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T. P. LANE

2,385,869

PILE PROTECTOR

Filed July 21, 1944

2 Sheets-Sheet 1

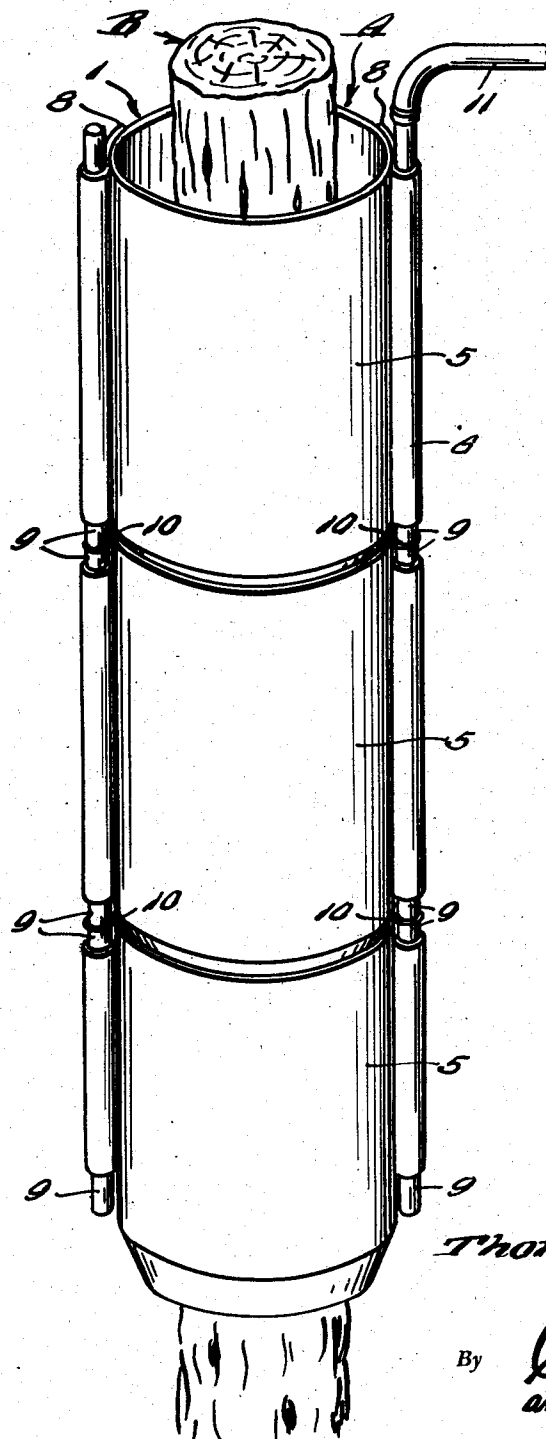


Fig. 1.

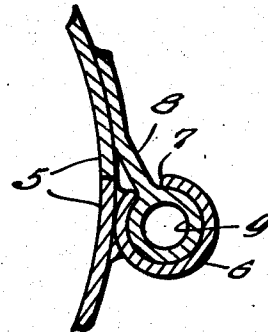


Fig. 4.

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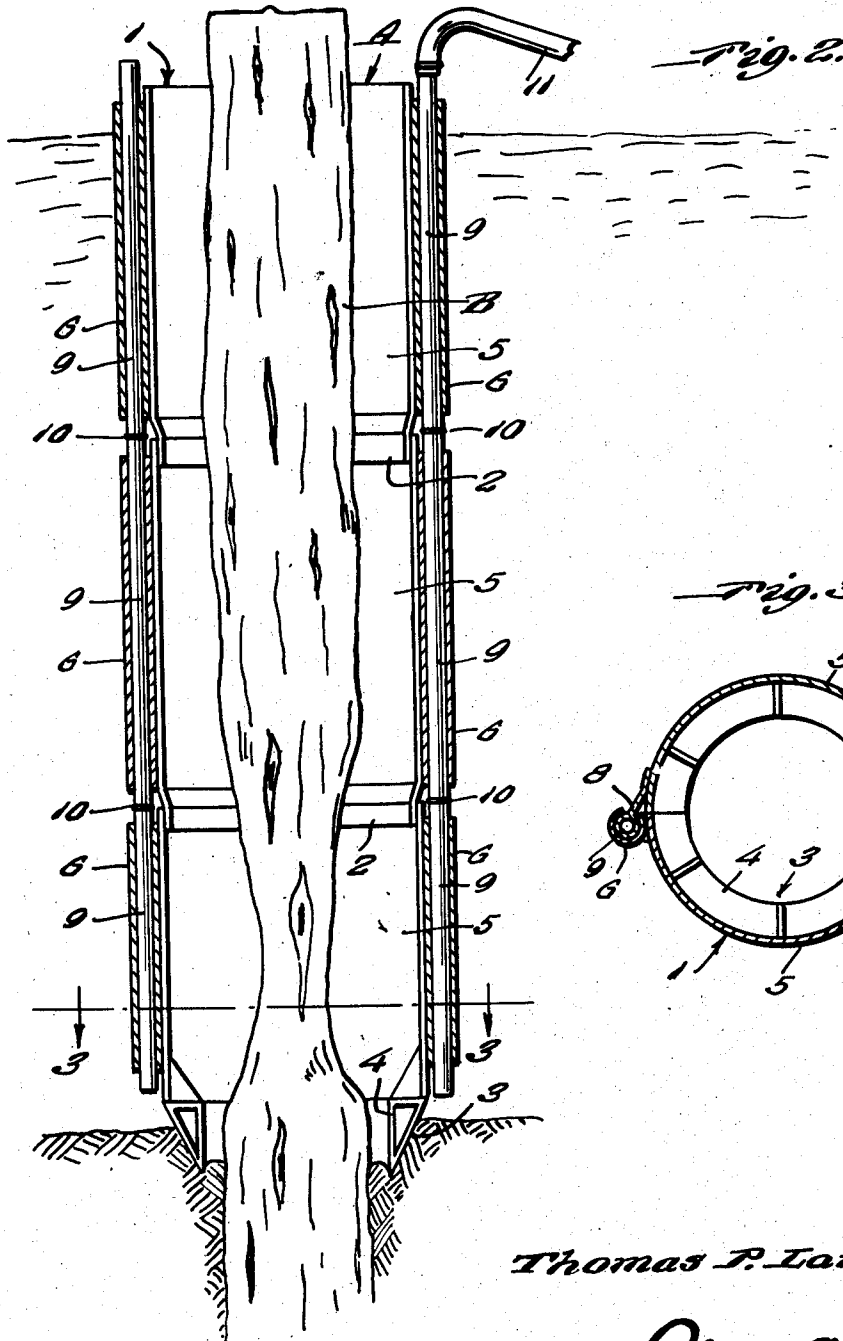
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UNITED STATES PATENT OFFICE

