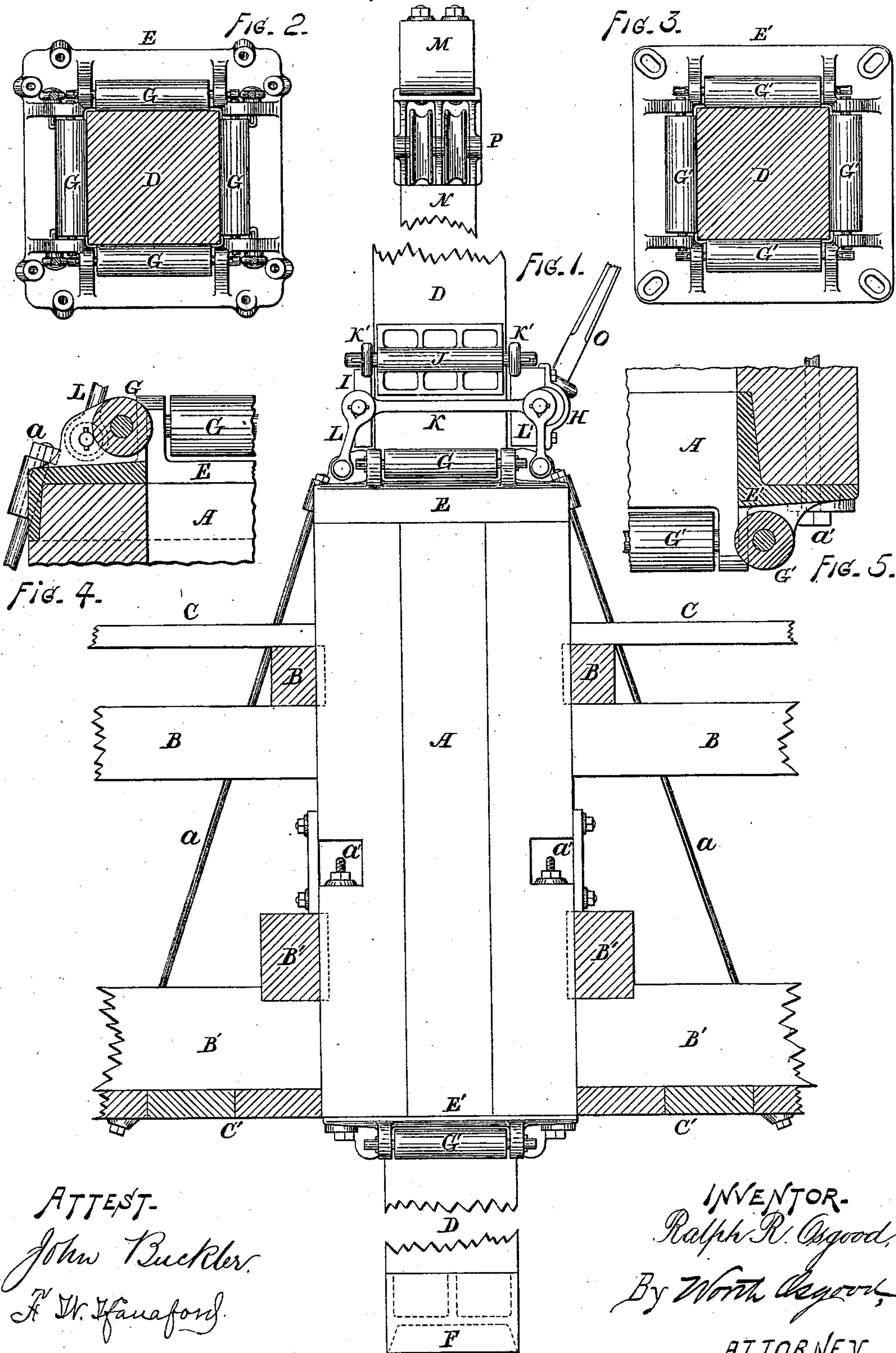


2 Sheets—Sheet 1.

No. 255,187.

Patented Mar. 21, 1882.



ATTEST.
John Buckler.
T. W. Hanaford.

INVENTOR.
Ralph R. Osgood.
By Worth Osgood,
ATTORNEY.

Model.)

