

No. 656,369.

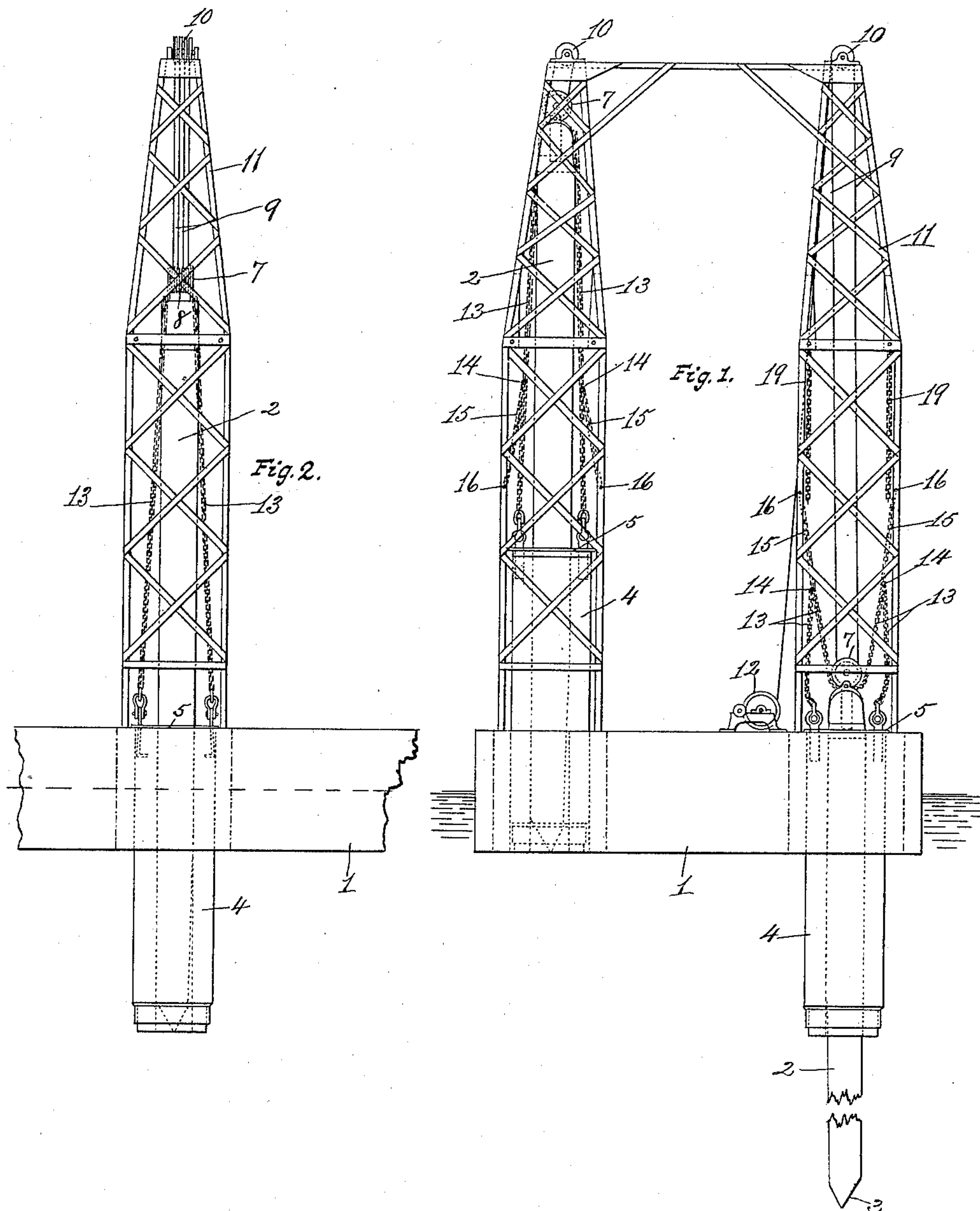
Patented Aug. 21, 1900.

