No. 672,571. Patented Apr. 23, 1901.

J. SAVOY.

SEINE PURSING APPARATUS.

(Application filed Dec. 24, 1900.)

(No Model.) 2 Sheets—Sheet 1.

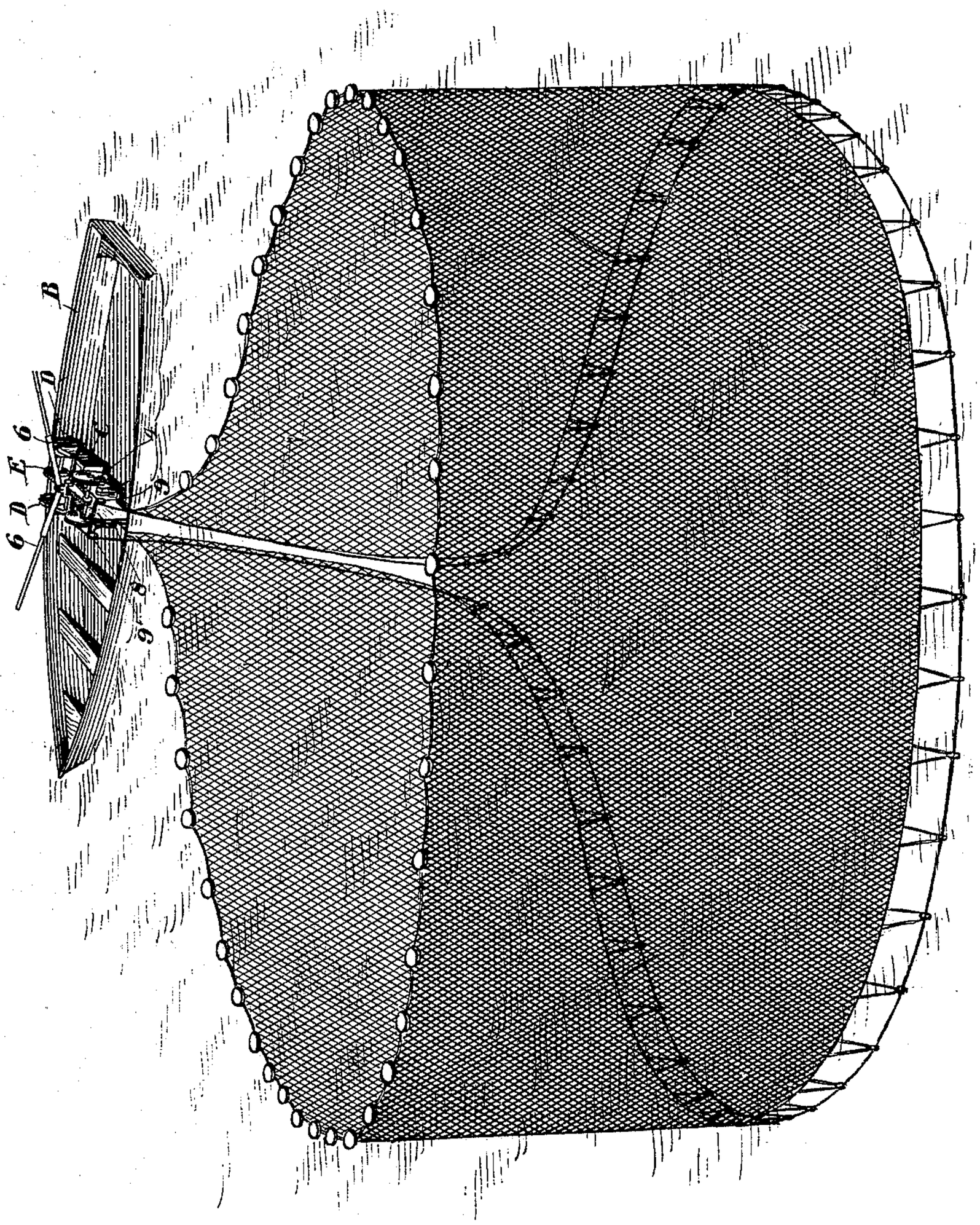


Fig. 1.