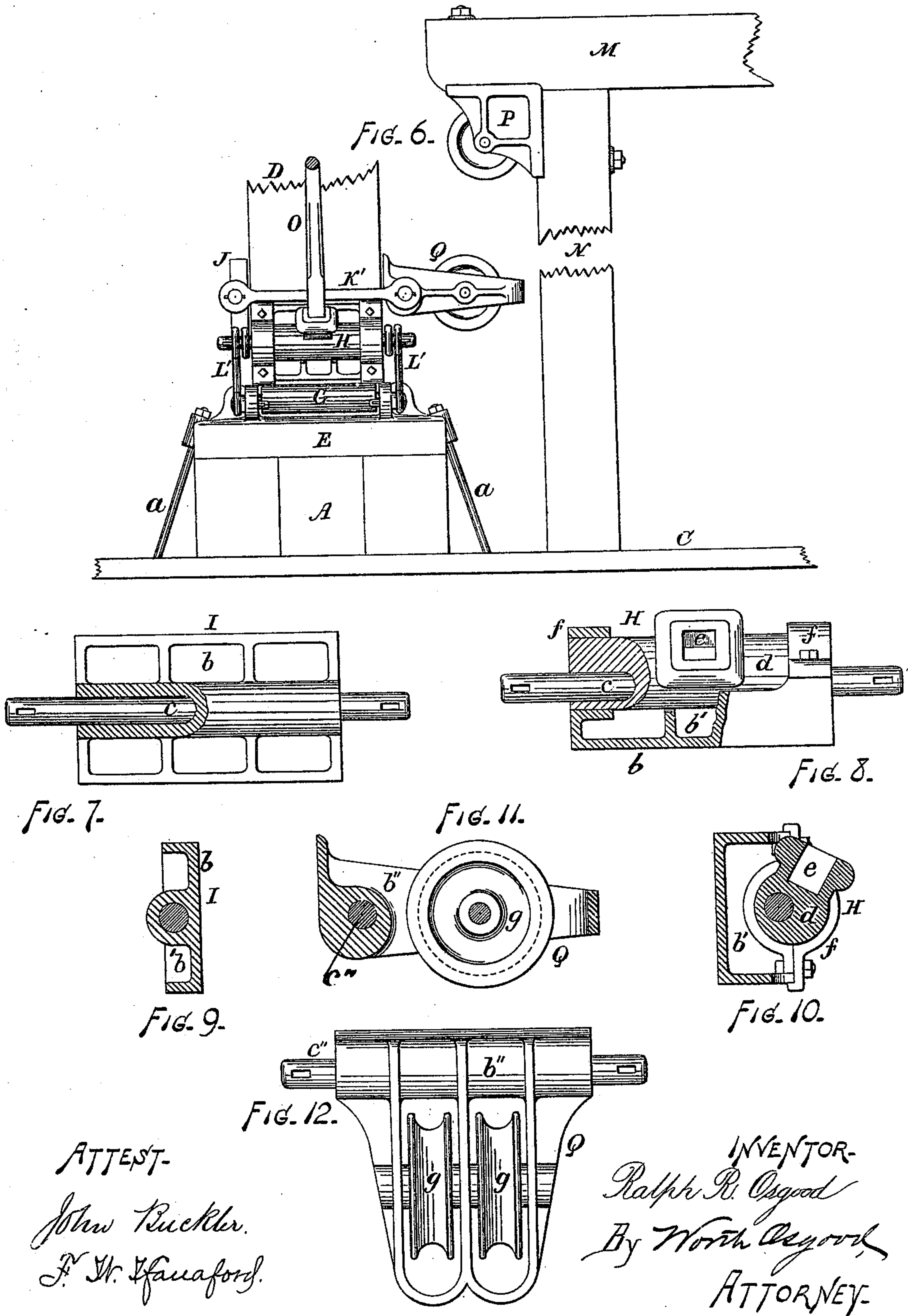
2 Sheets—Sheet 2.

R. R. OSGOOD.

SPUD FIXTURE.

No. 255,187.

Patented Mar. 21, 1882.



UNITED STATES PATENT OFFICE.

RALPH R. OSGOOD, OF TROY, ASSIGNOR TO OSGOOD & MACNAUGHTON, OF ALBANY, NEW YORK.

SPUD-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 255,187, dated March 21, 1882.

Application filed December 12, 1881. (No model.)

To all whom it may concern:

Be it known that I, RALPH R. OSGOOD, of Troy, county of Rensselaer, and State of New York, have invented certain new and useful

5 Improvements in Spud-Fixtures, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 My invention has relation to fixtures or appliances for guiding, clamping, hoisting, and otherwise controlling the movements of spud-posts, especially such as are used upon dredging-machines; but the improvements are also

15 applicable to spuds used upon other vessels or machines, as upon pile-drivers, excavators, &c., as will be readily understood.

Among the principal objects of my invention are the construction of a strong and durable

20 well-hole for containing the spud, the walls of the well being peculiarly braced and secured upon the surrounding timbers, so as to withstand the various strains to good advantage, the provision of top and bottom castings (for

25 the margins of the well) bearing friction-rollers to facilitate movement of the spud; the application to the spud of a simple, strong, and safe friction-clamp for holding the spud in any desired position; and the production and appli-

30 cation of a convenient hoisting-clamp, through the medium of which the spud may be elevated or lowered from one location to another, using machine-power for the purpose.

