

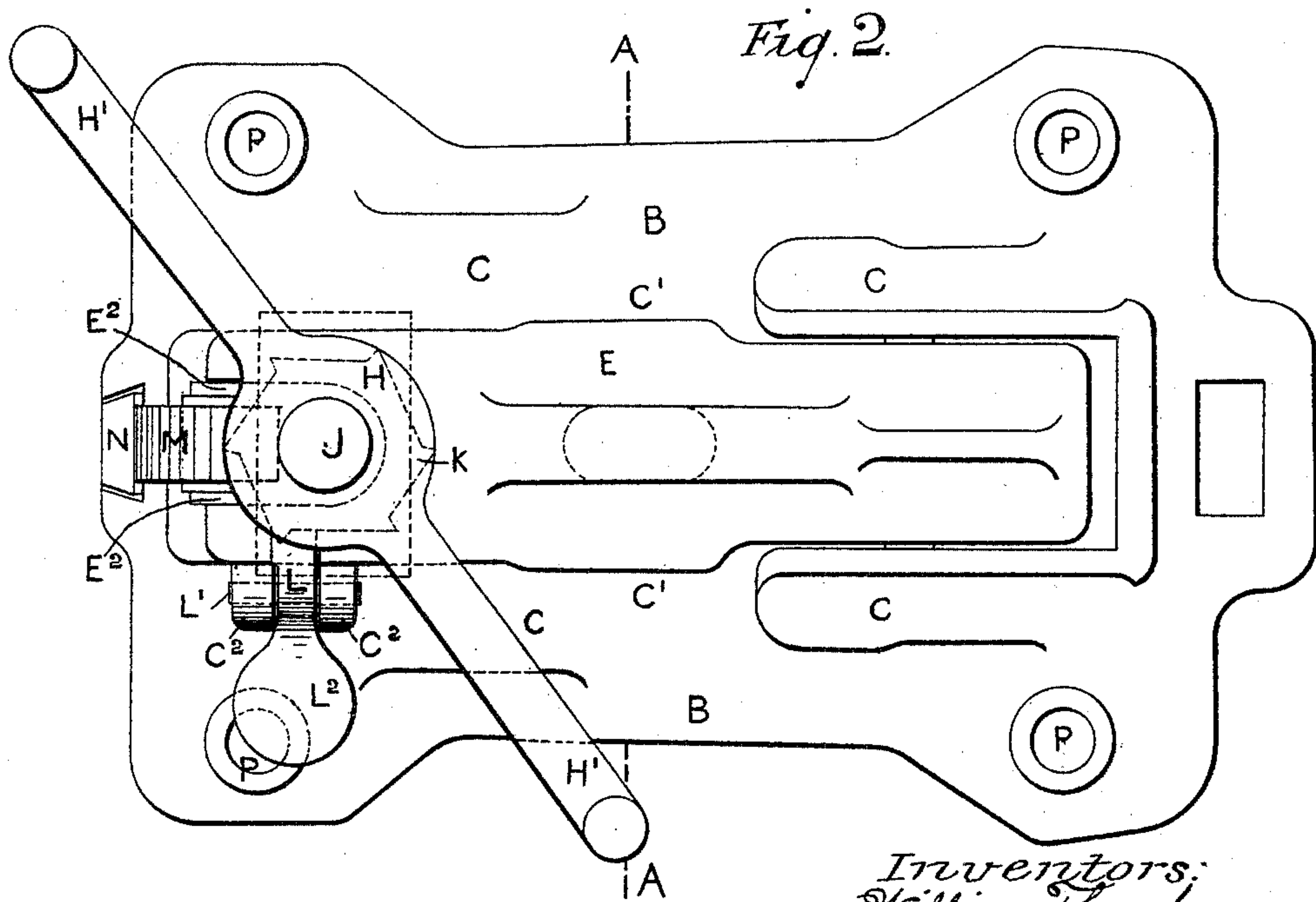
