

(No Model.)

G. M. O'DONNELL.

DREDGE.

No. 324,479.

Patented Aug. 18, 1885.

Fig. 1.

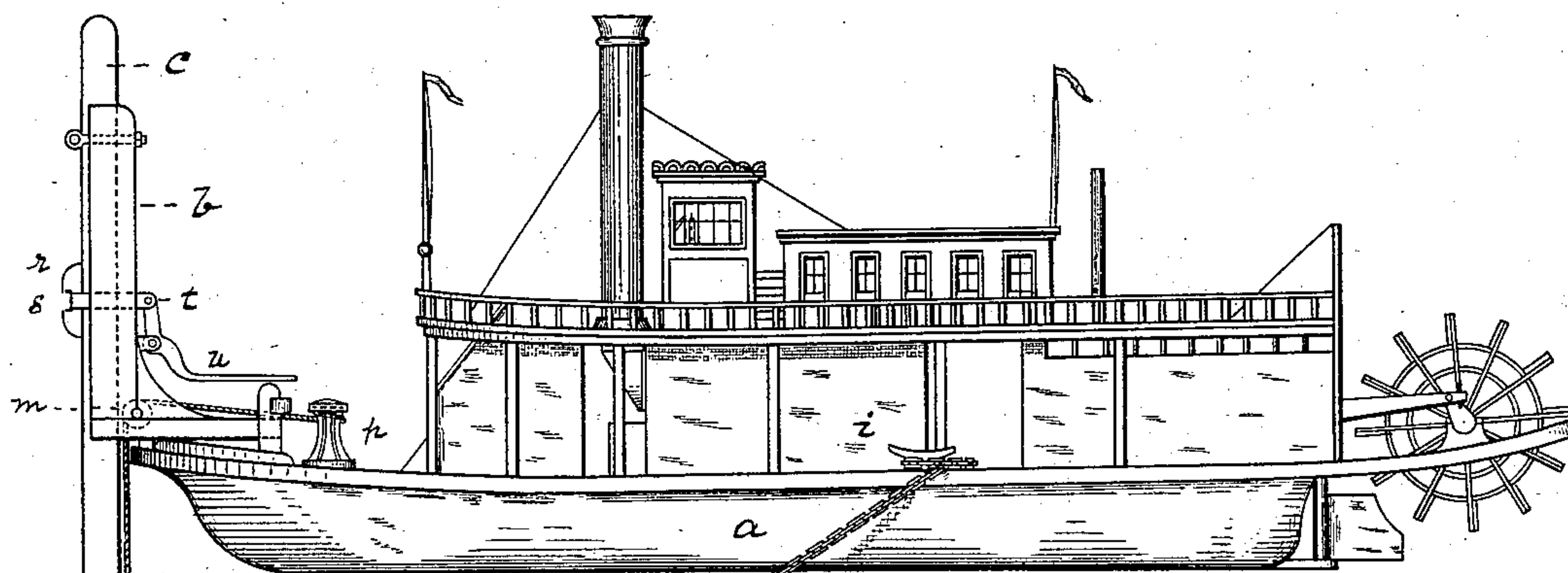


Fig. 3.

