C. N. HUBBARD.

PILE PROTECTOR.

APPLICATION FILED APR. 12, 1911.

1,002,847. Patented Sept. 12, 1911.

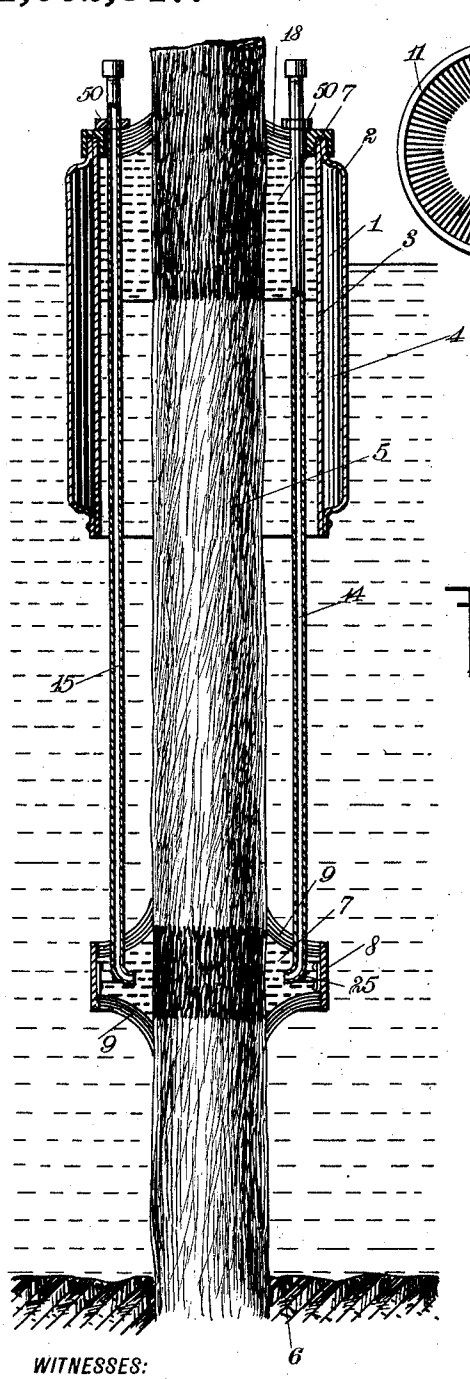

Fig. 1

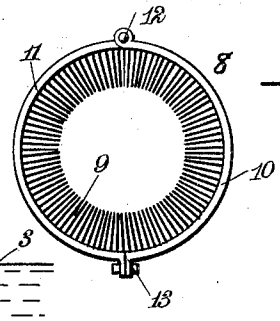

Fig. 3

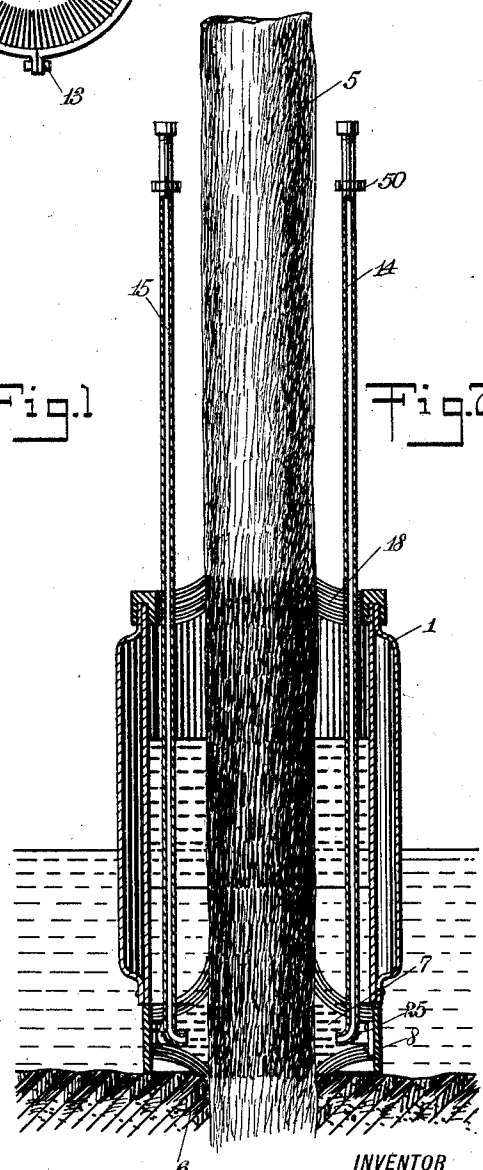

Fig. 2

WITNESSES:

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PILE-PROTECTOR.

1,002,847. Specification of Letters Patent. **Patented Sept. 12, 1911.**

Application filed April 12, 1911. Serial No. 620,659.

To all whom it may concern:

Be it known that I, CHARLES N. HUBBARD, a citizen of the United States, and a resident of Anacortes, in the county of Skagit and State of Washington, have invented a new and Improved Pile-Protector, of which the following is a full, clear, and exact description.

My invention relates generally to pile protecters which operate after the pile is erected to coat it with a preservative solution, such as is described in my Patent No. 934,176.

The particular object of the present device over that shown in said patent is to provide a pile protector so constructed that the chemical compound used in protecting the pile may be carried to a greater depth than low tide, whereby the extermination of teredo and limnoria and other marine worms is facilitated.

A further object of the invention is to provide a device of this class which will retain the oil within the float when the tide is out and the float is aground.

A further object of the invention is to provide a pile protector of an improved form embodying brushes whereby the application of the preservative is facilitated and the oil which is used therewith is conserved.

