

(No Model.)

H. ANDERSON & H. ELIAS.

PILE COVERING.

No. 395,866.

Patented Jan. 8, 1889.

Fig. 1.

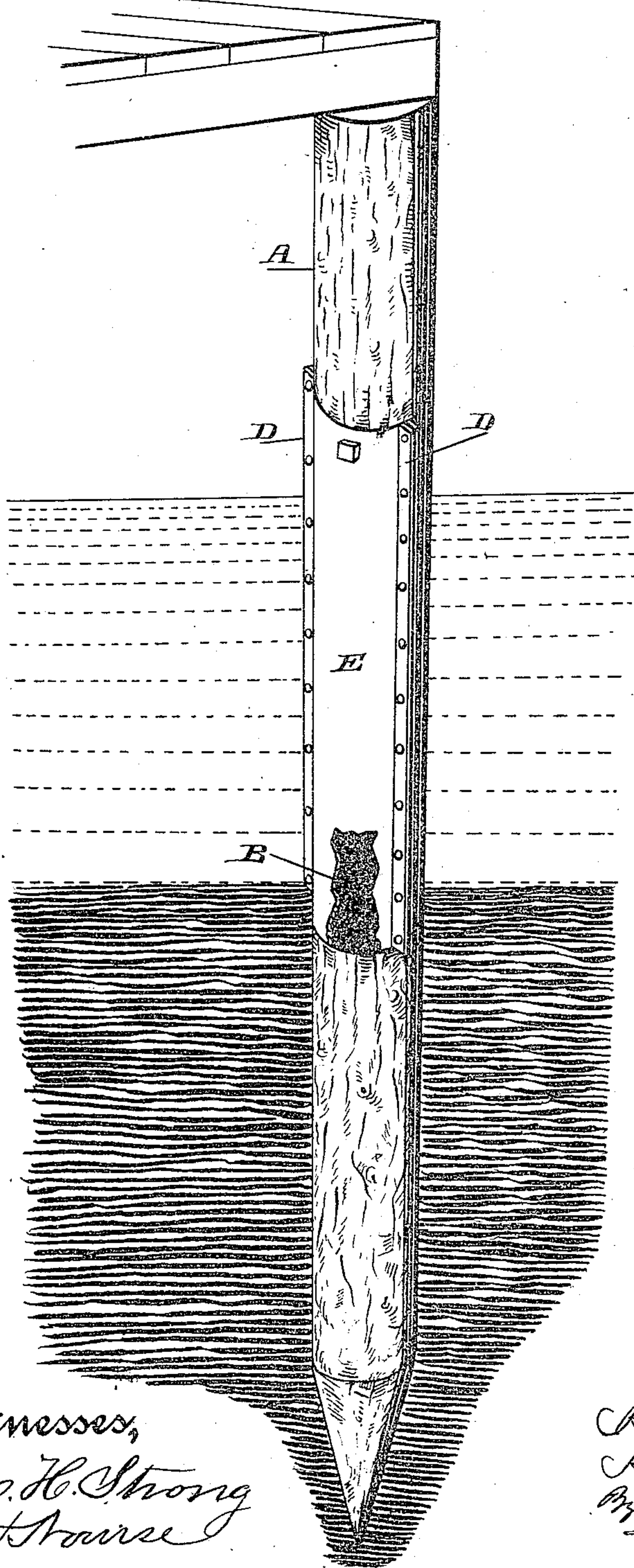


Fig. 2.

