

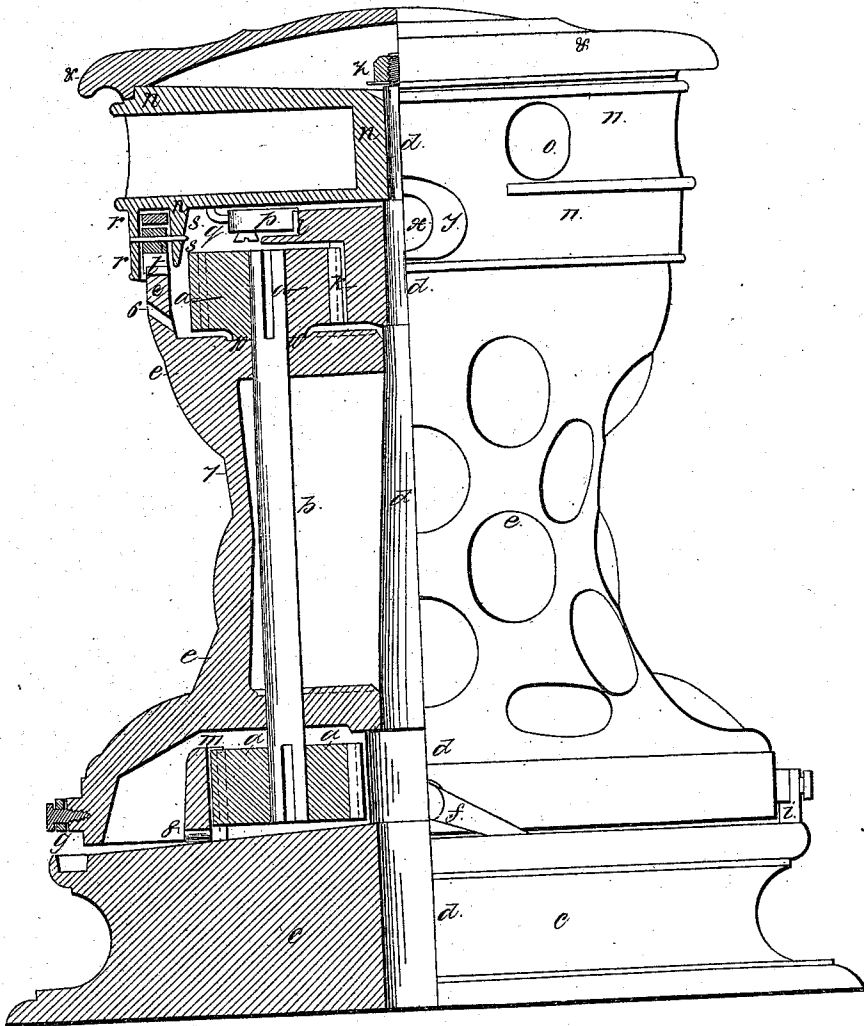
D. N. B. Coffin, Jr.

Capstan.

N^o 100,850.

Patented Mar. 15, 1870.

Fig. 1.



Witnesses:
L. G. Moulton
Martin Church.

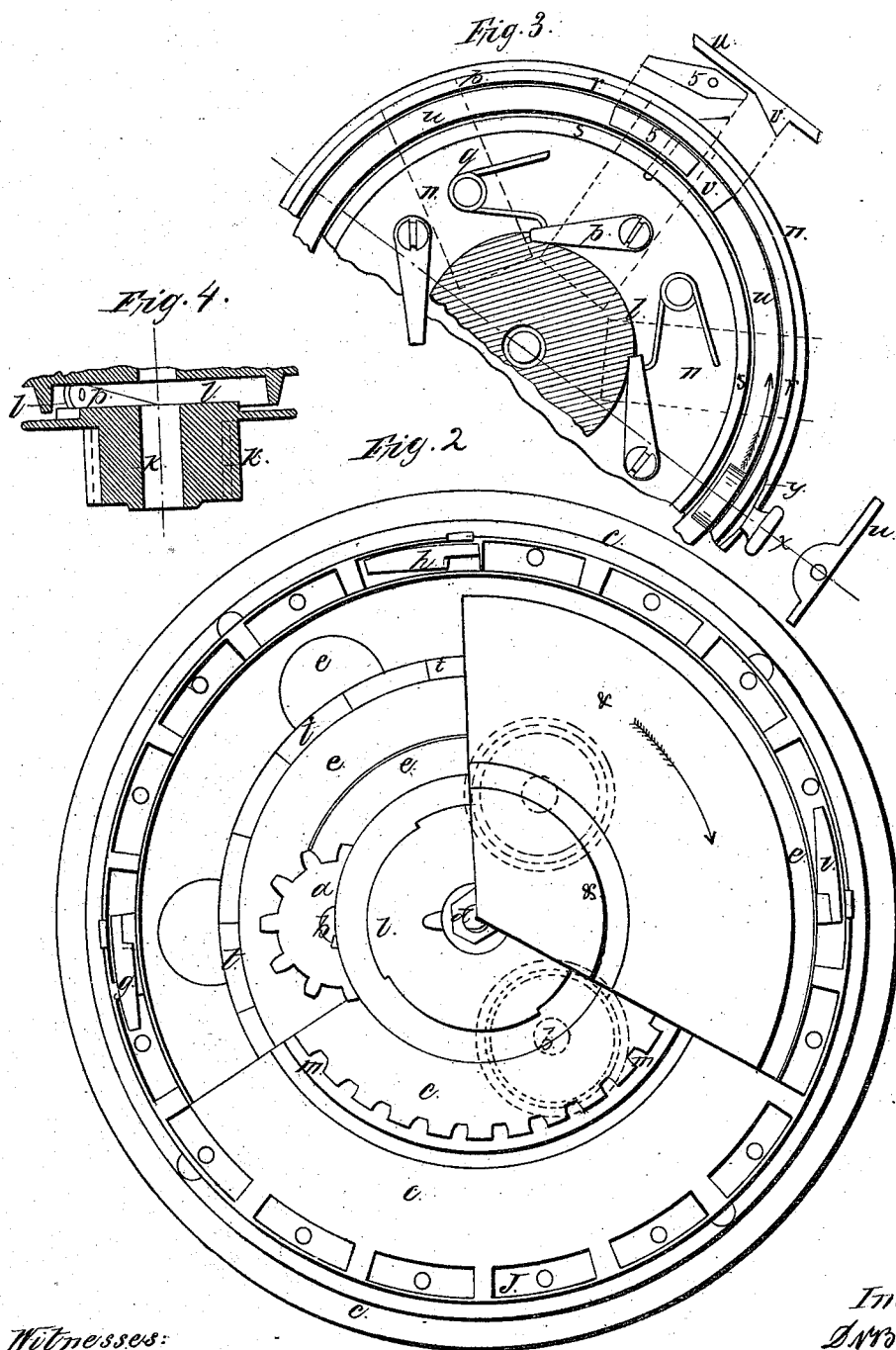
Inventor:
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*Inventor:
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D. N. B. COFFIN, JR., OF NEWTON CENTRE, MASSACHUSETTS.

