

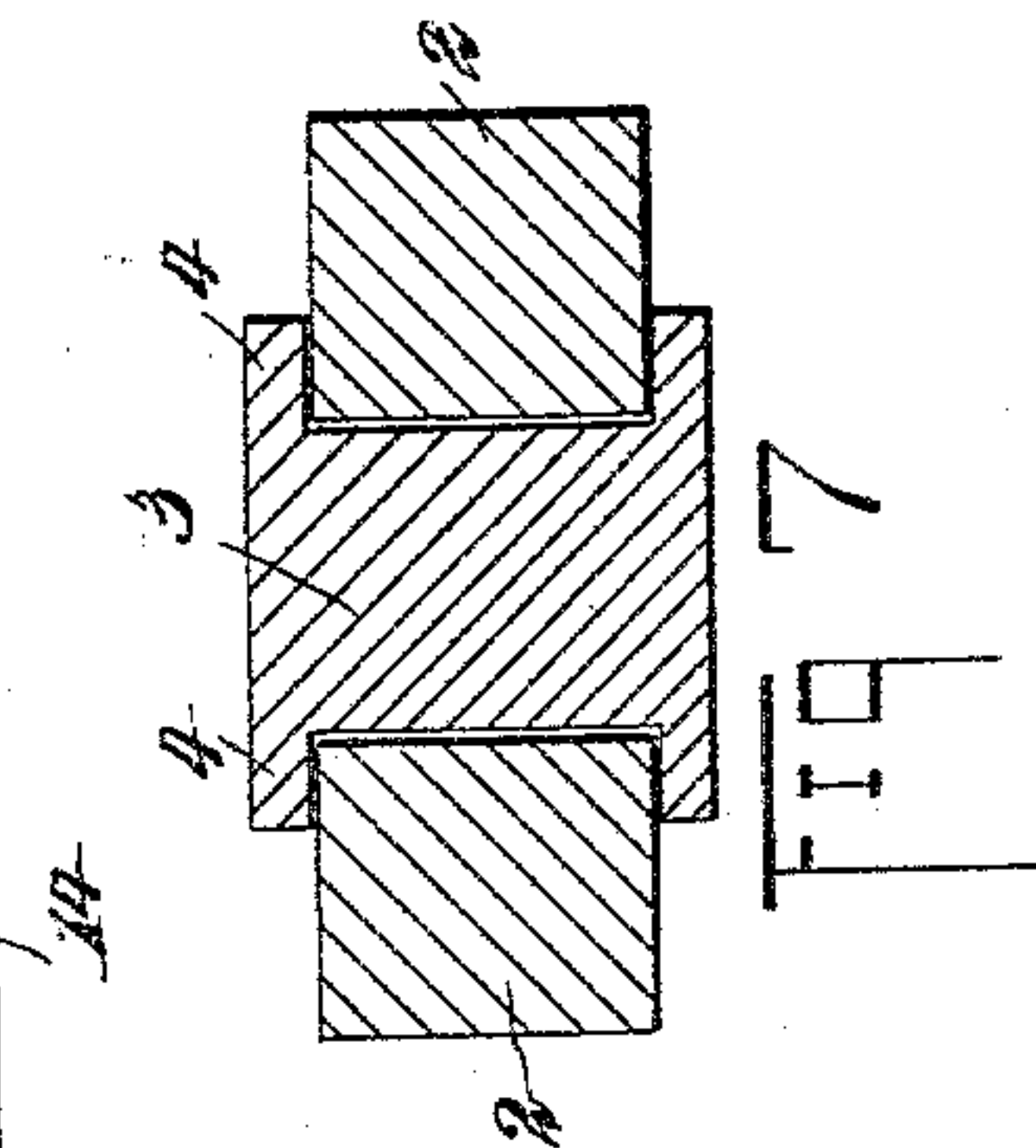