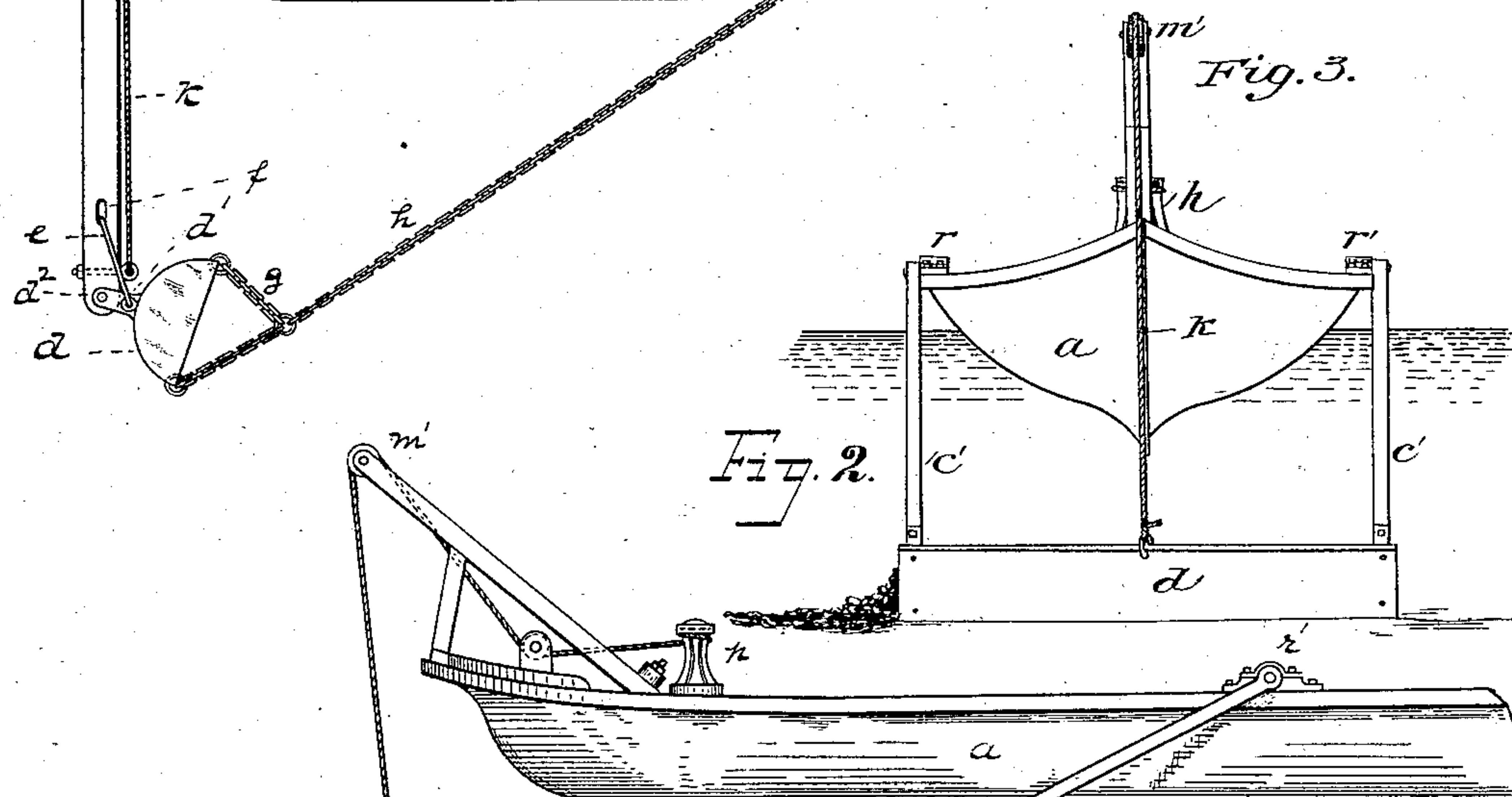