Witnesses:
Nathan C. Lombard 2nd.
F. Alfred Patterson

Inventor:
John Savoy,
by Lombard & Whitney.
Attys.

No. 672,571. Patented Apr. 23, 1901.

J. SAVOY.

SEINE PURSING APPARATUS.

(Application filed Dec. 24, 1900.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 2.

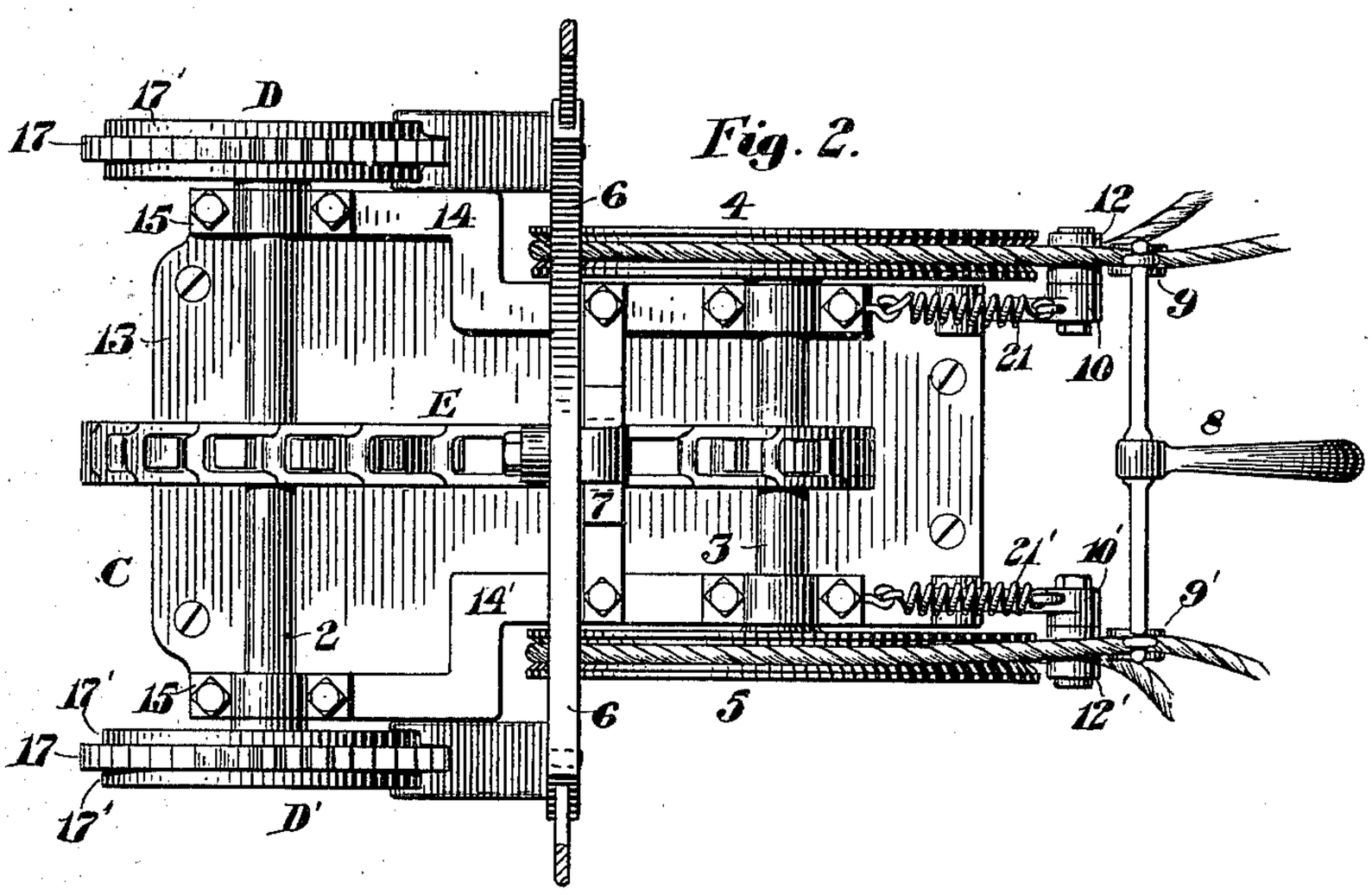
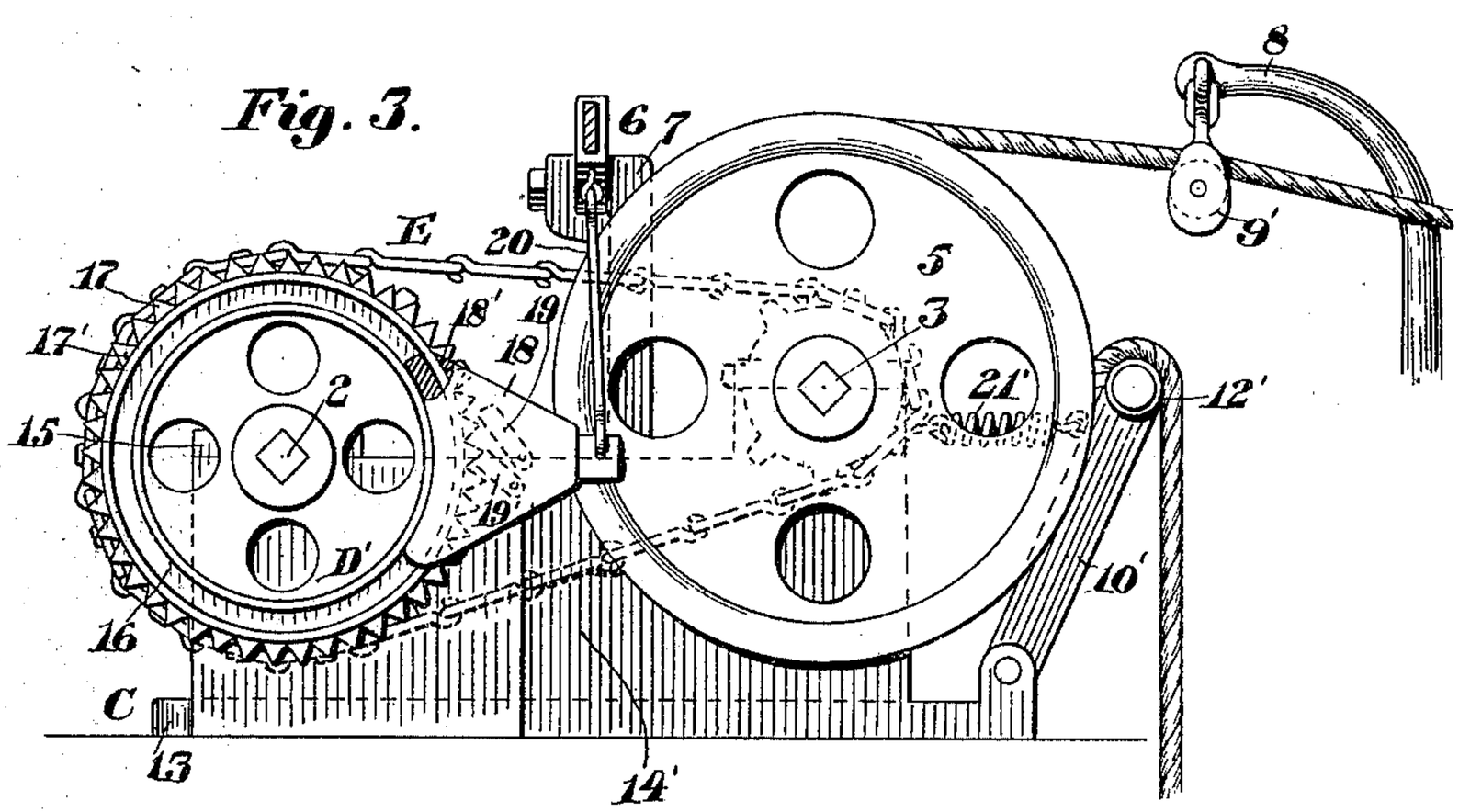


Fig. 3.