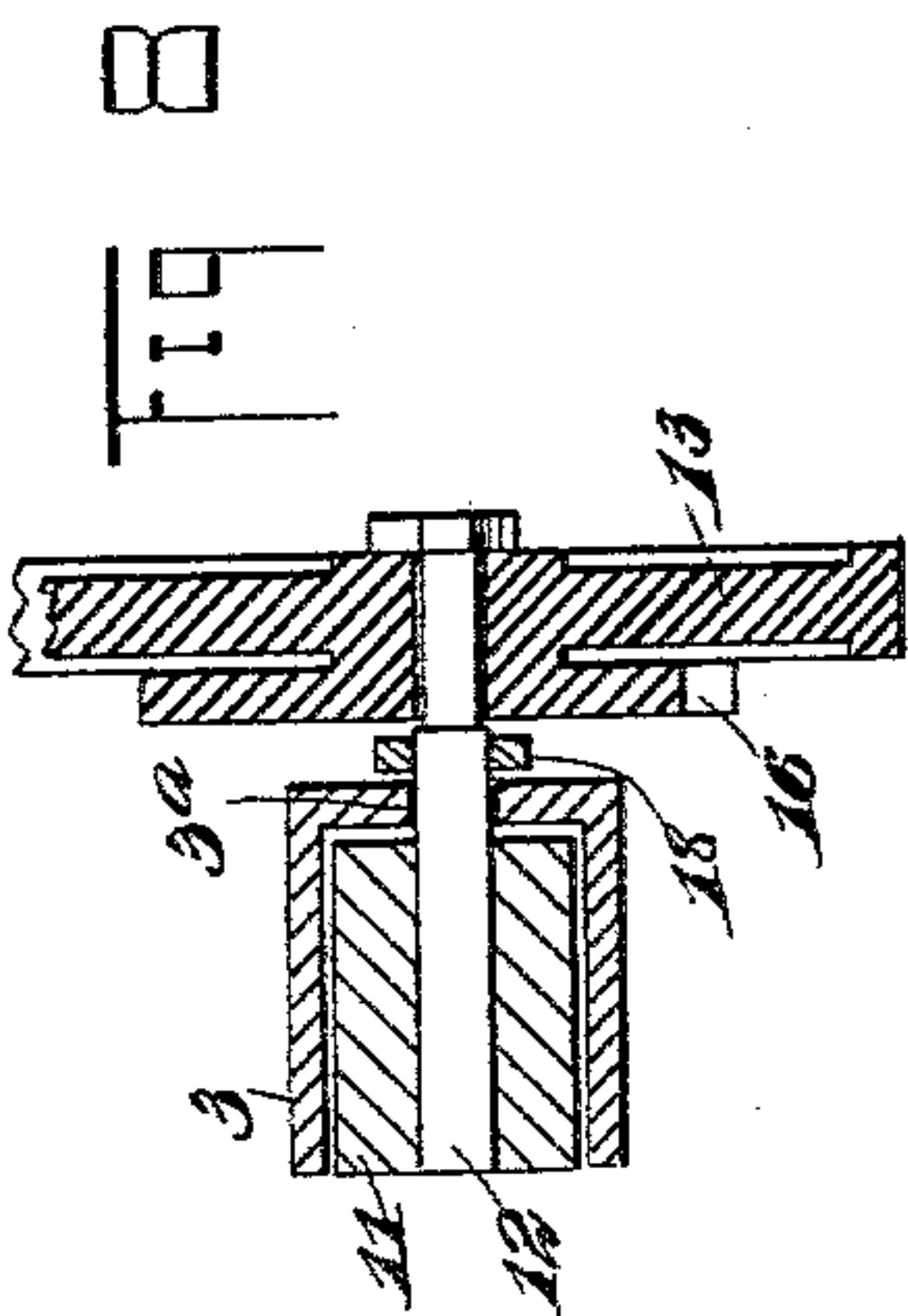