To accomplish these several objects and to

35 render the appliances solid, secure, convenient, and easy to adjust, as well as to insure security and ease of movement in the spud-post, my improvements involve certain novel and useful peculiarities of construction, relative ar-

40 rangements or combinations of parts, and principles of operation, all of which will be herein first fully described, and then pointed out in the claims.

To illustrate the character and scope of my

45 invention, I have chosen a spud-post and fittings or attachments particularly designed for use upon ordinary dredging machines. This illustration, in connection with the following explanation, is sufficient to enable others skilled

50 in the art to which my improvements relate to

practice my invention, and to adapt the improvements for use upon any desired class of machines.

In the accompanying drawings, forming part of this specification, Figure 1 is a side eleva- 55
tion of the spud well or casing, showing the mountings or fittings at top and bottom, the location of the spud therein, and a fragment of the hoisting-gearing above, the view being taken upon a plane cutting some of the adjacent 60
timbers, which are shown in section. Fig. 2 is a top or plan view of the casting which forms the cap of the spud-well, the spud being shown in section. Fig. 3 is a plan of the under side of the casting which forms the lower margin 65
of the spud-well, the spud being shown in section. Fig. 4 is a partial section and elevation upon a vertical plane through one side of the cap-piece or casting, and Fig. 5 is a similar view of a portion of the lower casting. Fig. 6 70
is a side elevation of so much of my improved appliance as is located above the deck of the vessel, the view being taken upon a plane at right angles to that of Fig. 1. Fig. 7 is an elevation and partial section, showing the con- 75
struction and arrangement of the rear block of the spud-clutching mechanism; and Fig. 8 is a similar view of the front or main block of the same, to which the clutching-lever is applied. Figs. 9 and 10 are cross-sections through the 80
center of devices shown in Figs. 7 and 8, respectively. Fig. 11 is a vertical section, and Fig. 12 a top or plan view, of the improved tackle-block employed for hoisting the spud.

In all these figures like letters of reference, 85
wherever they occur, indicate corresponding parts.

The spud well or casing passes entirely through the vessel, its side walls being made of any desired number of timbers, as indi- 90
cated at A. These timbers are of suitable strength and thickness, and together they form a water-tight casing to prevent admission of water to the hold of the vessel. They are framed with and secured by the timbers of the 95
vessel, as circumstances will permit—as, for instance, between the keelson-timbers and cross-pieces B' B' and the deck-timbers B B.

C represents the deck, and C' the bottom sheathing.

The spud D, as usual, is a square or rectangular piece of timber of sufficient length and of size to correspond with the strains which it may be required to withstand. It may be shod at bottom with a suitable casting, as indicated at F, though this is frequently omitted. The plate E' of the bottom casting extends over the lower ends of the well-timbers A, and is provided with an interior collar and with exterior trunnions, which support the axles of the friction-rollers G' G'. As indicated, these axles are keyed in place, and the spud D bears against the rollers on its four sides. The plate E' is secured in place by use of bolts a' a', which enter perforations in the walls A, and are held by suitable nuts, which may be reached from the interior of the vessel. Other means of securing the plate E' in place may be adopted, if desired, the object being to make it perfectly firm upon its seat. To facilitate the location of the rods a', the perforations provided for them in plate E' are somewhat elongated, as shown in Fig. 3.

At E is the cap or top casting, mounted upon the upper ends of the casing A. Friction-rollers G G are axled upon this cap same as upon the lower plate; but, instead of having an interior collar, the cap E is provided with a depending flange made to inclose the upper ends of timbers A all around. The tie-rods a serve to hold the cap firmly in place. These are preferably inclined, as shown, the better to brace the well and connect it firmly with the timbers of the vessel; but, as in respect to the bottom plate, other means of holding it in place or bracing it may be devised. With the cap-piece and bottom piece in place as above indicated, the spud, as it moves up or down in its well, bears always against friction-rollers, which insure an easy motion and prevent shock to the vessel when a strain is brought upon the spud. Any number of these spuds are to be employed about the vessel, as the case may require.