A further object of the invention is to provide a pile protector with parts relatively movable to each other whereby the application of the preservative may be applied to a greater depth, the said protector being so constructed that when the water is at low tide and the device is resting on the sand the preservative contained therein will be prevented against loss.

Reference is to be had to the accompanying drawings forming a part of this specification, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a vertical sectional view of my device in use; Fig. 2 is a vertical sectional view showing the position of the parts at low tide and the lower brushes resting on the sand; Fig. 3 is a plan view of a brush.

My device comprises the float 1 made up of an outer shell or casing 2 and an inner shell or casing 3 suitably connected together, whereby a water-tight compartment 4 is provided therein. The float is circular in outline and is adapted to surround any desired pile member 5 which extends upwardly through the water, being driven into the sand or other earthy material 6. As shown in Fig. 1, the float is adapted to surround the pile, a portion of the float extending beneath the surface of the water and a portion also projecting above the surface of the water, the interior of the float being adapted to receive a quantity of suitable preservative 7 of less specific gravity than the water, this preservative being in contact with the pile at the water level. As the tide rises and falls the float 1 will rise and fall with it and the preservative 7, contained within the float and on top of the surface of the water, will be applied to the outside of the pile, as is described in my patent hereinbefore cited. In order to carry the application of this preservative to a greater depth than low tide, I have provided a brush 8 which may be made of any desirable material and is circular in outline and of a diameter sufficient to encircle the pile, the brush proper 9 being carried by two semicircular members 10, 11, movable relatively to each other about a supporting member 12, and adapted to be held together when in position around the pile by any suitable means, such as a bolt and nut 13. Extending downwardly within the float 1 to the desired depth are a plurality of pipes 14, 15, suitably secured at their lower ends by means of bands 25, to the above-mentioned brush. These pipes are adapted to contain a quantity of preservative and the lower ends of the pipes communicate with the central portion of the brush, thereby providing a quantity of the preservative about the pile which is held in position by means of the brush portion 9 which engages the pile around its periphery. By extending these pipes upwardly through the said float 1 they serve the purpose of guides and the movement of the pipes and brush with respect to the float may be determined by any suitable means, such as collars 50, secured to each of the pipes and adapted to engage the upper portion of the float, as shown in Fig. 1.

As shown in Fig. 2, the device is particularly adapted to carry the application of the preservative below the level of low water; the brush 8 is shown resting on the sand or other material 6, the preservative 7 contained within the brush being held against loss or escape into the surrounding water by

means of the brush which retains the oil by absorption or otherwise, and the preservative between the pile and the float being held against loss by reason of the float resting on the brush whereby an inclosure is formed which retains this preservative. As the tide falls, the float 1 will fall with it, as will also the brush 8 containing the compound, until the brush comes to rest at the bottom of the pile; the float being movable along the pipes 14, 15, will continue to fall with the water until the lower end of the float comes to rest on the upper portion of the brush, the pile being coated throughout its length with the preservative and in the final position of the parts, the preservative being held against loss by means of the relation of the parts, as set forth. As the tide begins to rise, the float 1 will rise with it, the brush remaining adjacent the bottom of the pile, until the upper portion of the float comes into engagement with the collars 50 on the pipes 14, 15, after which any further rising of the float will cause the brush 8 to rise. The depth to which the brush 8 may engage the pile may be regulated by the position of these collars on these pipes since the brush and the pipes are supported by the float.

If desired, I may apply a brush 18 to the upper portion of the float 1 whereby a saving of preservative is effected in that evaporation is decreased; a further advantage to be derived from the use of this second brush is that the preservative may be more effectively applied by reason of the rubbing action between the brush and the surface of the pile.

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

1. The combination of a pile, and a float surrounding the pile, the said float containing an air chamber whereby it may rise and fall with the water level, together with a brush also surrounding the pile and beneath the said float, the said brush having members extending upwardly therefrom and terminating adjacent the float.

2. The combination of a pile, and a float surrounding the pile which is adapted to rise and fall with the water, together with a brush also surrounding the pile and located beneath the said float, the said brush having means extending upwardly therefrom and adjacent the said float, the space between the float and the pile and between the brush and the pile being adapted to contain a suitable preservative.

3. The combination of a float having a pile-receiving opening, the float being adapted to rise and fall with the water, a brush encompassing the pile beneath the float, pipes communicating with the interior of the brush and extending upwardly and above the said brush, the said pipes being adapted to convey suitable preservative to the said brush.

4. The combination of a pile, and a float encompassing the pile and adapted to rise and fall with the water level, the interior of the float adjacent the pile being adapted to contain a quantity of suitable preservative, a brush surrounding the pile below the float and having pipes extending upwardly therefrom, the said pipes communicating with the interior of the said brush whereby a quantity of preservative may be supplied to the said brush and held in position between the portions of the brush and in contact with the pile, the said brush being adapted to rise and fall with the float, whereby when the tide becomes low and the brush rests on the sand adjacent the bottom of the pile the said float will come to rest on the said brush, thereby preventing the loss of the said preservative contained within the said brush.

5. The combination of a pile, a float surrounding the pile and adapted to rise and fall with the water, a brush also surrounding the pile beneath the float and having a plurality of pipes extending upwardly therefrom, the said pipes being carried by the said brush and communicating with the interior thereof whereby a suitable preservative may be supplied to the interior of the brush, the said preservative being held against loss in the surrounding water by reason of the brush, the said brush resting on the sand when the tide is out and the said float resting on the said brush whereby the pile may be coated with the preservative throughout its length through the rising and falling of the water.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES N. HUBBARD.

Witnesses:
C. M. CANFIELD,
ALFRED BACHTOLD.