

J. Edson,

Capstan.

No. 90,568.

Patented Nov. 9. 1869.

Fig. 1

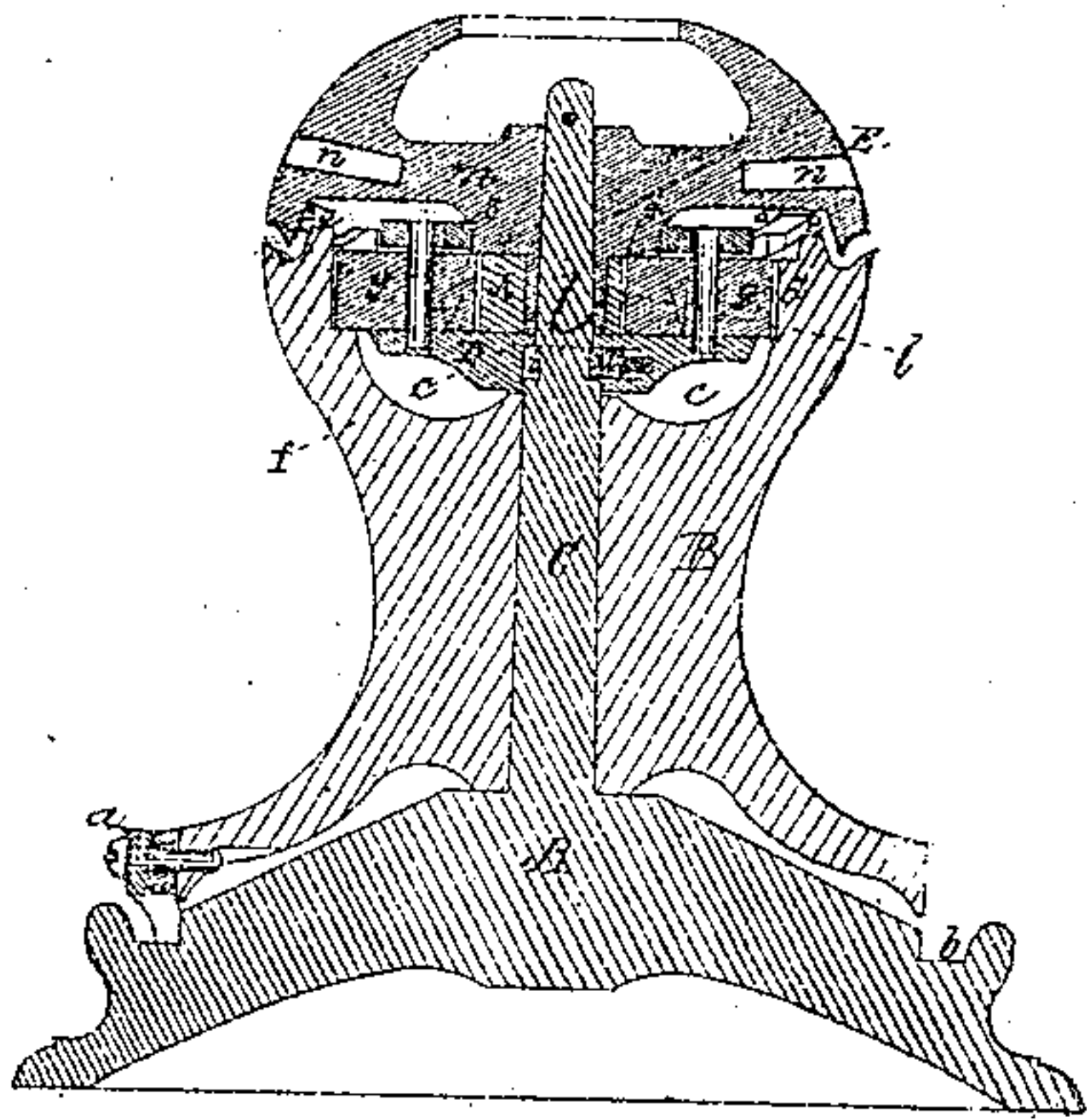


Fig. 2.