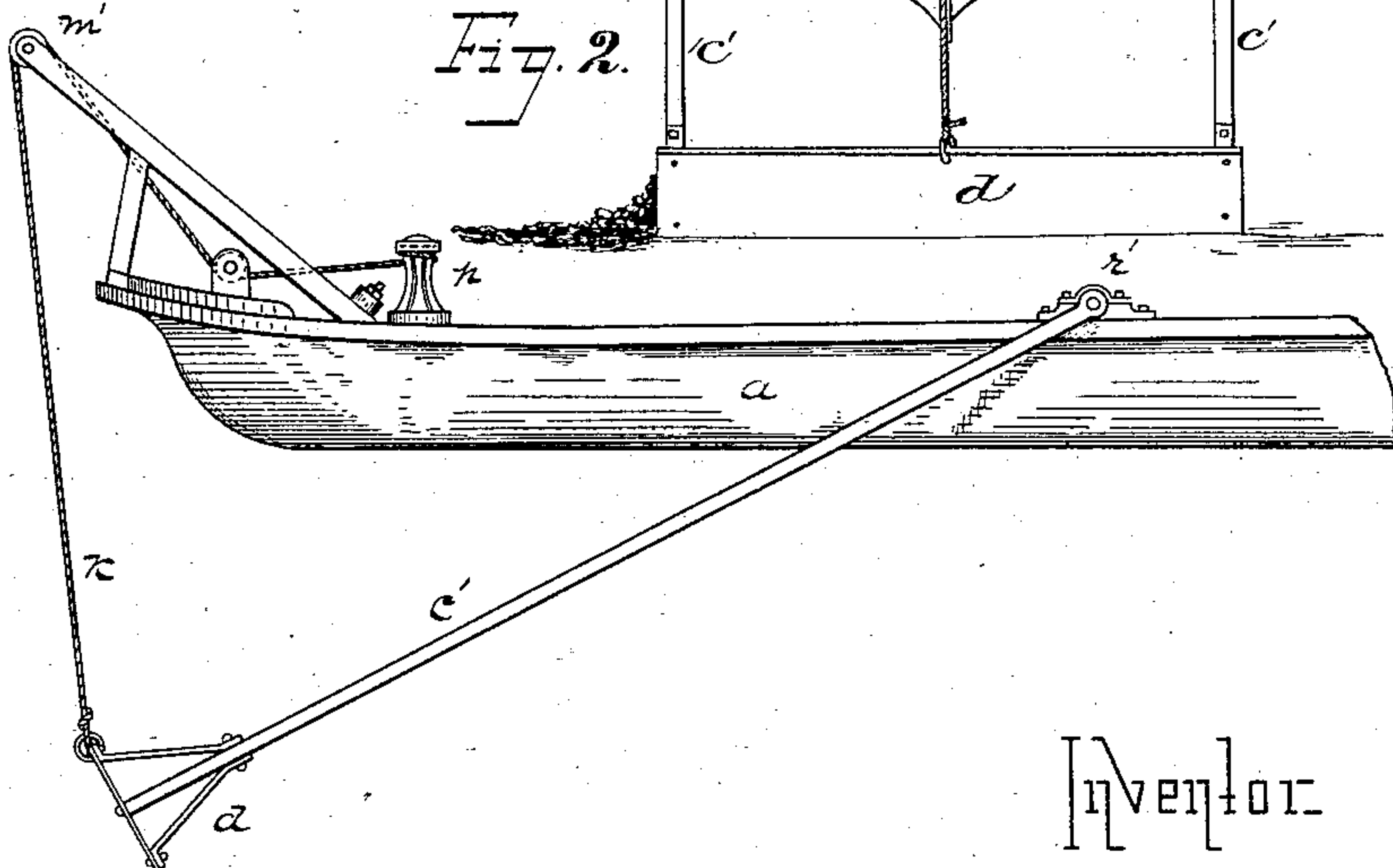


