(No Model.) 2 Sheets—Sheet 1.

J. W. NIER.

APPARATUS FOR SINKING DISK ANCHORS.

No. 453,712. Patented June 9, 1891.

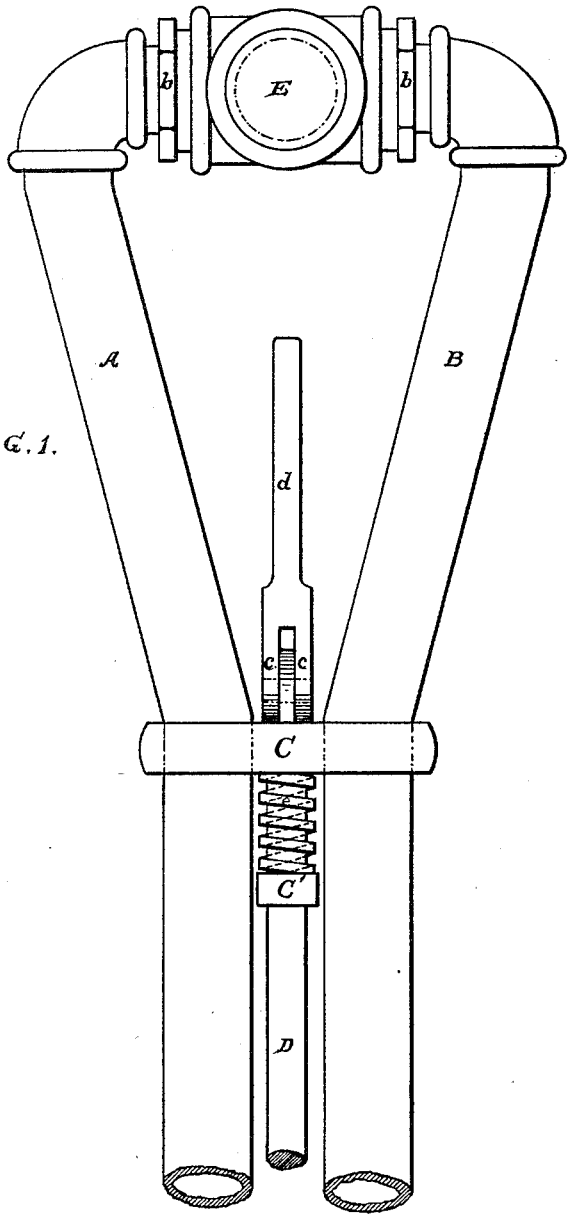

FIG. 1.

Witnesses:
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Fenwick & Carpenter

per

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(No Model.) 2 Sheets—Sheet 2.

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FIG. 4.

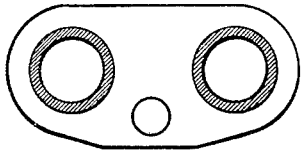


FIG. 3.

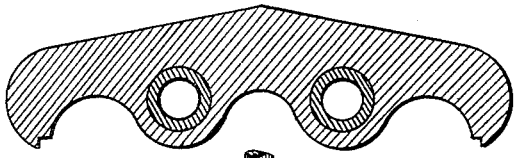
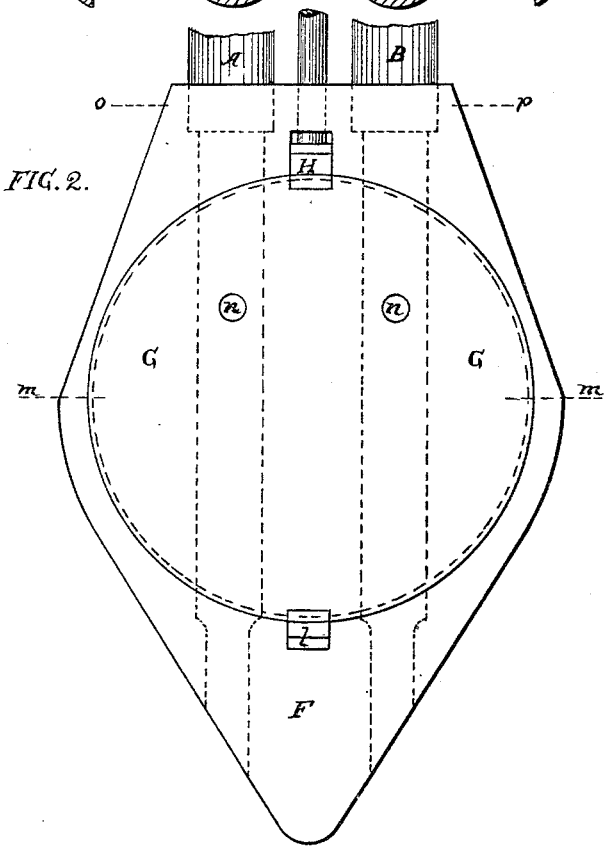


FIG. 2.



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UNITED STATES PATENT OFFICE.

JOHN W. NIER, OF KANSAS CITY, MISSOURI.

APPARATUS FOR SINKING DISK ANCHORS.

SPECIFICATION forming part of Letters Patent No. 453,712, dated June 9, 1891.