R. R. OSGOOD.
ANCHORING DEVICE FOR DREDGES.

(Application filed May 21, 1900.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses,
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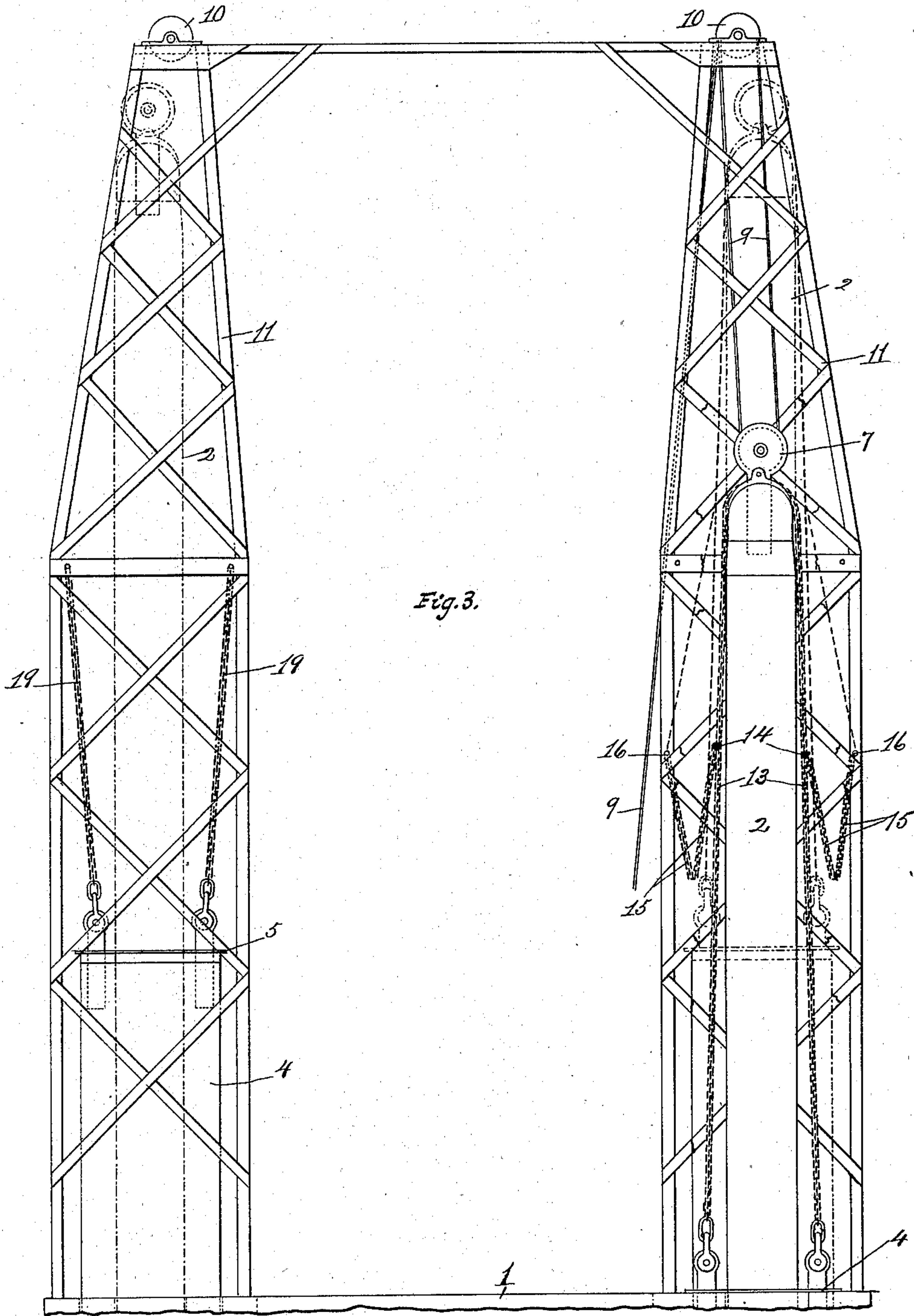
