

(No Model.)

D. H. VALENTINE.
PRESERVING AND PROTECTING PILES.

No. 282,807.

Patented Aug. 7, 1883.

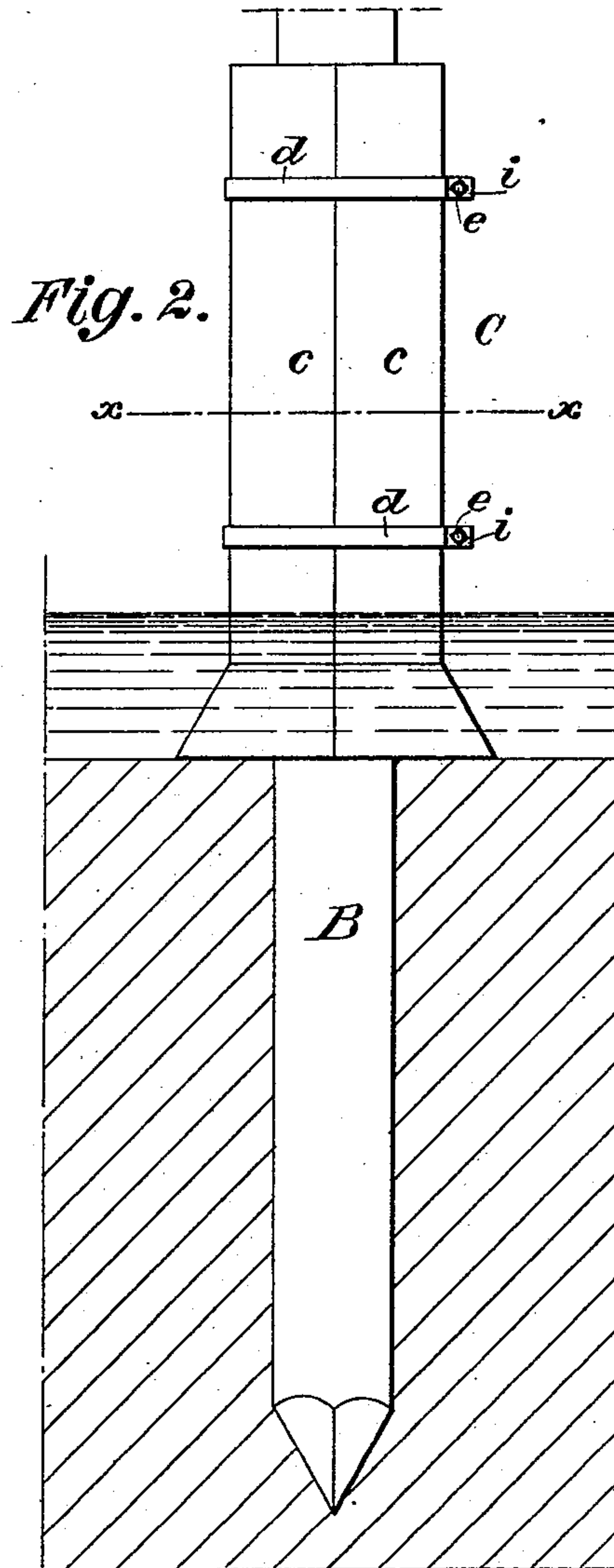
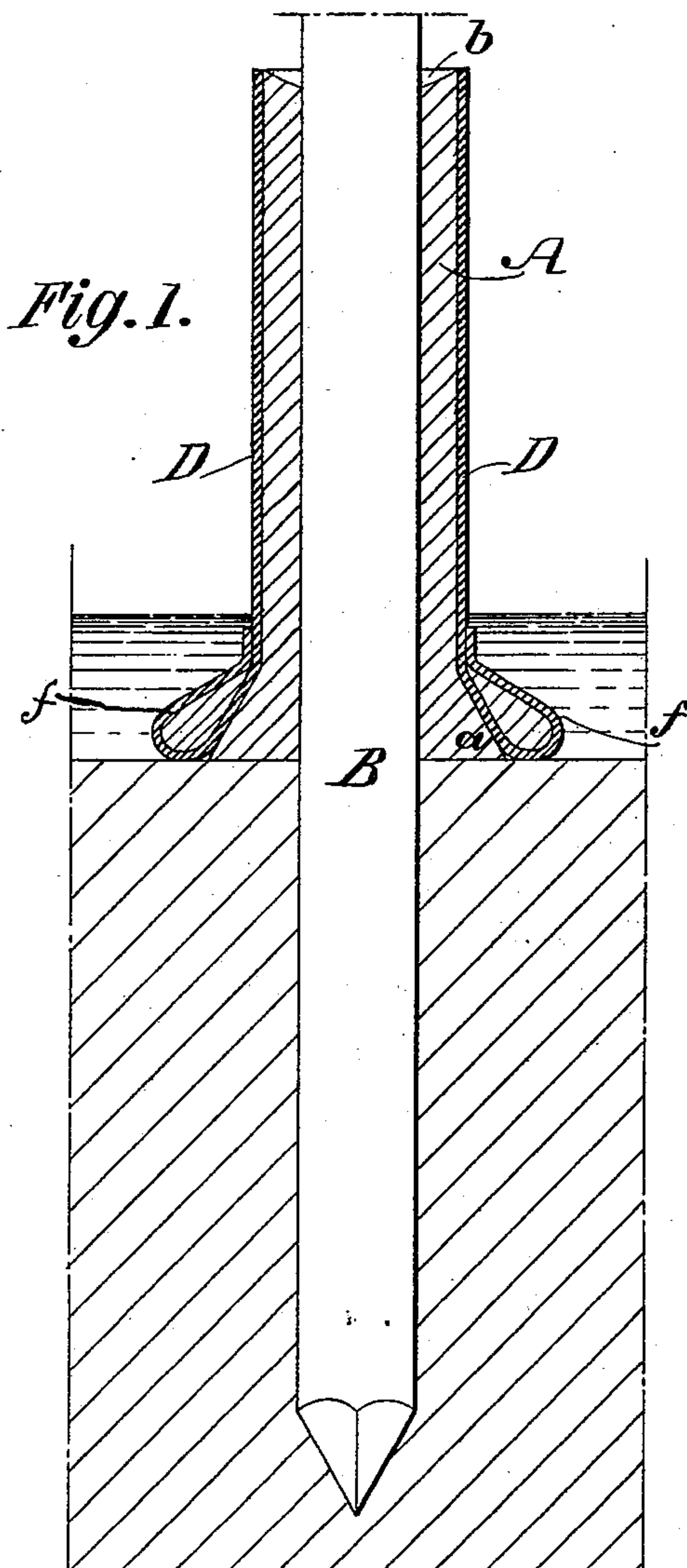
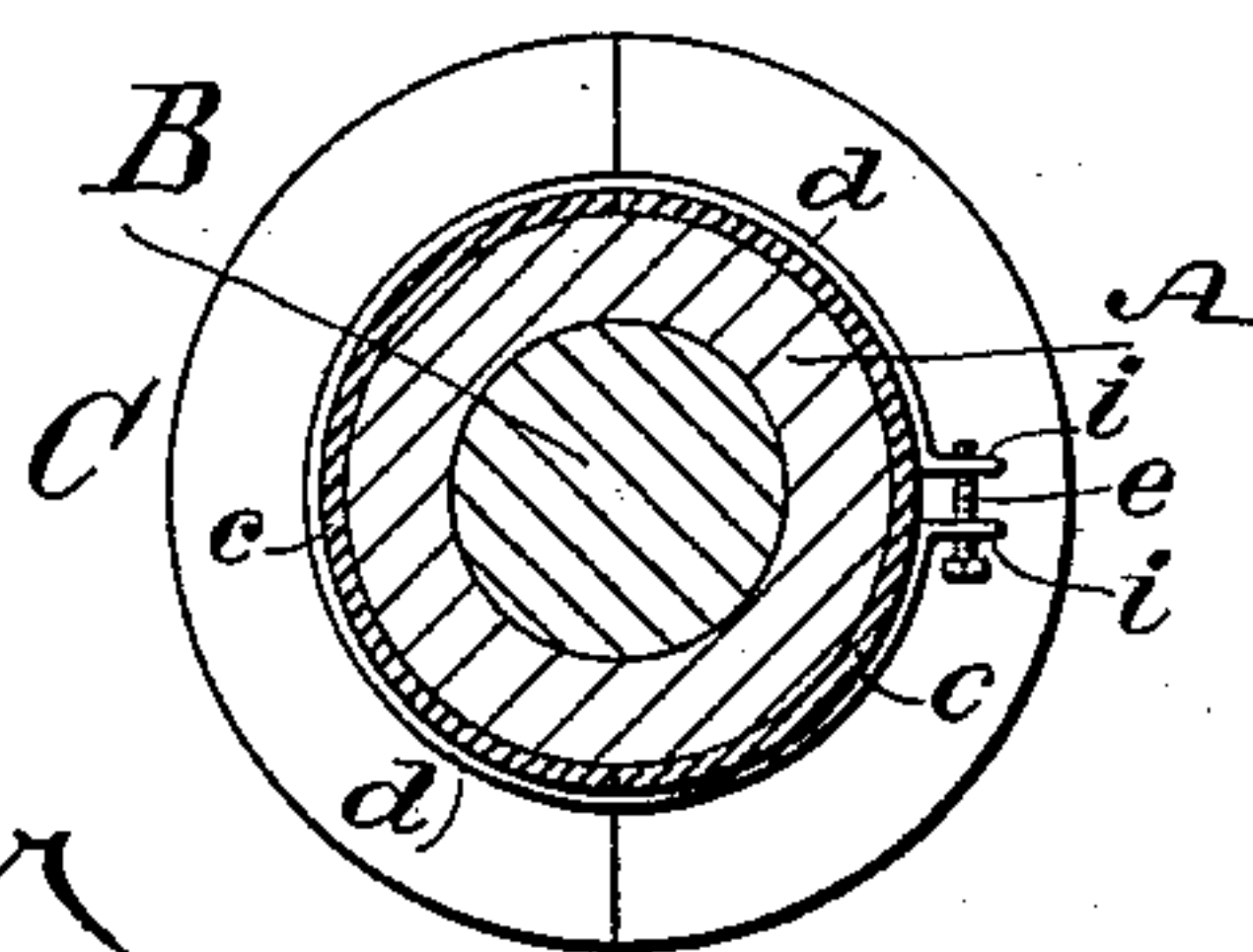


Fig. 3.



