

No. 625,874.

Patented May 30, 1899.

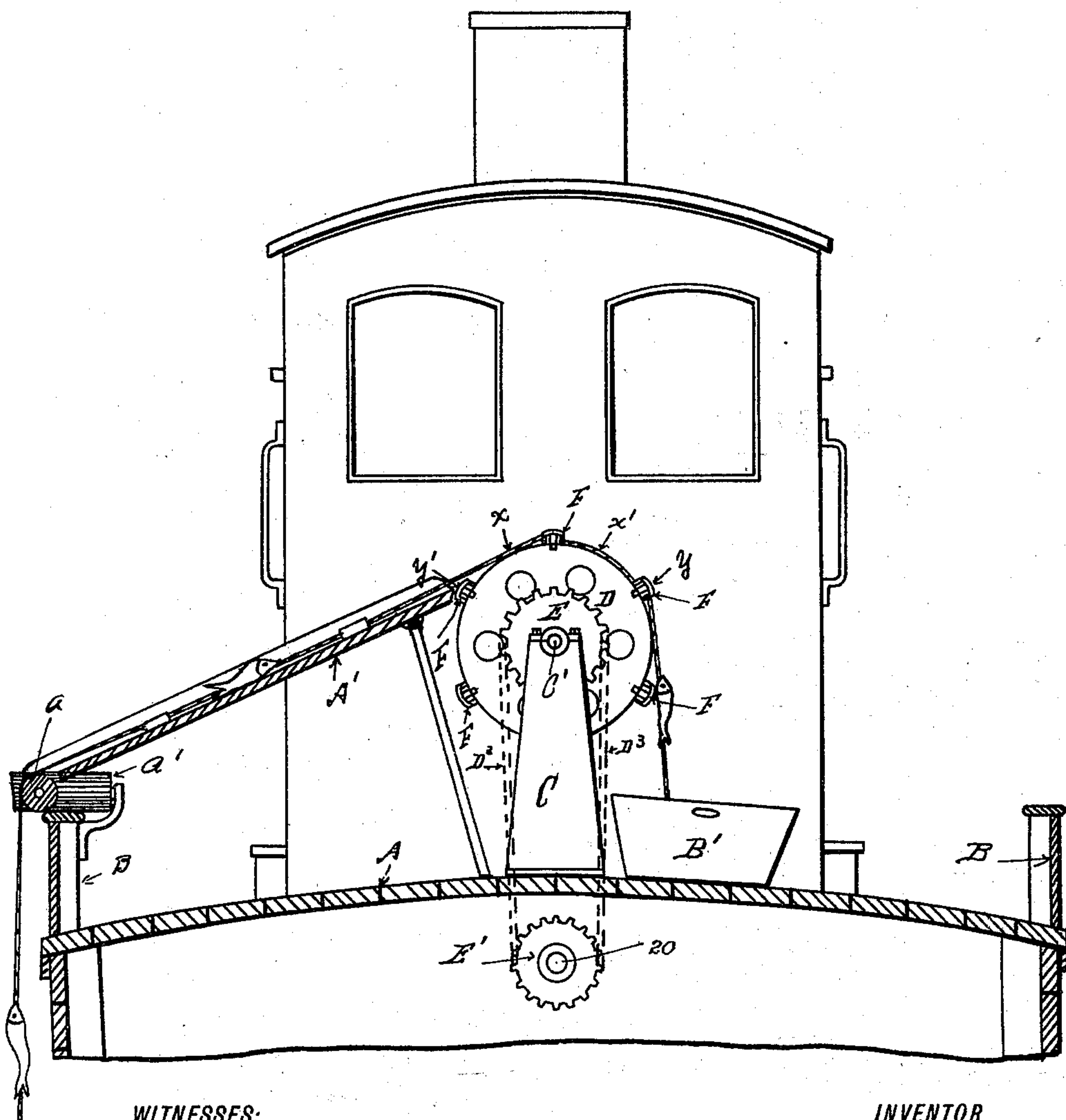
E. CROSSLEY.
APPARATUS FOR RAISING FISH NETS.