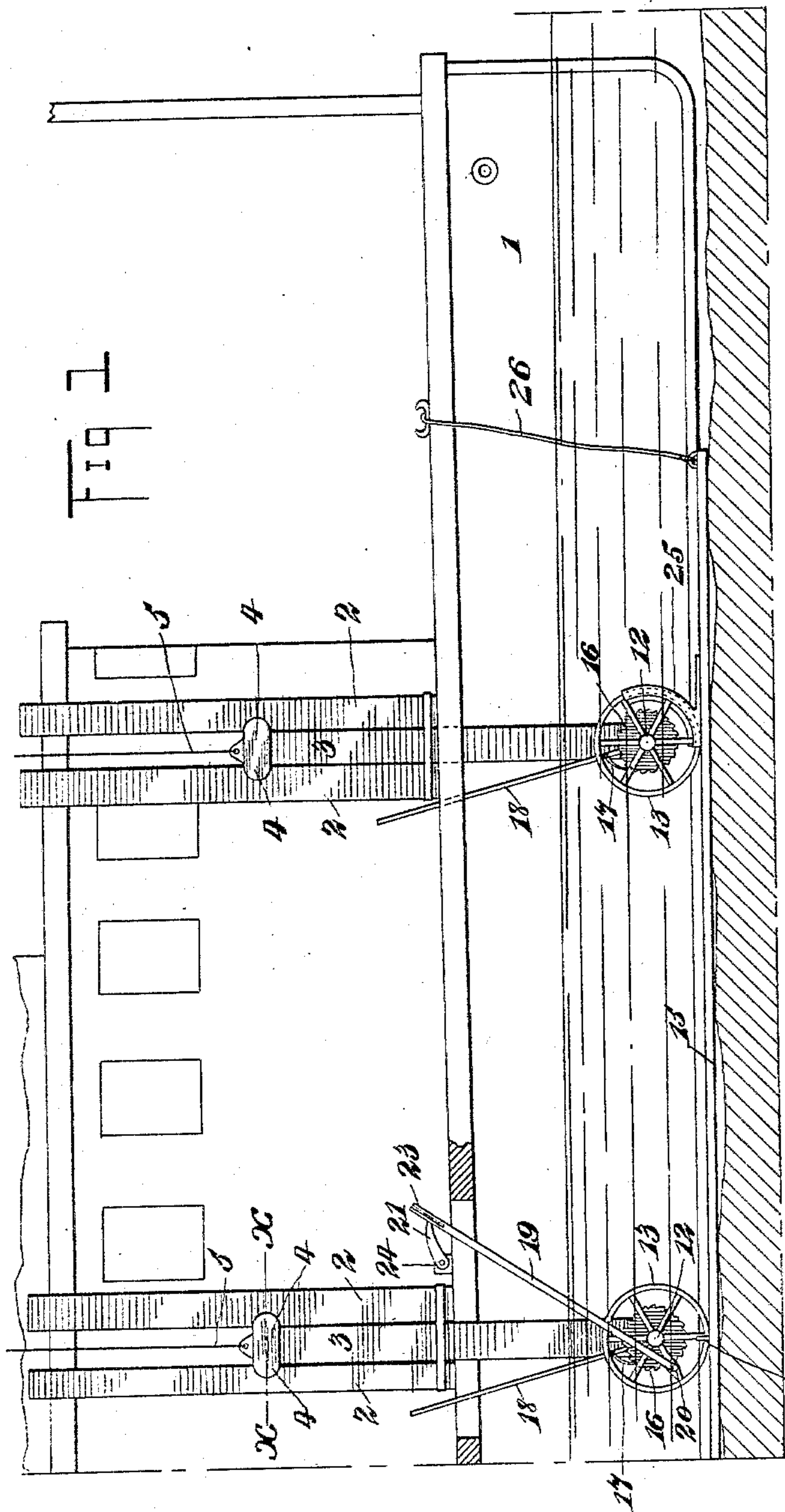
(No Model.)