Application filed December 8, 1890. Serial No. 374,000. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. NIER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in and a new Method of and Apparatus for Sinking Disk Anchors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has relation to a new method of and apparatus for sinking objects in the banks or beds of rivers or water-ways; and the object is to provide a method of and apparatus for sinking anchors, such as are used for anchoring brush mattress when it is used for revetting river-banks and similar places.

My invention therefore consists in the novel construction of the parts and their combination, as will be hereinafter fully described, and particularly pointed out in the claims.

I have fully illustrated my invention in the accompanying drawings, wherein—

Figure 1 is a view of the harpoon, showing the formation of its upper end. Fig. 2 is a view of the harpoon, showing the formation of its lower end. Fig. 3 is a view of a section through Fig. 2 on the line *m m*. Fig. 4 is a view of a section through Fig. 2 on the line *o p*.

Referring now to the illustrations, wherein like parts are designated by the same letters of reference, A and B designate hollow supply-pipes of the usual construction, running parallel with each other, except at their upper ends, where they diverge or spread out to form a semicircular-shaped elbow, which is provided with suitable joints, the bushings *b b*, and an opening E, provided for the attachment of a rubber hose to allow water to be forced through said pipes for the well-known purpose of boring by water-jet. Said supply-pipes are held firmly together by means of metal collars C C, placed at suitable distances apart, and are also firmly welded to the shield or pointed oval plate F. Shield F is provided with a lip *l* and a concave or hollow disk G, made in a circular form. *n n* designate small openings provided on the upper surface of the pipes A and B. D designates a rod, which is secured between said pipes, being provided with a tongue-shaped clamp H at its lower end and a spiral spring *e* running around the rod, a cam *c* just above said spring, and a cam-handle *d* for operating said cam to adjust the tongue-shaped clamp H to raise or lower it, as desired, all forming a device which I call a "harpoon."

The circular-shaped concave disk or groove referred to on the harpoon is for the purpose of receiving a circular disk or mushroom anchor; but it will be readily seen that this disk or groove may be easily changed to any desired shape to receive any shaped anchors that may be thought best to use.

The operation is as follows, and the method which I claim is hereby described: When a circular disk or mushroom anchor is used, it is placed in the circular disk or groove on the harpoon, which is hollowed or concaved to receive it. The anchor having been fitted into said hollow disk, the tongue-shaped clamp at the end of the rod D is pushed down over the upper edge of the anchor by an operation of the cam-handle *d* upon the cam *c* to hold said anchor in place in the hollow disk, said anchor being at this point in a perpendicular or upright position, similar to the harpoon itself, which is then lowered into the water, pointed end downward, which, by means of water forced through the supply-pipes forming a water-jet, bores a hole in the earth. When at the desired depth, the clamp holding the anchor in the hollow disk is drawn up and made to release the anchor by an operation of the cam-handle *d* on the cam *c*. The pressure of the water from the small jets *n n*, acting on one side of the anchor after its release, causes the anchor to change from a perpendicular to a horizontal position, with its upper or flat side upward. The harpoon then being withdrawn, the sand, mud, and gravel close in and fill up the hole or opening, leaving the anchor securely buried in the bank or river-bed.

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

1. In an anchor-sinking apparatus, the combination of the supply-pipes A and B, provided with small openings *n n*, a large opening E,

and bushings *b b*, and the oval-shaped pointed shield or plate F, bearing the hollow disk G and lip *l*, and the rod D, provided with the clamp H, spring *e*, cam *c*, and cam-handle *d*, said pipes and rod being fastened together by the collar C, all substantially as described, and for the purpose specified.

2. In an anchor-sinking apparatus, the combination of the rod D, provided with the clamp H, spring *e*, cam *c*, and cam-handle *d*, with the supply-pipes A and B, provided with the openings E and *n n* and the bushings *b b*, and the oval-shaped shield or plate F, provided with the hollow or grooved surface G and the lip *l*, said rod and pipes being fastened together by metal collars placed at suitable distances from each other, all substantially as described, and for the purpose specified.

3. An anchor-sinking apparatus in the form of a harpoon-shaped device, composed of the following parts, viz: two metal supply-pipes of ordinary construction diverging outward at their upper parts to form a semicircular-shaped elbow, said pipes being provided with small openings *n n* and bushings *b b*, and a large opening E, provided with suitable means for attaching to a rubber hose or water-pipe, their lower ends being welded to a pointed oval-shaped shield, which is provided with a circular grooved surface G and a lip *l*, and a rod D, provided with the clamp H, spring *e*, cam *c*, and cam-handle *d* for adjusting the clamp H, all substantially as described, and for the purpose specified.

4. In an anchor-sinking apparatus, the combination of supply-pipes A and B, provided with a suitable opening at their junction for attaching an ordinary hose or water-pipe, and smaller openings *n n* and bushings *b b*, with an oval-shaped shield or plate pointed at its lower end and provided with a circular disk or groove G and a lip *l* for holding or receiving a circular disk or mushroom anchor, and a rod D, provided with the clamp H and a suitable spring, cam, and cam-handle for adjusting said clamp, all substantially as described, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. NIER.

Witnesses:
IRVING L. CARPENTER,
GUY C. RICH.