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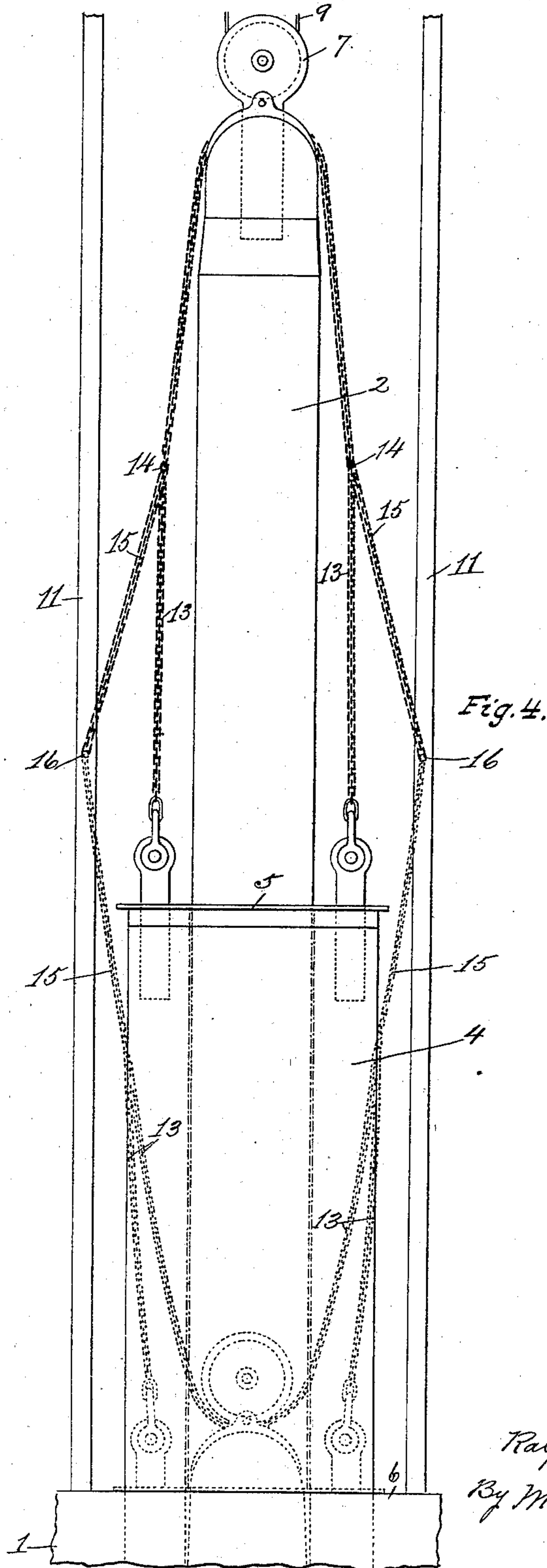
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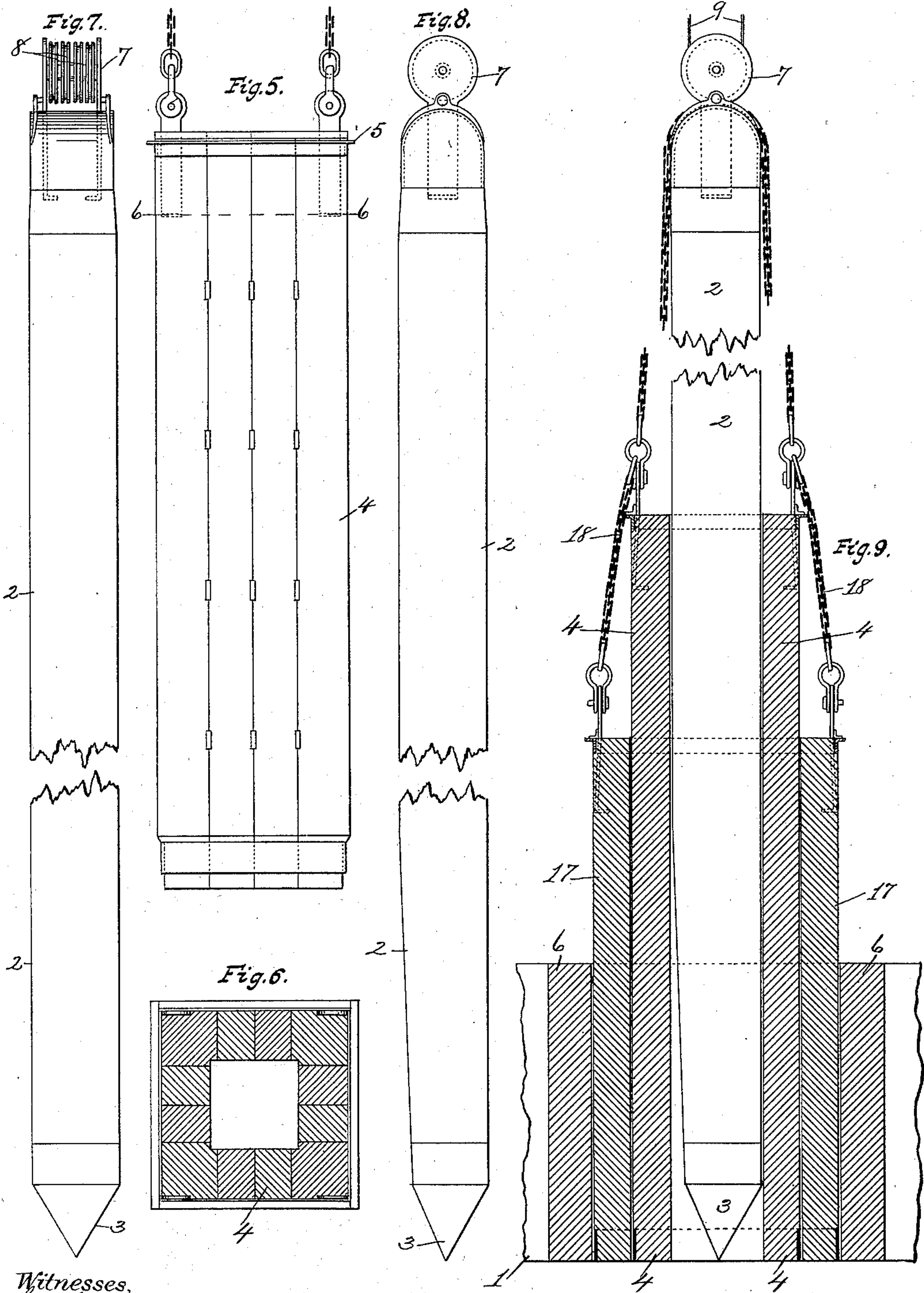
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4 Sheets—Sheet 4.