Witnesses:
Nathan C. Lombard 2nd
F. Alfred Patterson

Inventor:
John Savoy,
by Lombard & Whitney
Attys.

UNITED STATES PATENT OFFICE.

JOHN SAVOY, OF BOSTON, MASSACHUSETTS.

SEINE-PURSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 672,571, dated April 23, 1901.

Application filed December 24, 1900. Serial No. 40,833. (No model.)

To all whom it may concern:

Be it known that I, JOHN SAVOY, a citizen of the United States of America, and a resident of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Seine-Pursing Apparatuses, of which the following is a specification.

This invention relates to a seine-pursing apparatus.

One object of the invention is to produce an improved, simplified, durable, and efficient apparatus for drawing in the purse-line or bridle of a purse-seine and to so construct and organize the parts thereof that the purse-gear of the apparatus may be easily and readily operated by and the work divided between two operators without interfering with the in-drawing, coiling, and storing of the purse-line and without subjecting the operators to constant strain, as with apparatuses of this class of known construction.

A further object of the invention is to provide a seine-pursing apparatus including two sheaves mounted upon a common shaft and walking-beam-actuated means in operative connection with said shaft and embodying two alternately effective pawl-and-ratchet devices operatively connecting the beam and sheave-shaft and adapted for imparting a substantially continuous purse-line-indrawing movement to the sheaves through the oscillatory movements of the beam.

With these objects in view the invention consists in certain novel elementary features and in the special construction and organization of the several parts of the seine-pursing apparatus, substantially as hereinafter described, and more particularly pointed out in the claims.

In the drawings accompanying and forming part of this specification, Figure 1 is a perspective view, on a small scale, of a seine-pursing apparatus embodying this invention, showing the same in position on its floating support or dory and also showing a purse-seine with the bridle or purse-line thereof in position to be hauled in by the pursing apparatus. Fig. 2 is a plan view of the seine-pursing apparatus on a relatively large scale minus the support and with a portion of the walking-beam handle-bars broken away, and Fig. 3 is a side elevation of the parts shown in Fig. 2.

Similar characters represent like parts in all the figures of the drawings.

In the preferred construction and organization thereof illustrated in the accompanying drawings the seine-pursing apparatus as a whole comprises a suitable support B, shown as a boat, a pursing-gear frame, (designated in a general way by C,) two horizontally-disposed driving and driven shafts 2 and 3, journaled for rotation in suitable bearings on the frame, two drums or sheaves 4 and 5, fixed to opposite ends, respectively, of the shaft 3, a walking-beam 6, pivotally supported substantially midway its ends intermediate the shafts 2 and 3 on an upright 7 of the frame C for movements in a vertical plane parallel to the vertical planes of said shafts 2 and 3, two alternately effective pawl-and-ratchet devices (designated in a general way by D and D′, respectively,) operatively connecting the opposite ends of the walking-beam with the opposite ends of the shaft 2, an actuating-connector E between the driving and driven shafts, a davit 8, two purse-blocks 9 and 9′, movably supported on said davit in alinement with the peripheries of the sheaves 4 and 5, respectively, and two reactionary bight-forming levers 10 and 10′, pivotally mounted on the frame C and having at their upper ends rollers or projections 12 and 12′, over which the free end of the purse-lines may extend to form a bight and hold the lines against retractive movements.

The purse-gear frame C of the apparatus, which may be of any suitable general construction for supporting the several coöperative elements, comprises in the form thereof shown a suitable base-plate 13, adapted to be supported upon the seats or other portion of a carrier, such as a dory or fish-boat, and having relatively-separated vertically-disposed side walls 14 and 14′.

The upright 7, upon which the walking-beam 6 is pivoted, is shown in the nature of a bracket secured to the upper faces of the side walls 14 and 14′ between the driving and driven shafts 2 and 3, respectively, the walking-beam-supporting portion of said upright being shown located substantially midway between the adjacent faces of the side walls.

The driving-shaft 2 is shown having its opposite ends in bearings 15 and 15′ on the side walls 14 and 14′ and extending somewhat beyond the outer faces of said side walls.

