteen feet in length, with flanges *a a* at the ends, for the purpose of uniting two or more sections as the depth may render necessary.

Near the point or lower end of the first section are flukes or screw-flanges F F, varying in width from three inches to two feet, and in pitch as the nature of the ground may require.

The spiral flukes or screw-flanges usually extend for a distance of eight feet from the lower end of the pile, though, in some cases, much longer and, in other cases, shorter screws may be used.

A base, B, extends around the pile above the screw-flanges, having a horizontal width equal to about the diameter of the pile.

This base and its strengthening braces or brackets C C, to resist the downward pressure, are cast in one piece with the pile.

After this pile is screwed or driven home, the soil

is taken out of the inside to near its lower end, and a wooden pile, G, of sufficient length sent down through it to solid bottom, either stone or hard pan.

The wooden pile is well banded with iron at both its lower and upper ends, and, when it is of smaller diameter than the interior of the pile A, in which case it may be used with a hollow pile tapering at its point, the upper end of said wooden pile is provided with suitable guides, and when it is driven to its proper position, a cast-iron plate is placed upon its head inside of the hollow pile, and upon this head is deposited cement with clean sand or concrete, which in time becomes as hard and compact as stone.

The pile is filled within some three or four inches of its top, and a cast head, H, with a coping flange, *h*, is set onto the concrete, and a gum gasket on top of the cast pile, beneath the coping flange *h*.

Upon this cast head the burden or weight rests, thus dividing the pressure between the shell of the pile and the concrete filling, and down onto the wooden pile, which rests at its lower end upon a solid foundation.

The pile represented in fig. 4 is similar in form and dimensions throughout to that shown in figs. 1, 2, and 3, but its flukes or screw-flanges F do not go down to the bottom of the pile. The object in this is that in a loose shifting soil, such as mud or sand, the pile may have a guide below the flukes or screw-flanges.

By first removing the soil from inside of this pile to its lower end, the pile is allowed to sink down into the cavity thus made, the walls of which surrounding the pile, prevent the foot of the latter moving one way or the other out of its proper position.

The piles are all set in their exact places and driven down by machinery of my own peculiar construction for this purpose alone.

The cement-filling answers several valuable purposes:

First, it is the body on which the burden may most-ly rest;

Second, it gives weight and strength to the metal pile; and

Third, it preserves the metal from corrosion or oxidation.

### *Claim.*

I claim as my invention—

The cap H, so applied as to cause a part of the load to be borne by the sub-pile G, through the medium of a filling of concrete or other suitable material, substantially as described.

THOMAS W. H. MOSELEY.

Witnesses:

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