2 Sheets—Sheet 1.

S. R. JUDD.
STEAMBOAT JACK.

No. 559,712.

Patented May 5, 1896.



WITNESSES:
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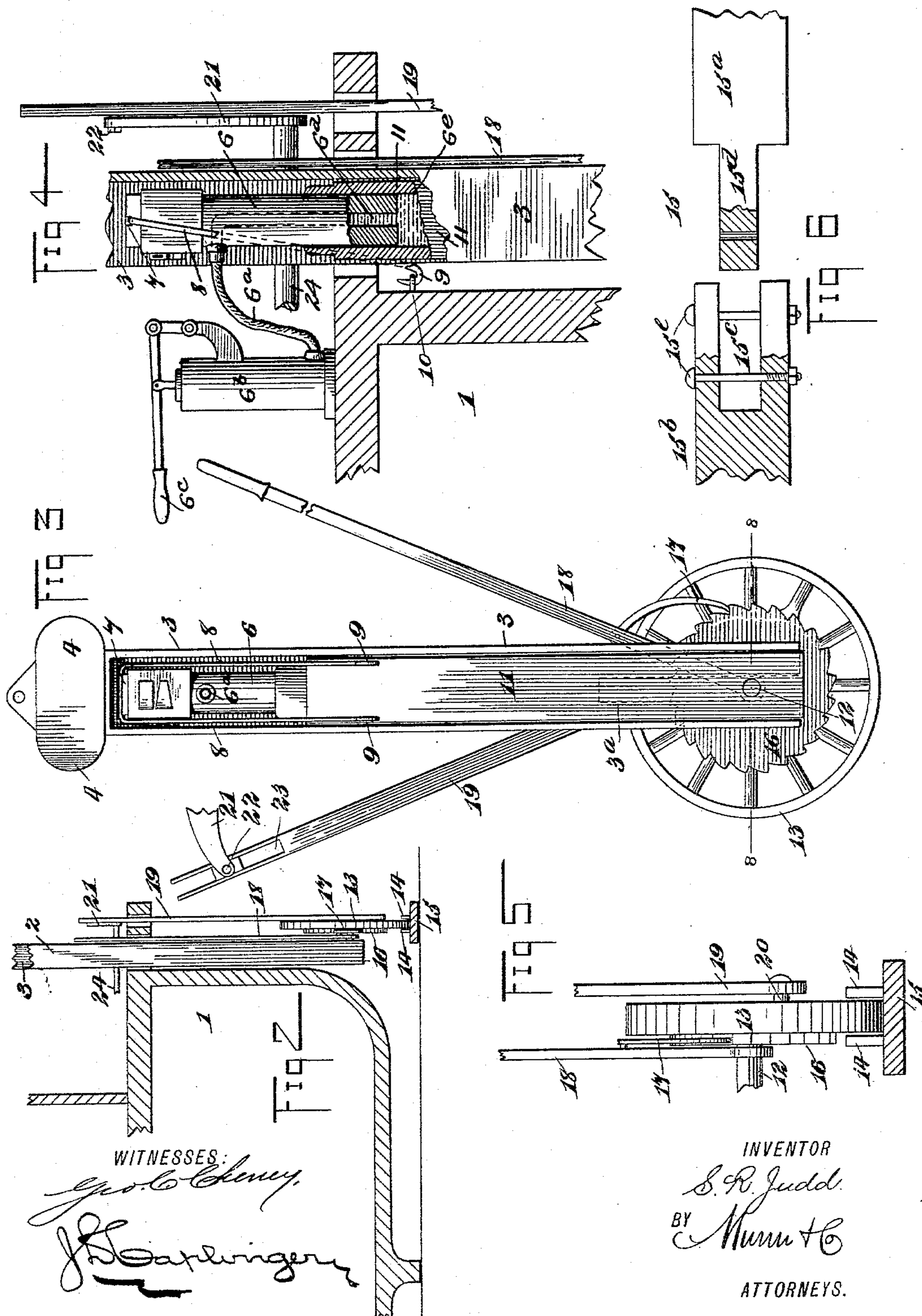
(No Model.)

2 Sheets—Sheet 2.

S. R. JUDD.
STEAMBOAT JACK.

No. 559,712.