(Application filed June 25, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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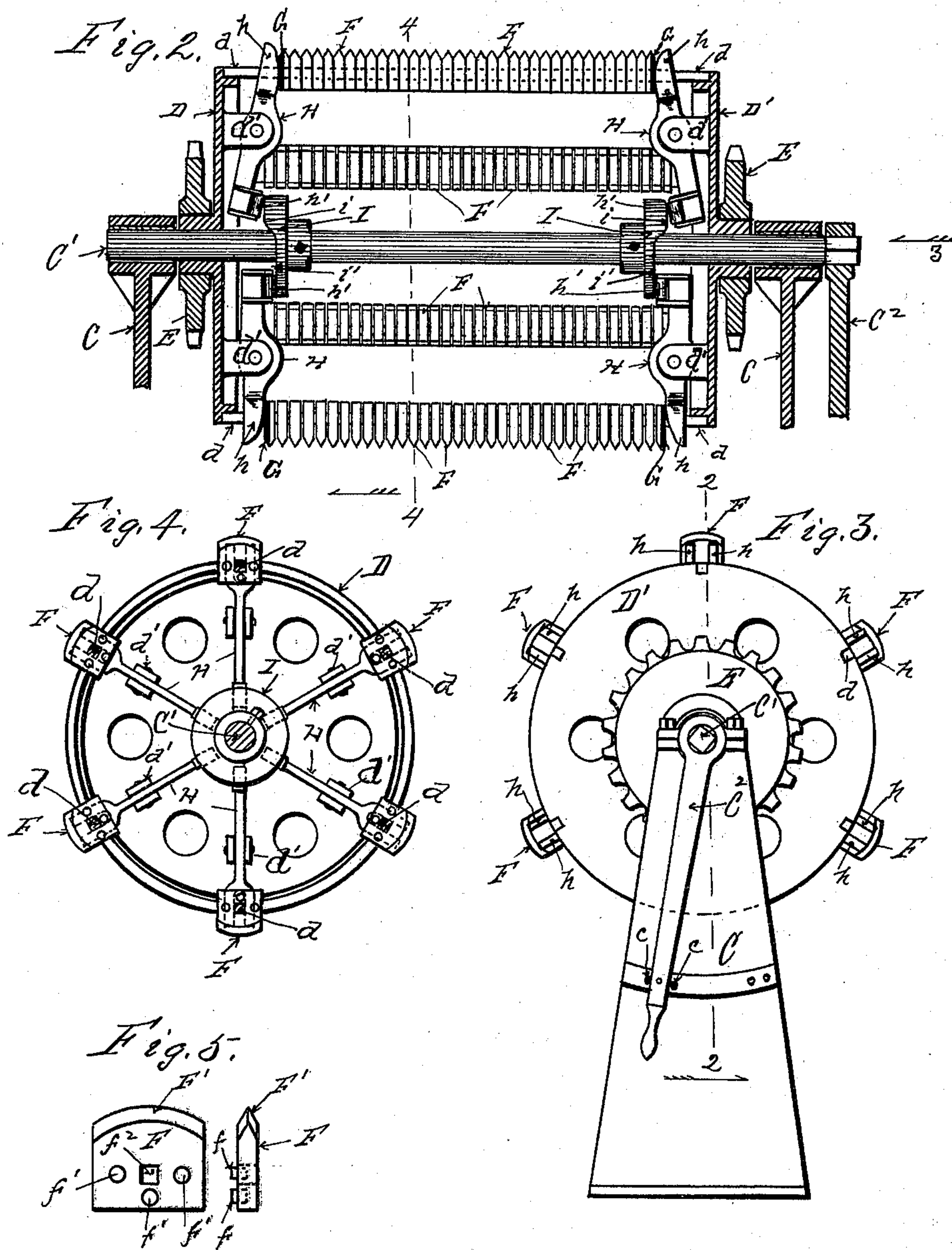