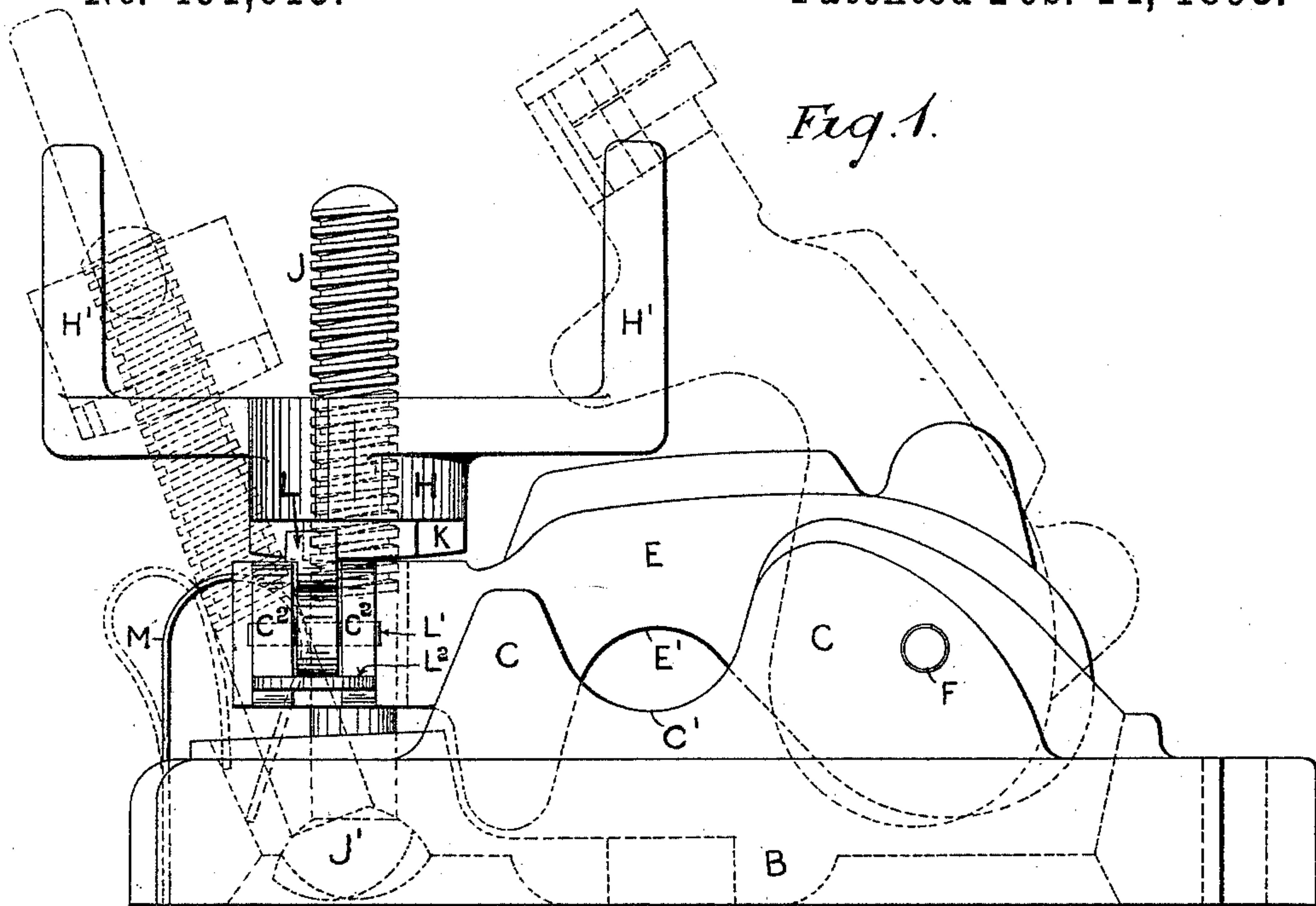
(No Model.)