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Inventory:-
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UNITED STATES PATENT OFFICE.

RALPH R. OSGOOD, OF LANSINGBURG, NEW YORK.

ANCHORING DEVICE FOR DREDGES.

SPECIFICATION forming part of Letters Patent No. 656,369, dated August 21, 1900.

Application filed May 21, 1900. Serial No. 17,338. (No model.)

To all whom it may concern:

Be it known that I, RALPH R. OSGOOD, a citizen of the United States, residing at Lansingburg, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Anchoring Devices for Dredges, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures.

The object of my invention is to reinforce, reduce the weight of, and facilitate the manipulation of, an anchoring-spud for dredges and the like.

In the operation of dredges a floating body or boat is usually anchored in position by means of the posts or spud connected with the boat and having a pointed lower end adapted to engage the subaqueous bed or bottom. When operating in comparatively-deep water, it has been necessary not only to use a proportionally long spud, but also to increase the strength of the same to withstand the increased transverse strain. This has heretofore been accomplished by increasing the cross-sectional dimensions of the spud. Such spuds are commonly built up of wood and have been made as large as seventy-five feet in length and five feet square, the weight of such a structure being about eighty tons. Each time the position of the dredge is changed it is necessary to operate the spud, and in thus changing position a dozen or more times a day, as is frequently necessary, the loss of time and force expended in thus operating such a mass of timber is very great.

The purpose of my invention is to obviate the disadvantages of such former structure of spud.