Fig. 2.



Witnesses.

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GEORGE M. O'DONNELL, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO THE WESTERN IMPROVED DREDGING COMPANY, OF SAME PLACE.

DREDGE.

SPECIFICATION forming part of Letters Patent No. 324,479, dated August 18, 1885.

Application filed August 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. O'DONNELL, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Dredges; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved dredge-boat. Fig. 2 is a modification of the same. Fig. 3 is a front elevation of my improved device.

Like letters of reference indicate like parts wherever they occur.

My invention relates to that class of dredging-vessels adapted for the purpose of increasing the depth at certain places in the bed of a stream by scraping the mud and débris, so as to carry it to a deeper portion, where it is deposited or carried away by the current.

I will now describe my invention, so that others skilled in the art may manufacture and use the same.

In the drawings, *a* represents the hull of the vessel, at the bow of which is arranged a vertical slide or way, *b*, within which is a spar, *c*, extending vertically downward in front of the bow. At the lower end of the spar is a scoop, *d*, pivoted to the spar by lugs *d'*, extending from the bottom of the scoop on each side of the spar and secured thereto by a suitable bolt or bolts, *d''*.

Pivoted to the scoop on each side thereof, or to the lugs *d'*, is a bail or guide-brace, *e*, which passes through a vertical slot, *f*, in the spar *c*, above the pivotal point *d''*. At each end of the scoop is a chain, *g*, the ends of which are secured to the corners of the scoop, and from which chains a cable or chain, *h*, passes to the sides of the vessel, where they are secured, as at *i*, so that the length of the cable may be adjusted according to the depth of the bottom of the river. The purpose of these chains *h* is to support the spar *c* against the strain exerted thereon in the dredging operation.

Secured to the lower end of the spar *c* is a cable, *k*, which passes upward through the block *m*, which is secured to the bow of the vessel or to the vertical ways *b*, and thence to

a capstan, *p*. By means of this cable and the capstan the spar is raised and lowered.

On the outer face of the spar *c*, above the bow of the vessel, is a block, *r*, having a recess, *s*, on its outer face, in which recess is fitted or secured a band, *t*, which passes through the ways *b* to the lever *u*, to which it is pivotally secured, so that by depressing the lever the block *r* is caused to bear on the spar and retain it in the desired position.

The operation is as follows: In order to dredge the bottom of the stream, the bow of the vessel is brought to the desired place, and the spar is lowered until the edge of the scoop rests on the bottom. The vessel is then backed away from the shoal into deeper water, where, by raising the spar, the scoop is inverted or partially inverted, depositing its load, and this operation is repeated as often as is necessary to produce the desired depth of water at that point.

Instead of placing the spar at the bow of the vessel, as described, the modification shown in Fig. 2 may be employed, where, instead of a single spar, two swinging spars, *c'*, are used, one on each side of the vessel, the upper end of each being pivoted to the vessel, as at *r'*, while the other and lower end is rigidly secured to the scoop *d*.

Extending from the scoop through a block, *m'*, at the bow of the vessel is the cable *k*, which passes thence to the capstan *p*.

The operation is practically the same as already described, the scoop being lowered and raised by the cable *k* in a like manner.

The chains or cables *h* are not needed, however, as the strain is exerted longitudinally on the spars on the line of their pivotal support.

The advantages of my invention are, that the scoop, being situate at the bow of the vessel, may be brought close to the shore or shoal, and where it is employed in dredging under coal-tipples it does not interfere with the tipple. The power is also more easily and directly applied from the movement of the vessel, owing to the arrangement, strength, and simplicity of the parts.

I am aware that a scoop pivotally secured to a rocking frame, which frame is pivoted at the stern of a boat, and provided with cables

for adjusting the position of the scoop and cables for raising and lowering the outer end of the frame, has been used before. I am also aware that clam-shell dredges secured to a spar which moves vertically in a slide are not new, and I do not desire to claim the same, broadly.

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

1. In a dredge-boat, the combination of a scoop arranged to be operated by the movement of the boat, situate at one end of the boat, extending from side to side thereof, and capable of being raised and lowered, a spar or cable extending from the boat to the scoop for raising and lowering the same, and spars or cables extending from the ends of the scoop to the sides of the boat forward of the stern or aft of the bows, so as to equalize the strain when the scoop is in operation, substantially as and for the purposes specified.

2. In a dredge-boat, the combination of a spar rigidly secured in a slide at one end of the boat and capable of moving in said slide in a vertical longitudinal direction, a scoop

pivotaly secured to the lower end of the spar, so as to be operated by the movement of the boat, devices, substantially as described, for raising and lowering the spar, and braces extending from the scoop to the sides of the vessel aft of the bows or forward of the stern, substantially as and for the purposes specified.

3. In a dredge-boat, the combination of the spar *c*, slide *b*, scoop *d*, arranged to be operated by the movement of the boat, brace *e* and slot *f*, and cables *h* and *k*, substantially as and for the purposes specified.

4. In a dredge-boat, the combination of the spar *c*, slide *b*, scoop *d*, arranged to be operated by the movement of the boat, devices, substantially as described, for raising and lowering the spar, and a brake-band, *t*, operated by a suitable lever, substantially as and for the purposes specified.

In testimony whereof I have hereunto set my hand this 21st day of August, A. D. 1884.

GEORGE M. O'DONNELL.

Witnesses:

W. B. CORWIN,

THOMAS W. BAKEWELL.