4 Sheets—Sheet 1.

W. THOMPSON & D. DISHART.
MOORING APPARATUS.

No. 491,613.

Patented Feb. 14, 1893.



Witnesses
E. B. Bolton
E. H. Sturtevant

Inventors:
William Thompson
David Dishart
By *Richardson*
their Attorneys.

(No Model.)

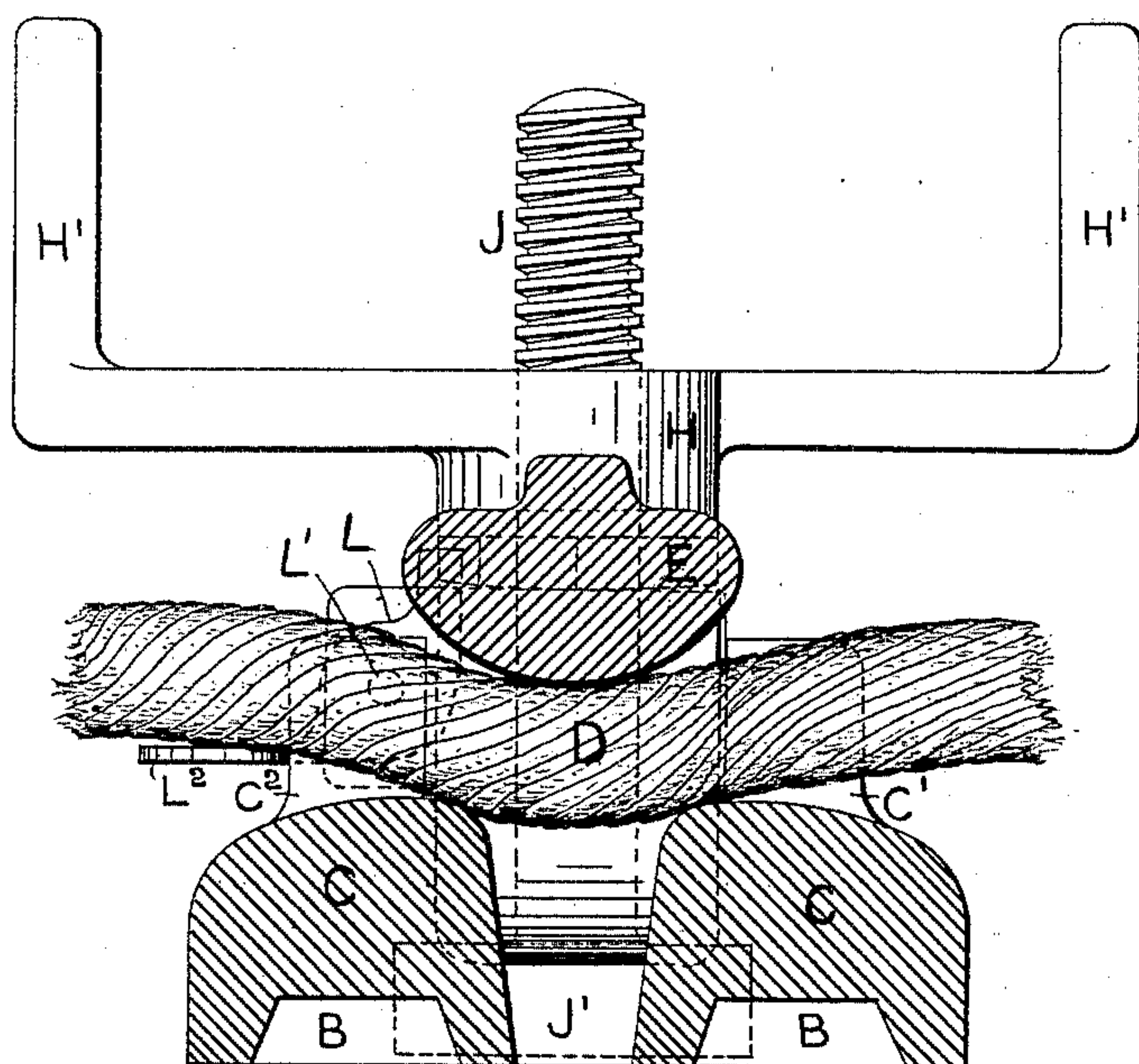
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Fig. 3.



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Fig. 5.