The actuating means between the walking-beam and driving-shaft is shown in the accompanying drawings as two pawl-and-ratchet devices D and D′, respectively. These pawl-and-ratchet devices are shown of duplicate construction. Therefore a detail description of one will suffice for both, the same characters indicating the same parts of both pawl-and-ratchet devices. Each pawl-and-ratchet device in the preferred construction and organization thereof shown comprises a ratchet-wheel 16, fixed to the shaft 2 and having plane peripheral bearing-faces 17′ each side the ratchet-teeth 17, a gravitative dog or pawl-carrier 18, having a bifurcated end straddling the ratchet-wheel and having faces 18′, adapted for engaging the plane peripheral portions 17′ of said ratchet-wheel, two pawls 19 and 19′, (shown in dotted lines in Fig. 3,) pivotally mounted on the pawl-carrier 18 in position for engaging the teeth of the ratchet-wheel, and a suspending device 20, shown as a link pivotally connecting the outer end of the pawl-carrier and the walking-beam, the construction and organization of these parts being such that on a descending movement of that end of the walking-beam to which the particular pawl-carrier is connected, the pawls of this carrier being advanced one or more tooth-spaces into position to impart a rotative movement to the ratchet-wheel, and on an ascending movement of the outer end of the pawl-carrier, due to the ascent of this end of the beam, the pawls will advance the ratchet-wheel and through the medium of the actuating-connector E impart an indrawing movement to the sheaves 4 and 5.

As will be understood by reference to the drawings, the inner curved face of the pawl-carrier partly surrounds the periphery of the ratchet-wheel, thus forming a fulcrum upon which the outer end of the pawl-carrier turns. It will be obvious, however, that the invention is not limited to this particular construction and organization of pawl-carrier, as this may be variously modified without departure from this invention.

The actuating-connector between the driving-shaft 2 and driven shaft 3 in the form shown is of the chain-and-sprocket variety—that is, a chain passes over two sprocket-wheels, one of which is connected to the driving-shaft and the other to the driven shaft; but it will be obvious that any suitable kind of actuating-connector between the two shafts may be employed, and the invention is not limited to the particular actuating-connector shown.

The pawl-carrier shown in the accompanying drawings constitutes a most convenient means for carrying the pawls and insuring a ratchet-wheel-advancing movement thereof, as said carrier is supported in place wholly by the ratchet-wheel upon which it operates, said carrier being moved about the axis of said ratchet-wheel by the descending movement of the walking-beam in order to permit the pawls contained therein to take a fresh hold upon said wheel.

For the purpose of forming a bight in the outer end of the purse-line where it leaves the sheaves 4 and 5 and to prevent accidental retractive movement of said line in case the ends of said lines are not held I have provided two reactionary bight-forming devices, which include two vertically-disposed levers 10 and 10′, pivotally supported at their lower ends on the frame C in advance of the vertical plane of the driven shaft 3 and having at the upper ends thereof rollers 12 and 12′, the central portions of which are disposed in proximity to and in alinement with the peripheral grooves in the sheaves 4 and 5, said bight-forming devices being rendered reactionary or held with the rollers in close proximity to the peripheries of the sheaves by means of automatically effective retracting devices 21 and 21′, shown as spiral springs, which are fixed at their outer ends to the levers 10 and 10′ and at their inner ends to the side walls of the frame C, as shown most clearly in Fig. 1.

As a means for holding the upper runs of the ends of the purse-line in proper relation to the sheaves 4 and 5, so that the ends of the line will not become accidentally displaced or ride out of the grooves of said sheaves, I have provided a davit 8, which will be supported in any suitable manner, (not shown,) having at the outer upper end thereof a block-supporting bar disposed in parallelism with the driving-shaft 3, but located considerably in advance of the sheaves 4 and 5 and having at the outer ends thereof purse blocks or pulleys 9 and 9′, disposed with the upper portions of their peripheries in substantially horizontal alinement with the upper portions of the grooves of the sheaves 4 and 5.

The springs 21 and 21′ will have sufficient resistance to form purse-line-holding bights, but not a sufficient resistance to prevent the levers 10 and 10′ being drawn downward by a pull on that portion of the line in advance of the said levers.