WITNESSES:

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PRESERVING AND PROTECTING PILES.

SPECIFICATION forming part of Letters Patent No. 282,807, dated August 7, 1883.

Application filed April 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, DAVID H. VALENTINE, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful
5 Improvement in Preserving and Protecting Piles, of which the following is a full, clear, and exact description.

The object of my invention is to devise practical means for protecting the wooden piles of
10 bridges, docks, and other structures from being eaten by worms and insects, and from the destroying effect of constant wetting and drying of the piles at the surface of the ground or water; and to these ends my invention con-
15 sists in the peculiar construction and arrangement of the parts, as hereinafter more fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification,
20 in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation, showing a pile having my preserving and protecting shield and outer covering applied thereto.
25 Fig. 2 is a front elevation, showing the casing used for molding the shield around the piles; and Fig. 3 is a sectional plan view of the pile, shield, and casing taken on the line *x x* of Fig. 2.

30 A represents a shield that is molded around the pile B after the pile has been driven into the ground, and extends from the ground or mud (or slightly below the surface thereof) up the pile, so that the upper end of the shield
35 stands above high-water mark. The shield is composed of Portland or any other suitable hydraulic cement, or of asphaltum concrete, and is by preference molded with the enlargement *a* at the bottom, as shown in Fig. 1, to
40 form a suitable base to prevent the shield from settling; and the shield is by preference formed at the top with the cup *b*, into which a quantity of oil, asphaltum, or pitch or other suitable material may be poured to preserve the
45 wood of the pile, and to make a water-proof joint between the shield and the pile.

In molding the shield A, I employ the sectional casing or mold C, which is composed of two sections, *c c*, that are adapted to be placed
50 around the pile, as shown in Figs. 2 and 3, and to be trussed together by the hinged sectional

hoops *d d*, and bolts *e e*, that pass through the free bent ends *i i* thereof, as shown clearly in Fig. 3. The sections *c c* of the casing or mold thus placed and locked around the pile will
55 then be lowered to the mud, and their lower ends settled slightly into the mud, forming a coffer-dam around the pile. The water in the casing (should there be any) will now be pumped out by a suitable pipe and pump, and
60 then the mold or casing will be filled with the cement, concrete, or other material for forming the shield A. The mold or casing having been filled to the top, the cup *b* will be formed with a trowel, and the casing or shield will be
65 left in place until the cement or concrete shall have become "set" or sufficiently hardened to remain in place without the support of the mold, whereupon the casing will be removed, and then, if the outer covering, D, is to be
70 used, it will be put around the shield and stitched in place. This outer covering is by preference made of strong, coarse, heavy canvas, but other strong and cheap material might be used; and the covering, before being placed
75 around the shield, has the wide hem *f* formed at one end, in which is placed a quantity of cement, concrete, stones, or other heavy material for weighting the canvas for carrying the lower end of the covering down to and
80 holding it around the bottom of the shield A, as will be understood from Fig. 1, so that the shield will be thoroughly protected from the wash of the water. In this manner it will be seen that the pile is thoroughly protected and
85 preserved, not only from the action of the water and the ravages of worms and wood-eating insects, but also from the weather and from floating ice, and hence the strength and durability of the pile is greatly increased by means
90 of the shield A. Besides, the cost and labor of applying the shield is comparatively small, and the shield, when applied, is durable and practical for its purpose.

It is for the sake of economy that the molds
95 C are removed for subsequent use and the covering D substituted; but where the expense is no special object it is designed to leave the molds C upon the shield A, which will greatly increase the efficiency of the protection; and
100 instead of placing the canvas covering around the shield A after the mold C has been re-

5 moved, it might be placed within the mold before filling and the cement or concrete filled and stamped down within the covering, in which case the canvas would become incorporated with the concrete or cement, and will thus effectually prevent all cracking and flaking off of the casing.

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

10 1. The shield A, molded upon the pile B, and formed with the cup *b*, substantially as and for the purposes set forth.

2. The combination, with the shield A, molded upon the pile B, of the outer covering, D, provided with the hem *f*, to receive weights to carry and hold the lower end of the covering down around the bottom of the shield, substantially as described, and for the purpose set forth. 15

DAVID H. VALENTINE.

Witnesses:

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