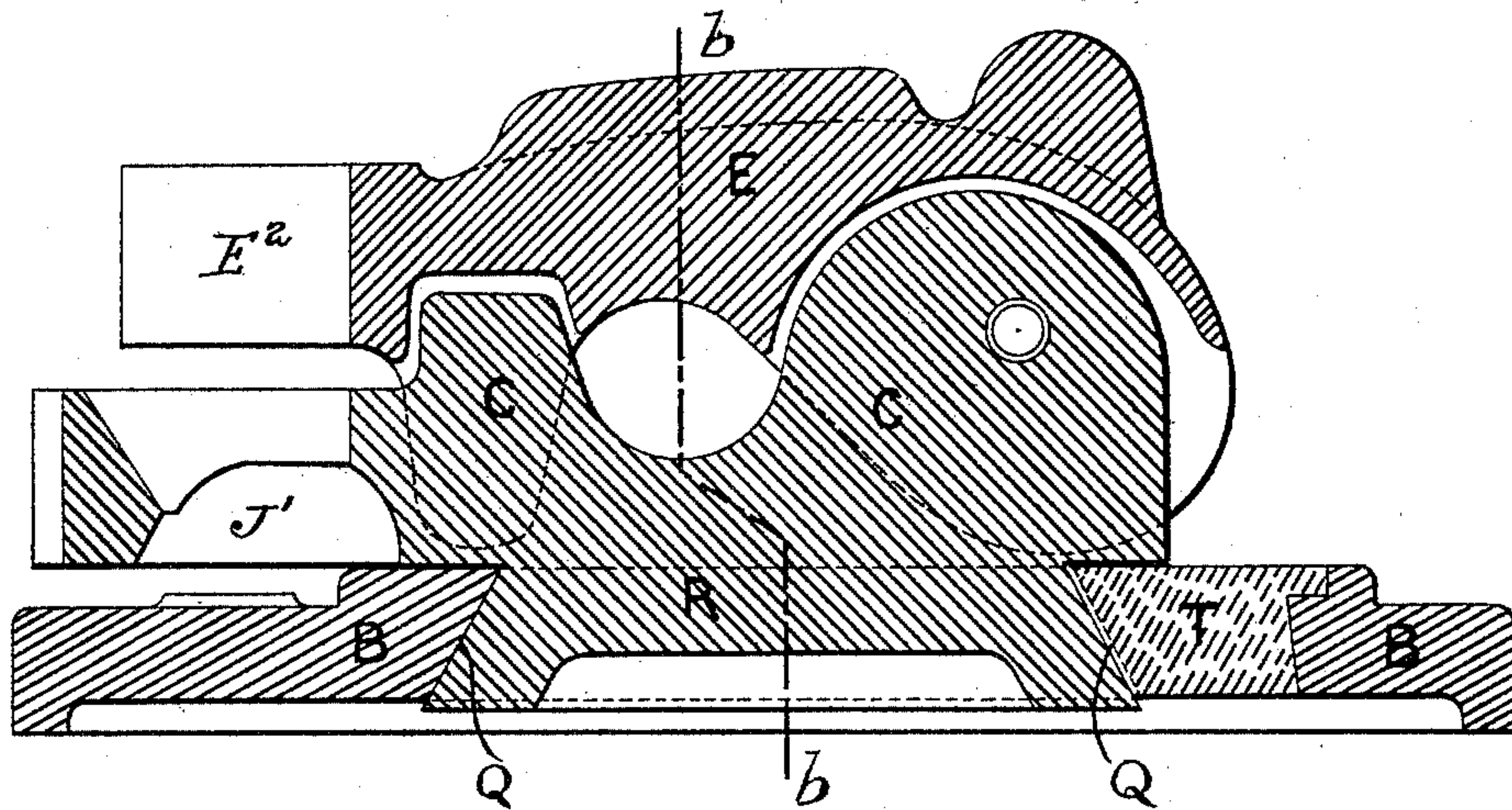