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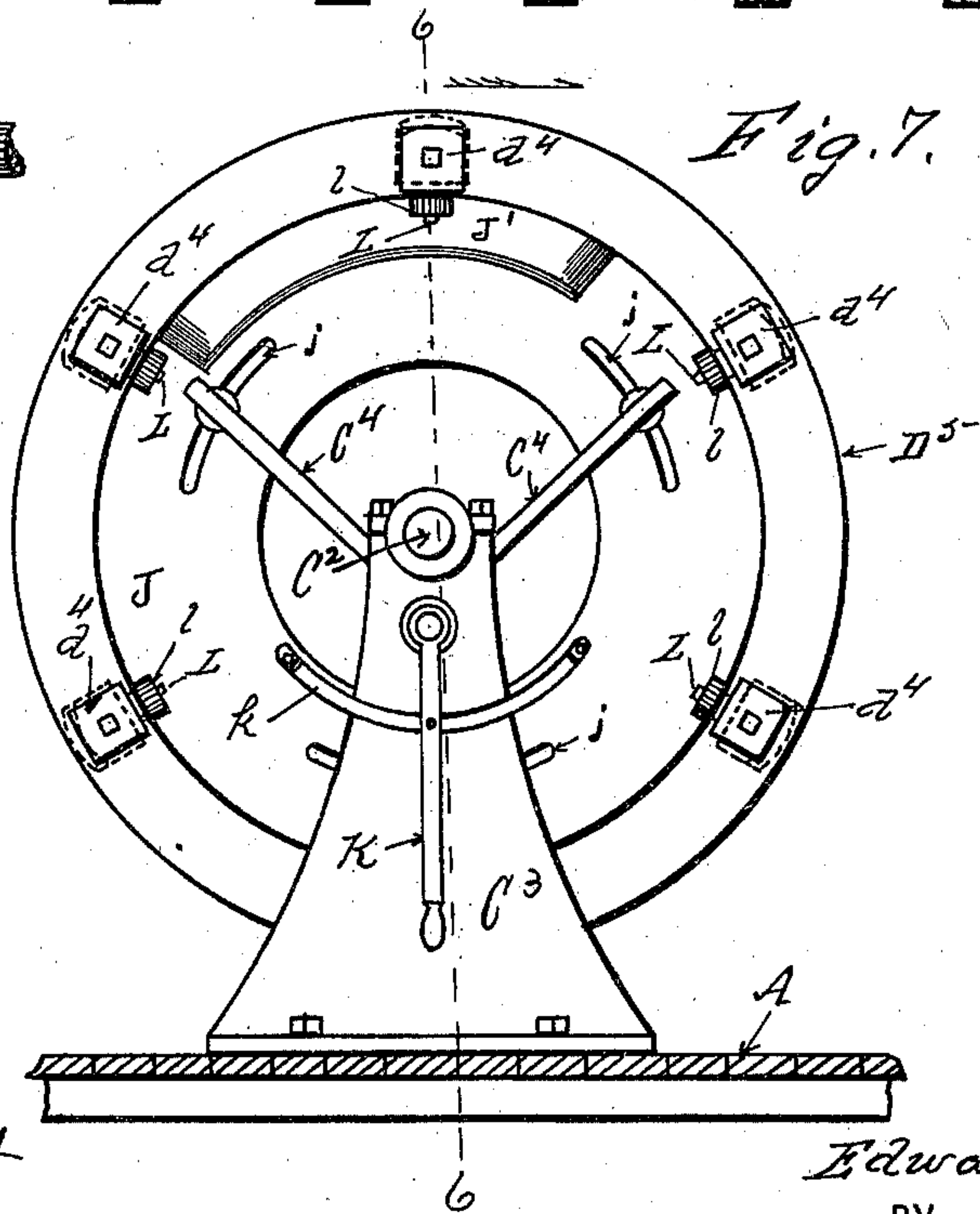
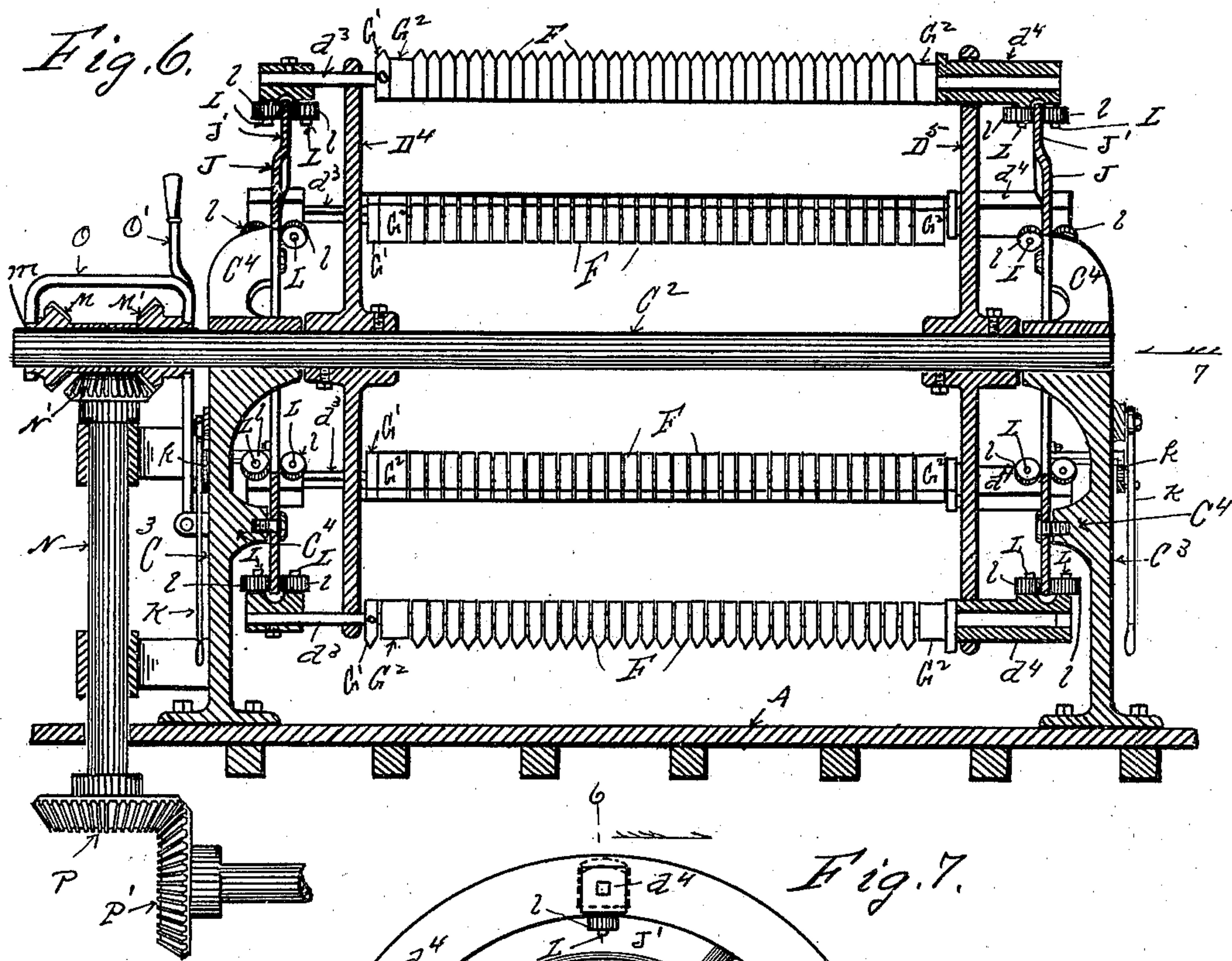
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