Referring to the drawings, Figure 1 is an end elevation of the boat or floating body of a dredge or the like provided with two of my improved anchoring devices, showing on the left side of Fig. 1 the anchoring device in an

elevated position and on the right-hand side the anchoring device in a lowered position, as in use. Fig. 2 is a side elevation of the same with the body of the boat broken away and the anchoring device partly raised. Fig. 3 is an enlarged view of the superstructure shown in Fig. 1, partly broken away, and showing on the right-hand side the upper end of the spud in a partly-raised position, the fully-raised position of the spud and its inclosing sleeve being indicated by dotted lines, while on the left-hand side of said figure the upper end of the sleeve is shown supported in a raised position, the position of the spud being indicated by dotted lines. Fig. 4 is a side elevation, on an enlarged scale, of the spud and inclosing sleeve in an elevated position, showing a portion of the tower framework or superstructure. Fig. 5 is a view in side elevation of the spud-inclosing sleeve detached. Fig. 6 is a cross-section of the same, taken on the broken line 6 6 in Fig. 5. Fig. 7 is a view in front elevation of the spud. Fig. 8 is a side elevation of the same. Fig. 9 is a view, partly in elevation and partly in central vertical section, of the spud-well, spud, and two telescoping spud-inclosing sleeves.

The excavating mechanism of the dredge is omitted from the drawings.

The floating body or boat 1 may be of any known form, such as that commonly used in floating excavators or dredges.

2 is an anchoring-spud, which may be of any desired material and dimensions, being preferably rectangular in form and having a tapered or pointed lower end 3.

4 is a spud inclosing and reinforcing sleeve, shorter than the spud, and which may be formed in any known manner, being preferably built up of timbers in the manner illustrated in Figs. 5 and 6, the sleeve being adapted to loosely fit and support the shaft of the spud, which is adapted to reciprocate through the sleeve.

The spud and its reinforcing-sleeve may be connected with and supported by the boat in any known manner, as by inserting them in a well formed in the boat, through which they are adapted to reciprocate into and out of the water in the same manner as the spud has heretofore been inserted.

The sleeve is provided with a flange 5 on

its upper end adapted to engage the top of the inclosing well 6, whereby the sleeve is supported when in its lowermost position, in which position it projects below the bottom of the boat a considerable distance, thus serving to reinforce the spud and to transfer the breaking-point of the spud from the level of the bottom of the spud-well to the level of the lower end of said sleeve and comparatively near the point of work. The sleeve may be of any desired length.

Any known means may be employed for raising and supporting the spud and its inclosing sleeve. I have shown the upper end of the spud provided with a sheave-case 7, which supports one or more cable-supporting sheaves or pulleys 8, adapted to receive the cable 9, which passes over a pulley 10 at the upper end of the tower or framework 11, erected above the well, and thence to a drum 12 on the deck of the boat, whereupon it is wound by power in any known manner. By means of said cable and pulleys the spud can be raised and lowered, as desired. As a means for raising and supporting the spud-inclosing sleeve the upper end of the sleeve is preferably connected with the upper end of the spud by chains or cables 13, of a length approximately equal to the difference in length of said spud and sleeve and adapted to raise and support said sleeve during the latter part of the rising movement of the spud. It will thus be seen that the spud can be raised from the position shown at the right-hand side of Fig. 1 to that shown in Fig. 2, wherein it is drawn up flush with the bottom of the sleeve without the sleeve being raised, and that further upward movement of the spud will cause the sleeve to be carried upward therewith until the parts reach the position shown at the left-hand side of Fig. 1, wherein the lower end of the sleeve and spud are flush with the bottom of the boat or well.

When the spud is very long, the difference in length of the spud and sleeve may be considerable, necessitating the use of comparatively-long chains 13, which become slack when the spud is lowered fully into the sleeve and well. To prevent such slack chains from resting upon the deck of the boat, I connect an intermediate point 14 of the chain 13, by means of the flexible connection 15, with the tower or framework 11 at a point 16, about midway between the top of the spud when raised and the top of the well, such that when the spud and sleeve are fully raised the connection 15 will be taut, as shown by solid lines in Fig. 4, while when the sleeve and spud are lowered fully into the well the connection 15 will hold the chain 13 suspended in the form of an upwardly-extending loop, as indicated by dotted lines in Fig. 4.