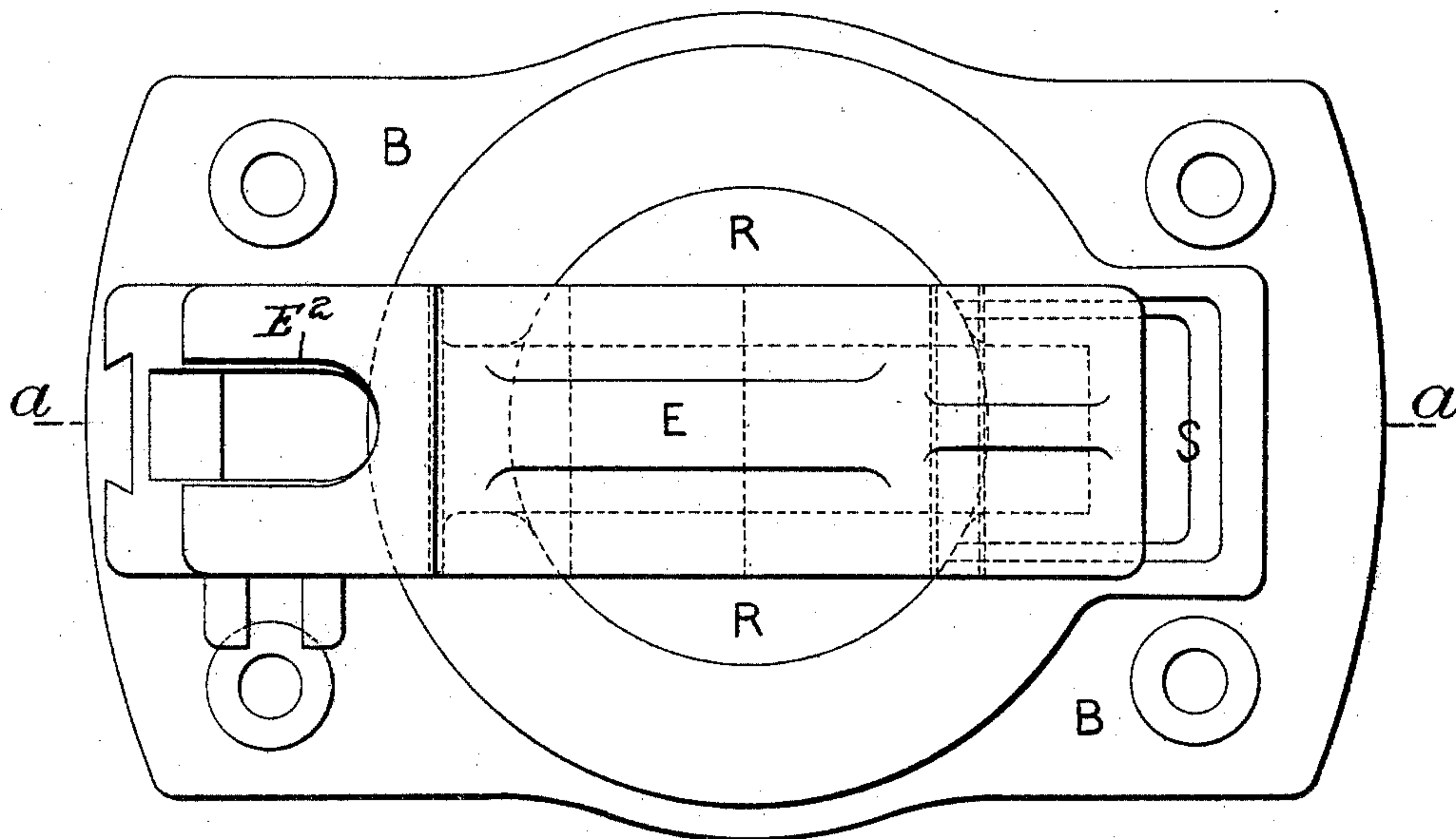