EDWARD CROSSLEY, OF ERIE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO
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APPARATUS FOR RAISING FISH-NETS.

SPECIFICATION forming part of Letters Patent No. 625,874, dated May 30, 1899.

Application filed June 25, 1898. Serial No. 684,483. (No model.)

To all whom it may concern:

Be it known that I, EDWARD CROSSLEY, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Raising Fish-Nets; and I do hereby 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 and numerals of reference marked thereon, forming part of this specification.

My invention relates to improvements in apparatus for raising fish-nets; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is an end view in elevation of my invention mounted upon the deck of a boat in operation. Fig. 2 is a vertical longitudinal section of the same on the line 2 2 in Fig. 3, looking in the direction of the arrow. Fig. 3 is an end view of the same in elevation, looking in the direction of the arrow 3. Fig. 4 is a transverse section of the same on the line 4 4 in Fig. 2, looking in the direction of the arrow. Fig. 5 shows enlarged side and end views in elevation of the movable clamps of my device. Fig. 6 is a vertical longitudinal section of a modified construction of my invention on the line 6 6 in Fig. 7, looking in the direction of the arrow. Fig. 7 is an end view in elevation of the same, looking in the direction of the arrow 7.

In the drawings thus illustrating my invention, Fig. 1 shows the deck A and the bulwarks B of a boat and the frame C of the machine, secured to the central part of the deck A. I secure the frame of the machine so that the shaft C', journaled therein, extends longitudinally fore and aft of the deck of the boat.