Patented May 5, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL R. JUDD, OF LITTLE ROCK, ARKANSAS.

STEAMBOAT-JACK.

SPECIFICATION forming part of Letters Patent No. 559,712, dated May 5, 1896.

Application filed September 27, 1895. Serial No. 563,865. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL REED JUDD, of Little Rock, in the county of Pulaski and State of Arkansas, have invented a new and Improved Steamboat-Jack, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in lifting-jacks such as are adapted for use for raising vessels and moving the same off sand-bars, reefs, &c., and has for its object to provide a device of this character of a simple and inexpensive construction adapted to be conveniently used to raise boats or vessels when aground, so as to float the same into deep water.

The invention consists in a series of lifting-jacks of suitable construction, carried on the vessel and having plungers provided with rolling supports at their lower ends, arranged to be lowered into engagement with the bar or reef whereon the vessel lies, so as to raise the same.

The invention also contemplates certain novel features of the construction, combination, and engagement of the various parts of the device whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use than various other similar devices heretofore employed, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary side view showing the bow end of a boat or vessel provided with my improvements, and Fig. 2 is a fragmentary cross-section of the same. Fig. 3 is an enlarged side elevation showing the construction of the lifting-jack and its rolling support, and Fig. 4 is a fragmentary view showing the device employed for holding the jack in place. Fig. 5 is a fragmentary view showing the rolling support of the jack in edge elevation. Fig. 6 is a fragmentary view showing the means employed for joining the sections of the track whereon the rolling supports rest. Fig. 7 is a transverse section drawn to an enlarged scale and taken through the head of the jack in the plane indicated by line

x x in Fig. 1; and Fig. 8 is a sectional view taken through the rolling support of the jack on line 8 8, Fig. 3.

In the views, 1 represents the hull of the vessel, having along its sides stanchions 2, arranged in pairs and extending vertically above the main-deck, which stanchions form guides between which are arranged the vertically-movable jack-frames 3, the upper ends of which are solid, as seen in the sectional view, Fig. 7, and are provided with projecting ears 4 4 at opposite sides to engage the sides of the stanchions 2 and prevent the removal of said frames.

The frames 3 are adapted to be raised and lowered, for which purpose each frame is provided with a rope 5 or equivalent device, the opposite end of which may be passed over a windlass, so that the jacks may be lowered and raised into and out of operative position, and the lower part of each frame is hollowed on one face, by preference its inner face, as indicated in Figs. 3 and 8, to receive the jack, which is guided and vertically movable in said hollow.

The jacks employed will be by preference operated by hydraulic pressure, and 6 represents the plunger-head, having a seat or notch 7 at its upper end, in which is held the central horizontal portion of a stirrup, the ends of which are bent down, as seen at 8, and provided at their lower ends with hooks 9 to engage eyes 10 in the sides of the hull of the vessel.

As indicated in Fig. 4, the jack is provided with a tubular body having a hollow 6^c, in which is arranged to play the lower end of the plunger-head 6, said head being provided with a passage 6^d, extending longitudinally through it and communicating at its lower end with the hollow 6^c of the body 11. The upper end of the passage 6^d in the plunger-head 6 communicates by means of a pipe 6^a with the outlet-port of a hydraulic cylinder 6^b, wherein is mounted a piston having its stem connected with an operating-lever 6^e. By the operation of the lever 6^e the water or other liquid employed is forced from the cylinder 6^b through the pipe 6^a and the passage 6^d into the hollow 6^c of the jack-body, so as to force said body downward, as will be readily understood.