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PILE PROTECTOR

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Application July 21, 1944, Serial No. 546,009

1 Claim. (Cl. 61—54)

The present invention relates to new and useful improvements in pile protectors, and has for its primary object to provide, in a manner as hereinafter set forth, novel means for fully protecting piles or posts, beams and other underwater supporting structures from damage or destruction by worms and other marine life.

Another very important object of the invention is to provide a protector of the aforementioned character which will materially strengthen the pile and which, further, has its own bearing for assisting in supporting the load and whereby said load may be greatly increased.

Other objects of the invention are to provide a pile protector of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact and which may be manufactured and installed at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a perspective view of a pile protector constructed in accordance with the present invention.

Figure 2 is a vertical sectional view.

Figure 3 is a view in horizontal section, taken substantially on the line 3—3 of Figure 2, but with the pile omitted.

Figure 4 is a detail view in horizontal section through a side portion of the device.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a cylindrical tube or caisson which is designated generally by reference character A. The tube A is adapted to encircle a pile B in spaced, substantially concentric relation thereto.

The tube A includes a plurality of sections 1. The sections 1, with the exception of the bottom section, comprise reduced lower end portions 2 which are telescopically engageable in the sub-jacent sections.

The lowermost section 1 is provided, on its lower end, with a substantially frusto-conical shoe 3 which encircles the pile B and which facilitates driving the tube A downwardly through the soft mud to the hard bottom of the body of water. Fixed in the shoe 3 is a ring 4.

As illustrated to advantage in Figure 3 of the drawings, each section 1 of the tube A further

includes a pair of complementary half-sections 5. One of the half-sections 5 of each pair has fixed thereon, as by welding, vertical sleeves 6 which are split from end to end, as at 7. The split sleeves 6, it will be observed, are located adjacent the vertical edges of the sections 5 on which said sleeves are mounted. Welded or otherwise suitably secured on the corresponding portions of the complementary sections 5 are substantially tangentially projecting vertical flanges 8. The flanges 8 have fixed thereon vertical tubes 9 which are slidably engageable in the sleeves 6 from the ends thereof, the splits 7 in said sleeves accommodating the flanges 8.

When installing the protector, the lowermost section 1 is assembled on the pile B. This is accomplished by simply sliding the tubes 9 downwardly in the sleeves 6 from the uppermost ends of said sleeves. The next or second section is then assembled on the pile C and the lower end portion 2 thereof is telescopically engaged in the upper end portion of the previously assembled bottom section. The end portions of the tubes 9 project from the sleeves 6 and abut. These abutting ends are welded together, as at 10, to provide continuous tubes or pipes for positively connecting the sections and for permitting jetting, if desired. Toward this end a water or air hose 11 may be connected to the upper end portions of the pipes thus formed. The sections 1 are added until a protecting shield or tube of the desired length has been assembled. The tube 1 is driven downwardly through the usual soft mud beneath the water until hard bottom is reached and the device thus provides its own bearing. Jetting through the connected tubes 9 may be resorted to to facilitate this. If desired, the space between the pile B and the tube A may be filled with sand, gravel, concrete or any other suitable material. By so doing, the lateral strength of the pile will be greatly increased.

It is believed that the many advantages of a pile protecting and additional load-carrying device constructed in accordance with the present invention will be readily understood, and although a preferred embodiment is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

A pile protector of the character described comprising a vertical tube encircling the pile in spaced relation thereto, said tube including a