To clutch the spud at any point, either for holding it in an elevated position above the bottom or when resting on the bottom to prevent the rocking of the vessel, (which might occur if the spud be left free to move within its casing,) I employ a friction-clutch composed of two main parts, H and I—one on one side of the spud and the other opposite to it—the two being made to clamp and hold the spud by use of an eccentric, substantially as indicated in Figs. 1, 6, 8, and 10. The back plate of the clutch has an axle, e, Fig. 7, supported above and connected with the cap-piece by two links, L L. The bearing-face b of this back plate is of course plain and smooth, and it is made strong enough for the purposes intended by casting it with ribs, leaving pockets between them, as indicated, or in any other manner suitable for the purpose. The opposite plate is provided with an eccentric roller, d, held in place by removable cap-squares ff, and provided with an axle, e, same as the back plate, I. The axle of the front plate is held in

links L' L', and both axles are connected by eye-bars K, one on each side of the spud. The eccentric d is provided with a socket, e, for receiving a hand-lever, O. By bearing down on hand-lever O it is plain that the two plates of the clutch must be brought into contact with the spud, the eccentric d crowding the face-plate b' of part H and drawing that of part I, through the medium of eye-bars K, against the sides of the spud. By elevating lever O the strain upon the bars K is relieved, and the links L L' admit of the two parts of the clutch immediately assuming positions wherein they will not interfere with the free movements of the spud. The hoisting-clamp, also composed of two main parts oppositely disposed upon the spud, is shown as located above the holding-clutch mechanism. One part, J, has a flat bearing-face, and is formed much the same as the clutch-plate I, Fig. 9, having an axle upon which are mounted the eyebolts K' K'. The other section, Q, is made in the form of a pulley-block, the part b'', for bearing against the spud, being mounted upon an axle, e'', a little below the center of the bearing-surface, which axle is joined with that of part J by the links or eyebolts K'. At the rear of b'' are the arms which support the pulleys g, the whole being made firm and substantial. One, two, or any number of pulleys may be employed. A chain or rope or cable being wound around these pulleys and strained so as to elevate the part Q, it is plain that the spud will be clamped between J and Q and must rise with them. The spud being held fast by the holding-clutch or otherwise, if the hoisting chain or rope be slacked, the rear end of block Q will drop sufficiently to release the spud. This union of the pulley and clamp in one block is a convenient and cheap method of construction, and contributes to the durability of the whole, as well as ease of management.

The hoisting chains or cables are intended to be connected in any desired manner and to be moved by power upon the vessel. They may be led through the pulley-block P, supported upon any convenient standard, as N M, directly over Q; but this standard is not an essential feature, since they may be led from any other convenient point.

The construction enables me to hoist and lower the spud by power in a convenient and easy way—a decided advantage over the hand appliances heretofore commonly used for the purpose. The clamping and releasing of the spud is automatic, and the hoisting attachments in no way interfere with the other appliances.

The spud is shown as broken at top and bottom, Figs. 1 and 6, indicating that it may be of any desired length, and the broken upright N indicates a piece of any suitable height.

When constructed and arranged for operation substantially in accordance with the foregoing explanations, the appliances are in all respects adapted for accomplishing the purposes or objects of the invention as previously

stated. By their use I am enabled to easily and quickly control the movements of the spud and to hold the same firmly at any place. The upper and lower sets of friction-rollers, being
5 located at a considerable distance from each other, afford a firm bearing against the spud, which is thus enabled to hold the boat or machine to good advantage. It is preferred to locate the spud-wells within the sides of the
10 vessel or machine; but obviously they might be located upon the outside, following the general principles of construction above alluded to.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. In combination with the spud-well constructed substantially as described, the bottom casting secured thereon and carrying the friction-rollers for bearing against the sides of the
20 spud-post, substantially as and for the purposes set forth.

2. In combination with the spud-well constructed substantially as described, the top casting or cap mounted thereon and carrying
25 the friction-rollers for bearing against the sides of the spud-post, substantially as and for the purposes set forth.

3. In combination with the removable flanged cap secured upon the spud-well timbers and
30 carrying the friction-rollers, the two-part clutch mechanism mounted upon said cap, and constructed and arranged to operate in connection with the spud, substantially as shown and described.

4. In combination with the spud-well, the
35 top and bottom castings, each carrying friction-rollers for bearing against the faces of the spud-post, the parts being mounted and arranged substantially as set forth.

5. The combination of the cap-piece carrying the friction-roller, the spud-well timbers, and the inclined stay-rods, all united and secured substantially as shown.

6. The combination of the cap-piece for the spud-well, flanged as explained, the friction-
45 rollers journaled thereon, the two-part friction-clutch mechanism, the links uniting the clutch with the cap-piece, and the eyebolts connecting two parts of the clutch, substantially as shown and described.

7. The spud-well timbers projecting above the deck and secured at top by a cap having a depending flange, which cap carries the friction-rollers and the holding-clutch mechanism,
50 substantially as and for the purposes set forth.

8. In combination with a spud-post, an automatic hoisting clamp composed of two parts, one part carrying one or more pulleys for the application of the hoisting chain or cable, and both parts united by suitable links or side bars,
60 substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

RALPH R. OSGOOD.

Witnesses:

WORTH OSGOOD,
F. W. HANAFORD.