Fig. 4.



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(No Model.)

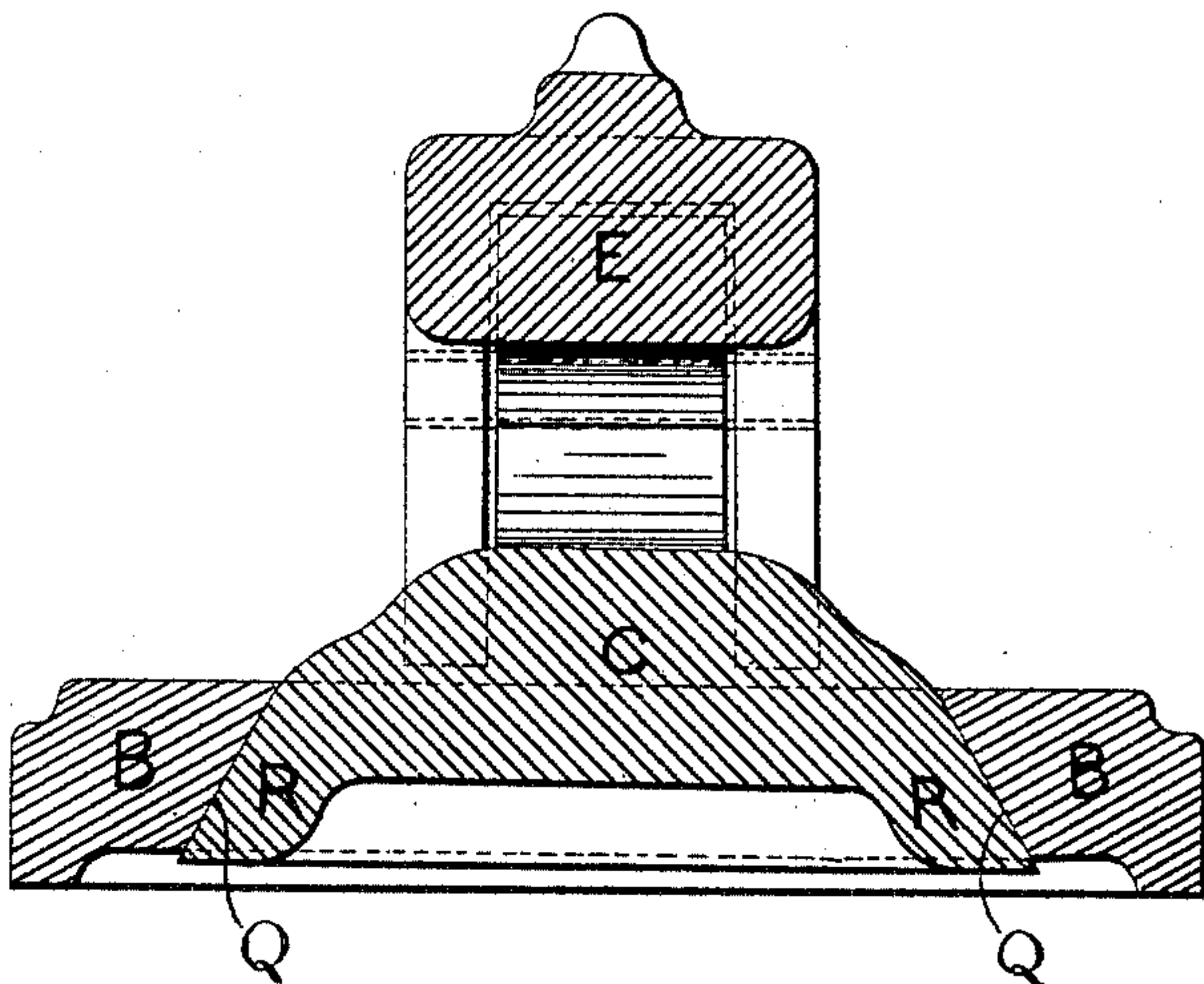
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Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM THOMPSON AND DAVID DISHART, OF SUNDERLAND, ENGLAND.

MOORING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 491,613, dated February 14, 1893.

Application filed May 21, 1892. Serial No. 433,844. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM THOMPSON, residing at 58 Frederick Street, and DAVID DISHART, residing at 10 Lilburn Street, Sunderland, in the county of Durham, England, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in Mooring Apparatus, of which the following is a specification.

Our invention relates to the construction of an improved apparatus or holdfast, for securing a rope, or chain for mooring and other purposes.

In the accompanying four sheets of drawings, Figure 1 is a side elevation. Fig. 2 is a plan, and Fig. 3 a cross-section through A A in Fig. 2 of an apparatus constructed in accordance with our invention. Fig. 4 is a plan of a modification. Fig. 5 is a longitudinal section through *a a* in Fig. 4, and Fig. 6 is a cross section through *b b* in Fig. 5 showing a modified form of the apparatus.

Similar letters of reference denote similar parts throughout the drawings.

The apparatus, as shown in Figs. 1 to 3, consists of a casting or forging B, forming a base, and provided with two fixed jaws C C. An indentation C' is formed in each of these jaws, in which the rope D to be secured, is laid. A movable jaw E, formed with a similar indentation E', fitting over the rope, is pivoted between the jaws C C at F. It is forced down by means of a nut H, on a bolt J, pivoted to the casting B at J', and entering a slot E² in the end of the jaw. By tightening the nut H the rope D can be held with great force, while it can be instantly released by merely slackening the nut, and when the nut is slackened, the bolt J can be swung forward out of the slot E², and the jaw E thrown back, as shown by dotted lines in Fig. 1, without removing the nut from the bolt.