Letters Patent No. 100,859, dated March 15, 1870.

IMPROVEMENT IN CAPSTANS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, D. N. B. COFFIN, Jr., of Newton Centre, in the county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in Capstans; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

With reference to the drawings—

Figure 1 is a sectional view of a geared capstan, illustrating my improvements.

Figure 2 is a sectional plan.

Figure 3 is a view of the under side of the lever-head, showing pawls, ratchet, rim or plate on the center or first moving gear, &c.

Figure 4 is a sectional view of the first moving gear, or center gear, its ratchet, rim, or plate, and the pawls, jointed by a non-traversing joint to the lever head.

Like letters refer to the same or corresponding parts in all the figures.

The bed or deck-plate *c* has a spindle, *d*. On the spindle turns the barrel *e*, in case of the fast or simple purchase, by means of the lever-head *n*, through its pawls *5* and ratchet *t* on the barrel, and in case of the slow or powerful purchase, through the lever-head *n*, its pawl or pawls *p*, ratchet rim or plate *l*, center gear *h*, and any suitable gearing communicating with and operating the barrel *e*.

My improvements relate to the means employed for connecting and disconnecting automatically the first moving or center gear of a capstan to and from the lever-head, and to the means for lubricating, &c.

A separate and independent pawl or set of pawls, *p*, which are jointed so as not to traverse radially to the capstan, for changes are jointed by a suitable hinge or pin to the lever-head. These pawls *p* act only upon the ratchet rim or plate of the center gear, and in no case directly upon the capstan-barrel or its ratchet-teeth.

A rim with ratchet teeth, in other words a ratchet-plate, *l*, is formed on or fixed to the first moving or center gear *h*.

The pawls *p* are so arranged and jointed to the lever-head as to act on the teeth of the ratchet-plate *l*.

These pawls *p* actuate the first moving gear through plate *l*, whenever the lever-head is turned in the proper direction; but when the head moves in the opposite direction, or when the gears are rotated by the capstans working with the simple purchase, in either case these pawls *p* pass or drag freely over the ratchet rim or plate.

By jointing the pawl or pawls which move the first

or center gear entirely separate and independently of those pawls or other means which may be employed to actuate the barrel directly, I secure very material advantages, first, the ratchet-plate may be proportioned irrespective of the diameter of the top of the barrel, and made smaller if desired, so reducing the travel of its periphery when rotated by the operation of the capstan for the fast or simple purchase; secondly, the pawls or other direct connections between the lever-head and barrel are liable to become broken, when the pawls *p*, being separate, and jointed separately from them, are not thereby disabled, and the slow or powerful purchase remains perfect; thirdly, I secure automatic disconnection of the lever-head from the center gear through the simple rotation of the barrel for a simple or faster purchase.

The parts may be made of cast or wrought iron or other suitable materials.

Thus having described my improvements,

What I claim as my own invention, and desire to secure by Letters Patent, is as follows:

1. The arrangement of a ratchet or toothed rim directly in connection with the central or first actuating gear of a capstan above the main barrel-bearings, and in combination with a non-traversing or local jointed pawl or pawls connected to the lever-head, substantially as described.
2. Constructing the ratchet-plate and central or first actuating gear of a capstan in one piece, substantially as shown.
3. Seating the hub of those rotating parts of a capstan which have a vertical or approximately vertical axis directly within an oil or other lubricator, receptacle, or rim, substantially as shown at 10, fig. 1.
4. In combination with a set of pawls jointed to the lever-head for actuating the barrel of a capstan directly, the employment of another set, also jointed to the head, for actuating the barrel indirectly through purchase-gaining or speed-reducing gears, substantially as and for the purpose set forth.
5. Forming the center or first moving gear of a capstan in one piece with its ratchet-plate, substantially as shown.
6. In combination with the bottom hub of those parts of a capstan which turn upon a vertical or approximately vertical axis; the forming of a relatively stationary oil-receptacle within which such hub has its seat or bearing, substantially as shown at 10, fig. 1.

D. N. B. COFFIN, JR.

Witnesses:

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JOSEPH H. LEWIS.