The lower end of the jack 11 is made solid,

and said lower end carries a shaft or axle 12, projecting from its outer side and arranged to play, when the jack is moved up and down in the jack-frame 3, through a longitudinal slot or opening 3^a in the outer face thereof. The axle may be rigidly secured to the body 11. The latter may be cylindrical in form. On the shaft or axle 12 is rotatively mounted a wheel 13, having a flat tread arranged to run between pins or projections 14 on the track 15, which may be conveniently formed of planks of proper dimensions, arranged to be lowered onto the sand-bar or bottom of the body of water wherein the vessel is, as seen in Fig. 2. Said tracks 14 may be conveniently formed of a series of sections 15^a 15^b, united as shown in Fig. 6, the section 15^b having a notched end arranged to receive a tongue 15^a on section 15^a. When the tongue 15^a is in place in the notch, the sections may be secured together by means of bolts 15^c or equivalent fastening devices. Each wheel 13 carries on its inner side a ratchet-wheel 16, having its teeth in engagement with a pawl 17, pivoted on a hand-lever 18, extending above the deck of the boat at its upper end and having its lower end fulcrumed on the shaft 12, so that when the tracks 15 have been properly placed and the wheels 13 are in contact therewith said wheels may be turned by hand-power so as to roll the boat off the bar or reef.

When it is desired to operate the wheels by steam-power, the wheels 13 are connected by means of crank-pins 20 with connecting-rods 19, extending above the deck of the vessel and slotted at their upper ends, as seen at 23, to receive slides 22, pivoted to cranks 21 on a crank-shaft 24, which may be operated from the engines of the boat or in any other way.

The tracks are hauled and raised and lowered by lines 26, and may be provided with a curved stop 25 for engaging a wheel 13 to prevent excessive forward movement of the latter. The said stop is, however, not important in function.

In operation, when it is desired to lift the boat and move her off an obstruction, the tracks are arranged under the jacks, being held by the pins 14 against lateral movement, and said jacks are lowered so as to press the tracks against the bottom, after which the stirrups are hooked to the eyes in the hull and the hydraulic pressure admitted to the cylinders of the jacks to lift the vessel sufficiently to permit the wheels 13 to be turned to move the vessel off the obstruction.

From the above description it will be seen that the device is of an extremely simple and inexpensive nature and is adapted for use on all boats and vessels, and particularly light-draft vessels, such as are employed in river commerce. By means of the device the boat may be readily and easily moved off a bar or other obstruction, whereby great annoyance is obviated and much time saved.

It will also be obvious from the above de-

scription of my invention that the same is susceptible of considerable modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the exact form of the parts herein set forth.

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

1. The combination of a vessel having vertical guides, a jack vertically movable in the guides, comprising two parts, one movable relatively to the other and means for securing one part of the jack to the vessel when the jack is in its lowered position, said jack when lowered having its lower end adapted to project beyond the bottom of the vessel to which the device is secured, in position to engage the surface on which said vessel rests, substantially as set forth.

2. The combination of a vessel having vertical guides, a jack movable in said guides, and comprising two parts, one movable relatively to the other and a stirrup having its central portion adapted to be secured to one part of the jack and having its ends arranged to engage the vessel, substantially as set forth.

3. The combination of a vessel having vertical guides, a jack-frame movable in the guides, a jack in the jack-frame, means for securing the jack to the vessel when in its lowered position, and a roller on the lower end of the jack, substantially as set forth.

4. The combination of a vessel having vertical guides, a jack movable in the guides, means for securing the jack to the vessel when in its lowered position, a roller on the lower end of the jack, and means for rotating said roller, substantially as set forth.

5. The combination of a vessel having vertical guides, a jack-frame movable in the guides and having a longitudinal slot at its lower end, a jack in the jack-frame, means for securing the jack to the vessel when in its lowered position, a shaft on the lower end of the jack, extending through the slot in the jack-frame, and a roller on said shaft, substantially as set forth.

6. The combination of a vessel having vertical guides at its side, a jack-frame movable in the guides and having its upper part formed with projections arranged to engage the opposite sides of said guides, the lower portion of said frame being formed with a hollow, means for raising and lowering the jack-frame, a jack located in the hollow at the lower part of the jack-frame and comprising two portions, one of which is movable relatively to the other, means for securing one part of the jack to the vessel when the jack is in its lowered position, and a roller on the lower end of the jack, substantially as set forth.

SAMUEL R. JUDD.

Witnesses:

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