Any suitable form of lever can be employed to operate the nut, and such lever may be loose, or may be fixed to, or made in one piece with the nut. A convenient arrangement consists of a nut with two handles H' H', forged in one piece therewith, as shown.

Ratchet teeth K are formed upon the lower part of the peripheral surface of the nut, or a separate ratchet wheel may be affixed to the nut, a pawl lever L fulcrumed at L', between

the lugs C² C², engages with the said teeth and locks the nut when screwed down, and prevents its release, until the pawl is disengaged by pressing the foot upon the flattened extension L² of its lower end. This pawl may be arranged to engage with the teeth K by the action of gravity, or a suitable spring may be provided for this purpose.

A curved spring M is fixed by its longer end within a groove in the casting B by a key N. It presses against the bolt J, and serves to hold it normally in the position shown by the full lines in Fig. 1, but will yield sufficiently to allow the bolt to be moved forward to permit the jaw E to be thrown back, as shown by the dotted lines.

Holes, as shown at P, are provided in the base B, to receive bolts for attaching the apparatus.

In the modified arrangement shown in Figs. 4, 5 and 6, the jaws C C are independent of the base B. A large circular opening with coned sides Q, is formed in the base, and a circular projection R, of similar form, is provided on the underside of the said jaws to fit within it. These jaws may be of similar pattern to those shown in the previous figures, and they have hinged to them a similar movable jaw E, forced down on the rope by a bolt and nut in the same manner as before described. This bolt and nut are not shown in Figs. 4, 5 and 6. The effect of this arrangement is that the jaws are able to turn in any direction and automatically adjust themselves to the direct line of pull on the rope, and thus avoid any injurious cross strains, on either the rope or the apparatus.

A gap S is provided in the base to enable the jaws C C to be inserted in position from the underside, and when they are in place the said gap is fitted with a piece T, of the correct shape to fill up the opening.

Our apparatus can be fixed on board a vessel, on a dock or wharf, or in any required place, or position.

The multiplication of power obtained by the handles H' H', the screw J, and the leverage of the jaw E, enables great force with small expenditure of strength to be exerted upon the rope, which, as will be seen from the cross-section Fig. 3 is indented by the jaw E, between the jaws C C and can thus be held,

when so required, without the possibility of slipping.

Having now described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a mooring apparatus, the combination of the base portion B, the jaws C C, carried thereby and having indentations C' C', a movable jaw E having an indentation E' and slot E², said jaw being pivotally connected with the base portion, a bolt J pivoted below the jaw E and adapted to enter the slot E² and the nut H on the bolt arranged to hold the movable jaw, substantially as described.

2. In combination the base having the jaws C C, the movable jaw pivotally connected to the base and having a slot E, a bolt J pivoted below the jaw E and adapted to enter the said slot the nut H on the bolt, said nut having the ratchet teeth and a pawl L supported adjacent to the ratchet teeth to engage the same, substantially as described.

3. In combination the base having the jaws C C, the movable jaw pivoted to the base portion and having a slot E², a bolt J pivoted below the jaw E and adapted to the said slot, a nut H on the bolt having ratchet teeth K, a pawl L supported adjacent to the teeth to engage the same and the spring M supported on the base and bearing on the pivoted bolt, substantially as described.

4. In combination the base B, having a circular opening, the jaws C C carried thereby

and having a circular projection fitting said opening, the jaw E pivotally connected with the base through one of the jaws C and the means for holding the jaws together, substantially as described.

5. In combination the base having a circular opening with a gap S at one side thereof, the jaws C, C, carried by the base and having a circular projection fitting in the opening in the base, the holding piece T fitting in the gap of the base, the movable jaws E pivotally connected with the base through one of the jaws C and the means for holding the jaws together, substantially as described.

6. In combination the base B having an opening, the jaws C, C, carried thereby and having a projecting fitting in the said opening, the jaw E arranged over the jaws C, C, and movable in relation thereto, the bolt for holding the jaws together pivoted to the jaw piece C, C, and movable therewith, and the nut on the said bolt, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

WILLIAM THOMPSON.

DAVID DISHART.

Witnesses:

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Solicitor, Sunderland.

ALFRED BIRD,
Clerk to Septimus Peacock, Solicitor, Sunderland.