The reel or drum, as shown in Figs. 1, 2, 3, and 4, is preferably constructed of two disks D D', adapted to rotate freely on the shaft C'. The disks D D' are secured together by means of longitudinal bars d, secured to the peripheries of the disks D D', and on the hubs of the disks D D' are sprocket-wheels E E, over which sprocket-chains D³ (shown in dot-

ted lines in Fig. 1) run from a suitable sprocket-wheel E', mounted upon a power-shaft 20. The power-shaft 20 is driven in either direction, as desired, in any approved manner—as, for instance, by reversing the engine or motor which revolves it or by the use of reversing mechanism, such as hereinafter fully described. I make the bars preferably rectangular in cross-section, as and for the purpose hereinafter set forth; but in lieu thereof I can use two round bars, side by side or one above the other, if desired, and upon these bars d I place a series of clamping-blocks F, as shown in Fig. 2, the form and shape of which blocks is clearly shown in Fig. 5, and between these blocks I place springs f, of rubber or other suitable material, these springs being held in place by having the ends thereof inserted in holes f', countersunk in the faces of clamping-blocks F or in any other convenient manner. The upper portions F' of the blocks F are beveled off, so as when a rope or net is brought into contact therewith it will readily pass down between them. The clamping-blocks F are provided with rectangular openings f², through which the bars d pass, so that the blocks F will slide freely longitudinally, but will not rotate thereon. Pivoted between ears d' on the inner faces of the disks D D' are radial levers H, the outer ends h of which are forked, so as to extend up each side of the bars d behind blocks of rubber G or other resilient material. At the ends of the rows of blocks F upon the bars d and on the inner end of the lever H are friction-rollers h, which contact with the surfaces of cams I, secured upon the shaft C. The cams I have projecting faces i, which extend around prearranged portions of the circumference thereof, the remaining portions of their faces i' being depressed, so that as the reel or drum D revolves the friction-rolls h' on the levers H contact with the raised portions i of the cams during approximately one-fourth of each revolution of the drum, forcing the outer forked ends h of the levers together, so as to clamp the blocks F firmly together until the rolls h' pass off of the raised portions i and upon the depressed portions i' of the cams I, when the levers H are released and the clamping-blocks F remain free from

lateral pressure for the remaining three-fourths of the revolution of the drum D. The rubber blocks G at the ends of the series of clamping-blocks F provide, it will be observed, for the clamping of different-sized ropes or nets passing between the clamping-blocks F. Thus it will be seen that a rope or net being passed over the drum D, as illustrated in Fig. 1, will, if the cams I are so adjusted that each row of the clamping-blocks will be successively clamped as they near the highest point in their revolution. This will clamp a rope or net passing over the reel or drum between them at that point, and it will remain so clamped until it travels onward approximately one-fourth of a revolution of the drum D, when the clamps will successively automatically open and release the rope or net so clamped between them. The point at which it is desirable to have the clamps close is approximately designated on Fig. 1 as X and the approximate point where they are released by y. As here shown, the net is being raised from the left-hand side. In case, however, it is desirable for any reason to raise the nets from the opposite or right-hand side of the boat the direction the reel or drum revolves is reversed, and the shaft C', together with the cams I thereon, are rotated by means of the lever C², (see Figs. 2 and 3,) which lever is then secured in place by pins c c in the frame C, or in any other convenient manner, this adjustment of the cams I causing the levers H to act on the clamping-blocks F, so that they will engage the net, being raised substantially at the point x', and release it substantially at the point y', as indicated in Fig. 1.

In Figs. 6 and 7 I show a modified construction of my invention. In this construction the reel or drum consists, substantially, of disks D⁴ and D⁵, secured to a shaft C². Through openings in the periphery of the disk D⁴, I place rods d³, preferably square in cross-section, and through the disk D⁵, I place square sleeves d⁴, through the central openings in which the rods d³ extend, the rods d³ and the sleeves d⁴, sliding freely through the disks D⁴ and D⁵ and upon each other. On the rods d³, inside of the disk D⁴, I secure a collar G', and inside of this collar and against the inner ends of the sleeves d⁴ I place blocks of rubber G² or other resilient substance, and on the rod d³, between the blocks G² G², I place the clamping-block F, hereinbefore described, so that the inward movement of the rods d³ and sleeves d⁴ will operate to force the clamping-blocks together.

In the drawings I have shown six series of clamping-blocks F around the periphery of the reel or drum, but any desirable number thereof can be used.