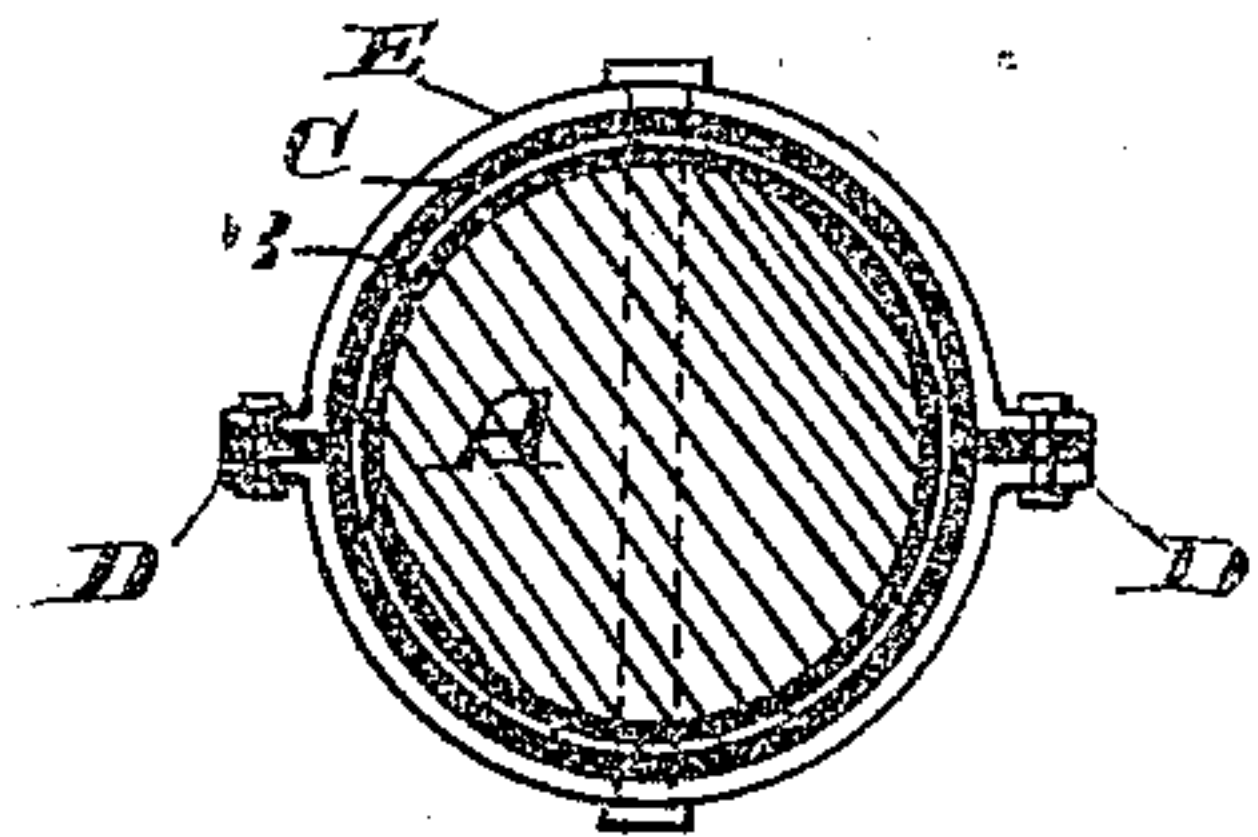
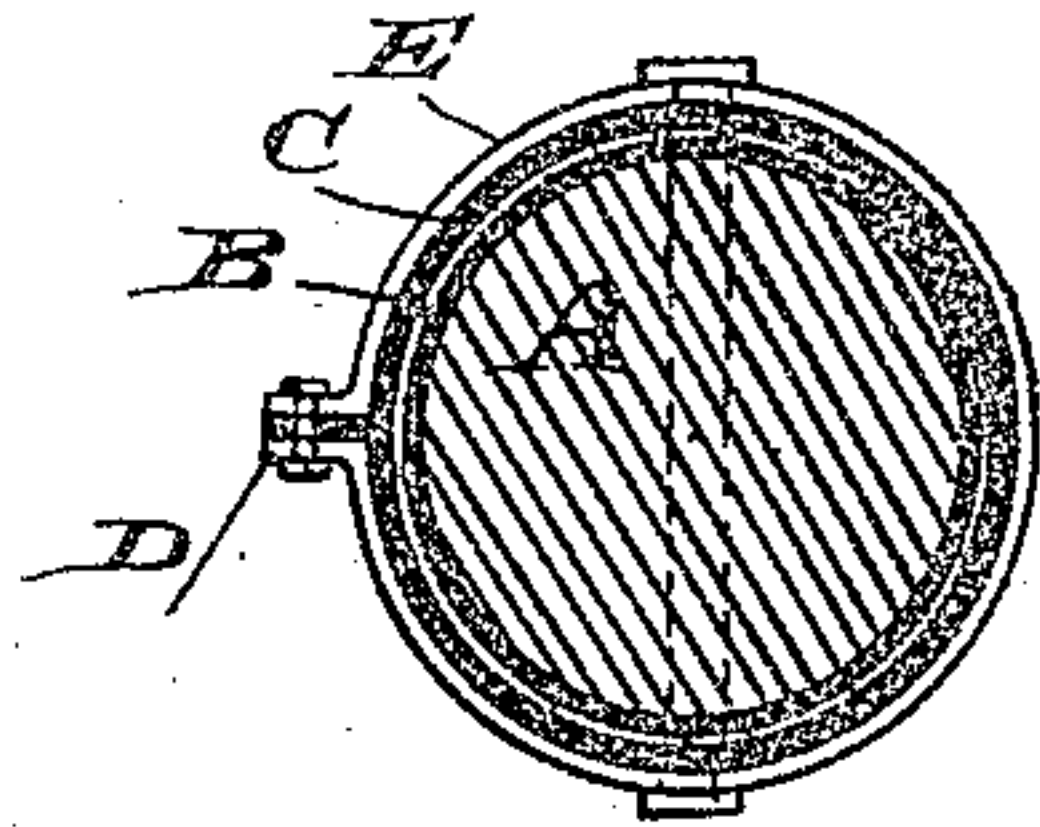


Fig. 3.