By providing walking-beam-actuated means for imparting indrawing movements to the sheaves it will be readily apparent that the work will be equally divided between the two operators working opposite ends of the walking-beam, for the reason that the pawl-and-ratchet devices at opposite ends of said lever are alternately effective, although there will be no appreciable pause in the rotation of the sheaves. This walking-beam, which is pivoted substantially midway between and has its axis of movement intersecting the plane of the axis of the driving and driven shafts, oscillates in a plane transverse to the planes of rotation of the two sheaves 4 and 5, and consequently the operators can stand

where they will and in no wise interfere with the coiling and storing of the ends of the purse-line.

I claim—

1. In a seine-pursing apparatus for use in a seine-boat and to be operated in connection with crane-supported tackle-blocks for guiding and controlling the purse-lines of a seine, the combination with a bed-plate having vertical side frames, of a driving and a driven shaft supported in parallelism in bearings on said side frames, a sprocket-wheel secured to each of said shafts between said side frames, a chain connection between said sprocket-wheels, a tie-girth connecting said side frames above said chain connection, a walking-beam supported on said tie-girth for oscillatory movements in a plane parallel to the axis of said shafts, and means connecting said walking-beam with said driving-shaft and effective for driving the same.

2. In a seine-pursing apparatus for use in a seine-boat, the combination with a bed-plate provided with two side frames, of a driven shaft mounted in suitable bearings in said side frames, two sheaves fixed to opposite ends respectively of said shaft, a driving-shaft also mounted in suitable bearings in said side frames, a chain-and-sprocket connection between said shafts, a tie-girth connecting said side frames above said chain connection, a walking-beam supported on said tie-girth for oscillatory movements in a plane parallel to the axis of said shafts, means connecting said walking-beam with said driving-shaft and effective for driving the same, and crane-supported tackle-blocks for guiding and controlling the purse-lines of a seine.

3. In a seine-pursing apparatus for use in a seine-boat, the combination with a bed-plate having vertical side frames, of a driving and a driven shaft supported in parallelism on said frames, a chain-and-sprocket connection between said shafts, a tie-girth connecting said frames above said chain connection, a walking-beam supported on said tie-girth for oscillatory movements in a plane parallel to the axis of said shafts, two alternately effective pawl-and-ratchet devices in operative connection with the driving-shaft and walking-beam; and crane-supported tackle-blocks for guiding and controlling the purse-lines of a seine.

4. In a seine-pursing apparatus the combination with a bed-plate having vertical side frames, of a driving and a driven shaft supported in parallelism on said side frames, a chain-and-sprocket connection between said shafts, two sheaves fixed to opposite ends of the driven shaft, two ratchet-wheels secured to the opposite ends of the driving-shaft, a tie-girth connecting said frames above said chain connection, a walking-beam supported on said tie-girth for oscillatory movements in a plane parallel to the axis of said shafts, pawl-carriers connected to said walking-beam at opposite sides respectively of the axis of oscillation thereof, pawls mounted on the pawl-carriers in position to engage the teeth of the ratchet-wheels, and crane-supported tackle-blocks for guiding and controlling the purse-lines of a seine.

5. In a seine-pursing apparatus to be used in a seine-boat, the combination with a bed-plate having vertical side walls, of a driving and a driven shaft supported in parallelism on said side frames, a chain-and-sprocket connection between said shafts, two sheaves fixed to opposite ends of the driven shaft, two ratchet-wheels secured to opposite ends of the driving-shaft, a tie-girth connecting said frames above said chain connection, a walking-beam supported on said tie-girth for oscillatory movements in a plane parallel to the axis of said shafts, pawl-carriers connected to said walking-beam at opposite sides respectively of the axis of oscillation thereof, pawls mounted on the pawl-carriers in position to engage the teeth of the ratchet-wheels, a davit mounted on the side of the boat, and seine-blocks supported by said davit and in substantial horizontal alinement with the upper peripheral portion of said sheaves.

Signed by me at Boston, Massachusetts, this 22d day of December, A. D. 1900.

JOHN SAVOY.

Witnesses:

WALTER E. LOMBARD,

NATHAN C. LOMBARD, 2d.