For operating the rods d³ and sleeves d⁴ in and out I secure on the inside of the end frames C³ on the machine adjacent to the ends of the reel or drum circular cams J J, each of which has an inwardly projecting or depressed section J' extending approximately around

one-fourth of the circumference of the periphery of the cams J J. These cams are adjustably secured to arms C⁴ on the frame by means of bolts passing through curved slots j in the cams, so that they are adapted to rotate thereon the lengths of said slots, this rotation being accomplished by means of hand-levers K, pivoted to the end frames C³ and to yokes k, secured to the cams J J, or other convenient manner, the object of this adjustment of the cams J J being to allow the operation of the machine in the reverse direction, as has been heretofore described. For connecting the rods d³ and sleeves d⁴ with the cams J J, I secure to the outer ends of the rods d³ and to the sleeves d⁴ inwardly-projecting bearings L L, which extend down on each side of the peripheries of the cams J J and have mounted thereon friction-rolls l, which contact with the sides of the cams J J, and as the reel or drum is rotated moves the rods d³ and sleeves d⁴ in and out, so as to clamp the blocks F together while the friction-rolls l are passing the depressed portions J' of the cams J, substantially the same as in the construction hereinbefore described. For operating the reel or drum I place on one end of the shaft C² two bevel-gears M M', secured to the shaft C² by means of a spline and groove m, so that they will slide freely endwise thereon, and between these gears I place a vertical shaft N, having a bevel-gear N' on the upper end thereof, so that either the gear M or the gear M' can be moved into mesh therewith. The gears M M' are embraced by a yoke O, to which a lever O' is pivoted, by means whereof the gears M M' can be moved back and forth on the shaft C² and the direction of the rotation of the reel or drum reversed at will. The shaft N is provided with a gear P, adapted to intermesh with a suitable driving-gear P' below the deck A of the boat, or in any other convenient location.

In operation this machine is preferably secured to the central part of the deck A of the boat upon which it is to be operated, as illustrated in Fig. 1, so that an incline trough or platform A', provided with rollers a a' at the outer end thereof, can be placed between the upper portion of the reel or drum and the top of the rail B of the boat, as illustrated in the same figure, the end of the net to be raised being drawn up over the rollers a a' and on up over the inclined platform A' until the clamping-blocks F will engage it at x. The rotation of the reel or drum then carries it onward, each set of clamps successively engaging it at x and drawing it onward until they are released therefrom at y, so that it continuously travels onward over the drum or reel and is deposited in a box B' or other suitable receptacle at the side of the machine. As hereinbefore described, the operation of the drum or reel is reversible, and when it is desirable to raise the nets from the opposite side of the boat the inclined trough A' and rolls a a' thereon are transferred to the oppo-

site side of the boat and the cams adjusted, as hereinbefore described, and the direction of the rotation of the drum or reel reversed, when the nets can be raised from that side of the boat with equal facility.

I have thus fully described the construction and operation of mechanism embodying my invention; but I am aware that the construction thereof herein shown and described may be considerably modified in many respects without departing from the spirit of my invention. Therefore

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus for raising fish-nets, the combination, with a reel or drum, of a series of clamping-blocks carried by the said reel and arranged side by side, springs interposed between the said blocks and normally holding them all at prearranged distances apart, and means for periodically diminishing the distances between all the said blocks against the pressure of the said springs, substantially as set forth.

2. In an apparatus for raising fish-nets, the combination, with a reel or drum provided with longitudinally-arranged bars or rods at its periphery, of slidable clamping-blocks carried by the said bars, springs interposed between the said blocks and normally holding them all at prearranged distances apart, cams arranged at each end of the said reel, and intermediate operating mechanisms arranged between the said cams and the end blocks and operating periodically to diminish the distances between all the said blocks against the pressure of the said springs, substantially as set forth.

3. In an apparatus for raising fish-nets, the combination of a reel or drum, mechanism for revolving the said reel in either direction, series of clamping-blocks mounted on the periphery of said reel or drum and adapted to be moved longitudinally toward and from each other, stationary cams concentric with said drum or reel and adapted to be rotatively adjusted, and mechanism connecting said cams with said clamping-blocks, substantially as and for the purpose set forth.

4. In an apparatus for raising fish-nets, the combination of a reel or drum, adapted to run in either direction, series of clamping-blocks mounted on the periphery of the same, and adapted to be moved longitudinally thereon toward and from each other, stationary cams concentric with said reel or drum, adapted to be rotatively adjusted, and levers on said reel or drum engaging each series of clamping-blocks and said cams, substantially as and for the purpose set forth.

5. In an apparatus for raising fish-nets, the combination of a series of clamping-blocks adapted to be moved toward and from each other, cam mechanism for moving said blocks together, and spring mechanism between said blocks for moving them apart when released from the action of the cam mechanism thereon, substantially as and for the purpose set forth.

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

EDWARD CROSSLEY.

Witnesses:

FRED EINFELDT,
HARRY H. BOYD.