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HENRY ANDERSON, OF OAKLAND, AND HUGH ELIAS, OF SAN FRANCISCO, CALIFORNIA, ASSIGNORS OF PART TO ROBERT W. KING, FRANK CAVAGNARO, JOHN GAMBETTA, MARINO MONACO, JAMES A. ORR, BENJAMIN F. KOHLBERG, HERMAN O. HAAS, ROBERT E. MURRAY, A. REILLY, AND JAMES M. McCARTY.

PILE-COVERING.

SPECIFICATION forming part of Letters Patent No. 395,866, dated January 8, 1889.

Application filed April 2, 1888. Serial No. 269,352. (No model.)

To all whom it may concern:

Be it known that we, HENRY ANDERSON, of Oakland, Alameda county, and HUGH ELIAS, of the city and county of San Francisco, State of California, have invented an Improvement in Pile-Covering; and we hereby declare the following to be a full, clear, and exact description of the same.

The object of our invention is to provide a suitable means for the protection of piles from the ravages of the teredo and the limnoria and other marine insects.

It consists of a certain preparation and covering for that portion of the pile extending from the mud or bottom to a point at or above high-water mark, which will be more fully described by reference to the accompanying drawings, in which—

Figure 1 shows a pile with the covering upon it. Fig. 2 is a transverse section showing the outer protecting-case made in two parts. Fig. 3 shows this casing made in one part.

In order to prepare the piles, having first ascertained the depth to which they are to be driven and the depth of the water in which they will stand, the piles A are placed in a suitable lathe or machine, in which the bark and outer surface of the pile are turned off to a small depth, and so as to produce a smooth and regular surface over that portion which will extend from the mud to the high-water mark. This turned portion of the pile is then coated with a preparation of resin, coal-tar, pitch, asphaltum, or other like or suitable material or combination of materials, B, for preserving and protecting the wood. This substance is put on boiling hot, and after its application this portion of the pile is wrapped with a suitable flexible fibrous covering— which may be either cotton cloth, canvas, oakum, jute, Manila cloth, or other material, C—which is wrapped closely around the part which has already been treated as above described. This being done, a second coating of the preparation first named is put on over the fibrous wrapping material and allowed to harden. In order to protect this coating from

exterior abrasion and wear a sheet or sheets of galvanized iron, steel, copper, or other metal, E, are bent into a cylindrical or semi-cylindrical form of sufficient length and diameter to inclose the portion of the pile which has been treated as above described. When made in two parts, which is usually the most convenient, each of the halves is bent to fit one-half of the circumference of the pile, and is provided with outwardly-projecting flanges D, having holes bored or punched through the flanges. These holes may be from four to ten inches apart and large enough to receive bolts or rivets, which may be secured either by nuts or by riveting, as is found most desirable.

When the metallic covering does not exactly fit the interior pile, so that there are spaces left between the flanges, these spaces will be filled with packing of fibrous material saturated with the pitch or asphaltum preparation, thus forming a compact and impenetrable covering at all points.

The sheets of metal used may be of any desired thickness—from one-twentieth to one-half of an inch. In some cases it may be found preferable to make the inclosing-sheet of a single piece, which will be cylindrical in form, having flanges only on one side. In order to prevent these inclosing metallic cylinders or casings from slipping down from their places holes are punched or bored through them and through the body of the pile, into which bolts or spikes may be placed to hold the covering in place and prevent displacement from the concussion of the pile-driver.

By turning the piles, which are more or less tapering, that portion which is to be treated is made smooth throughout its length, and the outer metallic casing is thus easily fitted and drawn together by the bolts or rivets, so as to close tightly at the bottom and top, and thus prevent any access of the insects to the part usually exposed to their ravages.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The improvement in pile-covering, consisting of the pile turned to a smooth surface between the points which are to be protected, a coating consisting of a preparation of pitch or asphaltum, followed by a fibrous wrapping, and a second coating of the material, and a final inclosure or covering of metal, substantially as herein described.

2. The pile having the surface to be protected turned smooth, a coating of protecting material spread over this surface, a wrapping of cloth or fibrous material outside of the coating, and a final coating of material outside of the wrapping, in combination with a flanged cylindrical metallic case having bolts or rivet holes in the flanges, and a hole or

holes, by which it is secured directly to the pile, substantially as herein described.

3. A pile-protector consisting of the exterior cylindrical metal casing having the flanges with bolt or rivet holes, by which it is drawn together about the pile, in combination with a packing or filling for the joints, substantially as herein described.

In witness whereof we have hereunto set our hands.

HENRY ANDERSON.
HUGH ELIAS.

Witnesses:

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