(No Model.)

S. G. HUTCHINSON.

PILE.

No. 383,884. Patented June 5, 1888.

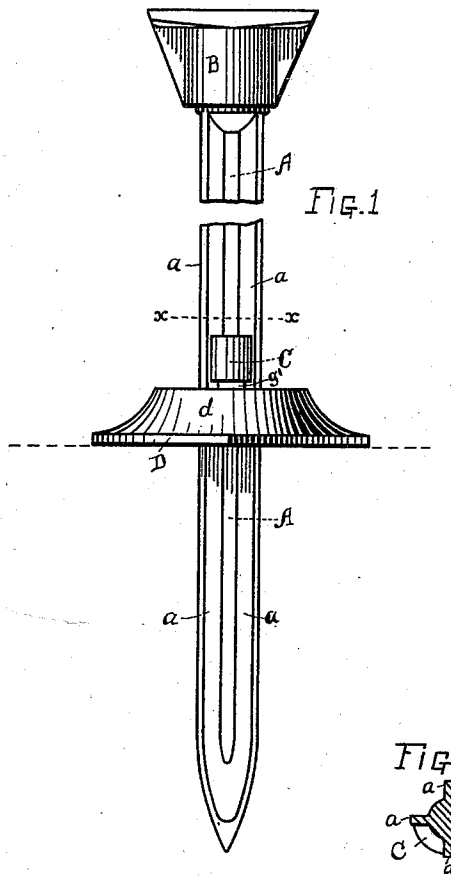


Fig. 1

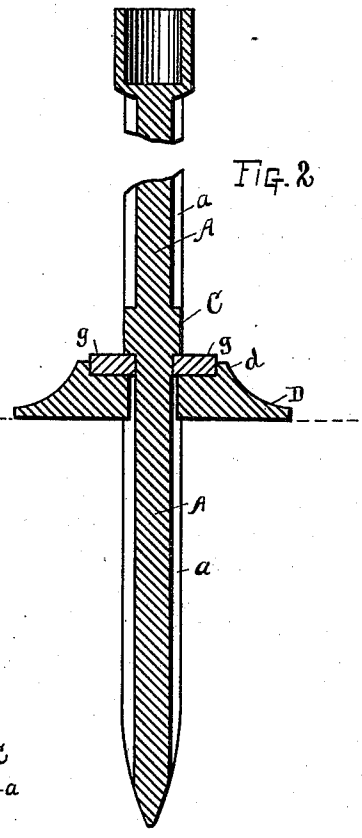
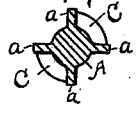


Fig. 2

Fig. 6



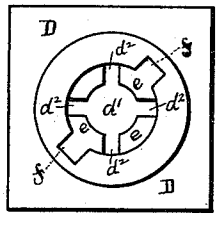


Fig. 3



Fig. 4.

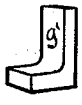


Fig. 5.

WITNESSES

Geo. B. Travel.

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PILE.

SPECIFICATION forming part of Letters Patent No. 383,884, dated June 5, 1888.

Application filed October 3, 1887. Serial No. 251,293. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN G. HUTCHINSON, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Improvement in Piles, of which the following is a specification.

My invention relates to the improvement of metal piles—such as are adapted to be driven into the earth to support a superstructure—and has particular relation to means for locking the ground-plate and pile together.

The objects of my invention are to form in a simple and effective manner a firm and secure connection between the ground-plate and pile, and thus avoid any tendency of the latter to settle or be forced through the former, caused by any weight or vibration of the structure, which may be produced by passing trains or other causes, and to admit of said connection being readily and easily formed beneath the water. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a metal pile having its ground-plate secured by my improved means. Fig. 2 is a vertical section of the same, showing a slightly different form of connecting-block. Fig. 3 is a plan view of the ground-plate. Fig. 4 is a detail view, in perspective, of one of the forms of locking-blocks. Fig. 5 is a similar view of a modified form as used in the construction shown in Fig. 1, and Fig. 6 is a transverse section taken on line *x x* of Fig. 1.

Similar letters refer to similar parts throughout the several views.

A represents a well-known form of metallic pile having a solid or hollow center, and having vertical strengthening-flanges *a* projecting therefrom, as shown, and having a suitable cap, B. Cast with said pile, preferably in the lower half, on one or more sides thereof, and made to extend transversely between the flanges *a*, are lugs C.

D represents a ground-plate consisting of a flat metallic plate having a short upwardly-extending cylindrical neck, *d*, having a central depression communicating with an opening in the bottom of the plate, said opening being of such shape as to correspond with that of a cross-section of the pile and its flanges, admitting of the easy vertical passage therethrough of said pile, thus forming a central opening, *d'*, from which extend outwardly to the surface of the inner wall of the plate flange-slots d^2.

Formed in the inner surface of the wall of the plate, and extending from the top of the neck thereof to the unperforated portions of the floor *e*, are one or more depressions, *f*.

g and *g'*, respectively, represent a rectangular and two-armed locking-block, to be used as hereinafter described.

In order to connect the pile and plate by my improved means, the pile is inserted through the ground-plate, its flanges *a* passing vertically through the flange-slots d^2 in the plate-floor. The pile is then driven, in the usual manner, to the desired depth, and one or more of the blocks *g g'*, of the desired shape and height, are inserted between the unperforated portions of the plate-floor and the pile-lugs in such manner that the lower portions of each of the blocks will rest on the plate-floor and within one of the depressions *f*. In order to facilitate the insertion of these locking-blocks in cases where the pile-lugs and ground-plate are in close proximity, I may insert a short block into the plate-depression, and continue the block upward to meet the flange by a second block made to rest on the first one.

In case it is desired or found necessary to locate the ground-plate at a distance below the lugs C, I use the angular block *g'*, (shown in Fig. 5,) the horizontal arm of which is inserted and rests as above described, while its vertical arm extends upward to meet the lug of the pile. These blocks *g'* may be cast with their vertical arms of various lengths, in order to meet the pile-lugs at the desired height from the ground-plate. By this construction and arrangement it will be observed that, the locking-blocks bearing and resting between the floor of the ground-plate and pile-lugs, a simple, safe, and secure lock is formed which will prevent any tendency of the pile from weight or vibration to work through the ground plate.

It will also be observed that the use of the above-described lock will greatly facilitate the locking of the parts when the pile is being

driven in the bed of a stream, as the difficulty heretofore experienced in connecting the parts by driving wedges, &c., beneath the water is obviated.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with the pile A, having one or more projecting lugs, C, of the ground-plate D, having depressions *f*, and locking-blocks *g'* or *g*, substantially as and for the purpose specified.

STEPHEN G. HUTCHINSON.

Witnesses:

ALEXANDER H. JOHNSON,

IRA KOEHNE.