In moving the dredge from place to place in comparatively-deep water it is not necessary to fully raise the spud and its inclosing sleeve; but the spud alone can be raised sufficiently to release the boat, being drawn up

flush with the bottom of the sleeve to the position shown in Fig. 2. When, however, it is desired to move the dredge a long distance or into shallow water, both the spud and sleeve can be raised until they are wholly withdrawn from the water, as shown at the left-hand side of Fig. 1, thus affording no impediment to the movement of the boat.

By means of the construction above described I am able to employ a spud of extreme length but of comparatively-small cross-sectional dimensions and of comparatively-small weight, which can be easily and quickly manipulated to change the position of the boat and at the same time by means of the reinforcing-sleeve I am able to make a spud of comparatively-small cross-sectional dimensions equal in strength to those formerly employed of extreme size.

When desired, the spud may be provided with a plurality of inclosing and supporting sleeves forming a telescoping construction in connection with the spud and spud-well.

In Fig. 9 I have shown the spud 2 and sleeve 4 inclosed within a second sleeve 17, shorter than the inner sleeve and all inserted in the well 6. The upper end of the second sleeve 17 is connected, by means of chains 18, with the upper end of the inner sleeve 4, which chains are approximately equal to the difference in length of the two sleeves, whereby when the spud is raised the respective sleeves are successively raised also to the position shown in Fig. 9.

The sheave-case 7 is permanently and rigidly fixed upon the upper end of the spud, as shown, whereby it is adapted to maintain a uniform position whether the spud raising and supporting cable is taut or slack.

The spud and one or more reinforcing-sleeves may be connected together in any known manner, so that the several parts will be successively operated by the operation of the spud.

When desired, the spud-sleeve may be raised in any known manner and supported by chains 19, connected directly with the tower or framework 11, as shown in Fig. 3, left-hand side.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an anchoring device for dredges and the like, the combination with a reciprocatory spud; of a reciprocatory-spud-reinforcing sleeve mounted upon the body of the dredge.

2. In an anchoring device for dredges and the like, the combination with a reciprocatory spud; of a reciprocatory-spud-reinforcing sleeve, mounted upon the body of the dredge and means for raising and supporting said sleeve and spud respectively.

3. In an anchoring device for dredges and the like, the combination with a spud-well; and a framework erected above said well; of a spud-supporting sleeve reciprocatory in said well; a spud reciprocatory in said sleeve and well; and spud raising and supporting mech-

anism mounted upon said framework, substantially as described.

4. In an anchoring device for dredges and the like, the combination with a reciprocatory spud; of a reciprocatory-spud-supporting sleeve; means for raising and supporting said spud; and mechanism connected with said spud for raising and supporting said sleeve during the latter part of the rising movement
10 of the spud.

5. In an anchoring device for dredges and the like, the combination with a reciprocatory spud; of a reciprocatory-spud-inclosing sleeve shorter than said spud; means for raising and
15 supporting said spud; and a chain or cable connecting the upper ends of the spud and sleeve respectively and approximately equal to the difference in length of said spud and sleeve, substantially as described.

20 6. In an anchoring device for dredges and the like, the combination with a spud-well; of a spud-sleeve reciprocatory in said well; a spud reciprocatory in said sleeve and well and of greater length than said sleeve; a frame-

work erected above said well; means for raising and supporting said spud; a chain or cable connecting the upper ends of the spud and sleeve respectively and of a length approximately equal to the difference in length of said spud and sleeve; and a flexible connection between said framework and an intermediate portion of said chain or cable adapted to support the slack of the latter when the spud is lowered into the sleeve, substantially as described.

7. In an anchoring device for dredges and the like, and in combination, a spud and a plurality of spud-inclosing sleeves arranged to telescope one within another; means for raising said spud; and connecting mechanism
35 whereby said spud and sleeves are successively raised, substantially as described.

In testimony whereof I have hereunto set my hand this 15th day of May, 1900.

RALPH R. OSGOOD.

Witnesses:

GEO. A. MOSHER,
FRANK C. CURTIS.