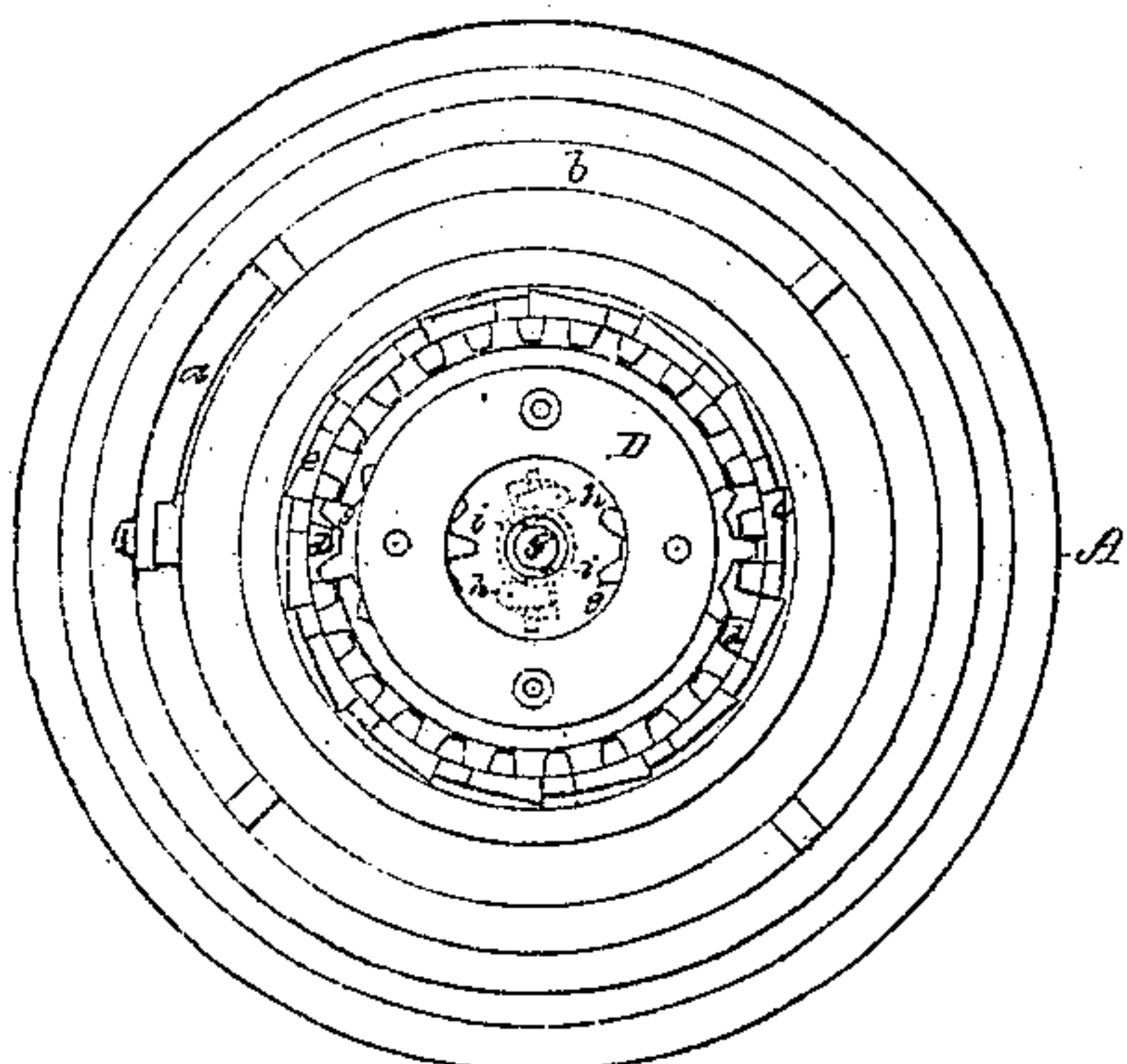


Fig. 3.

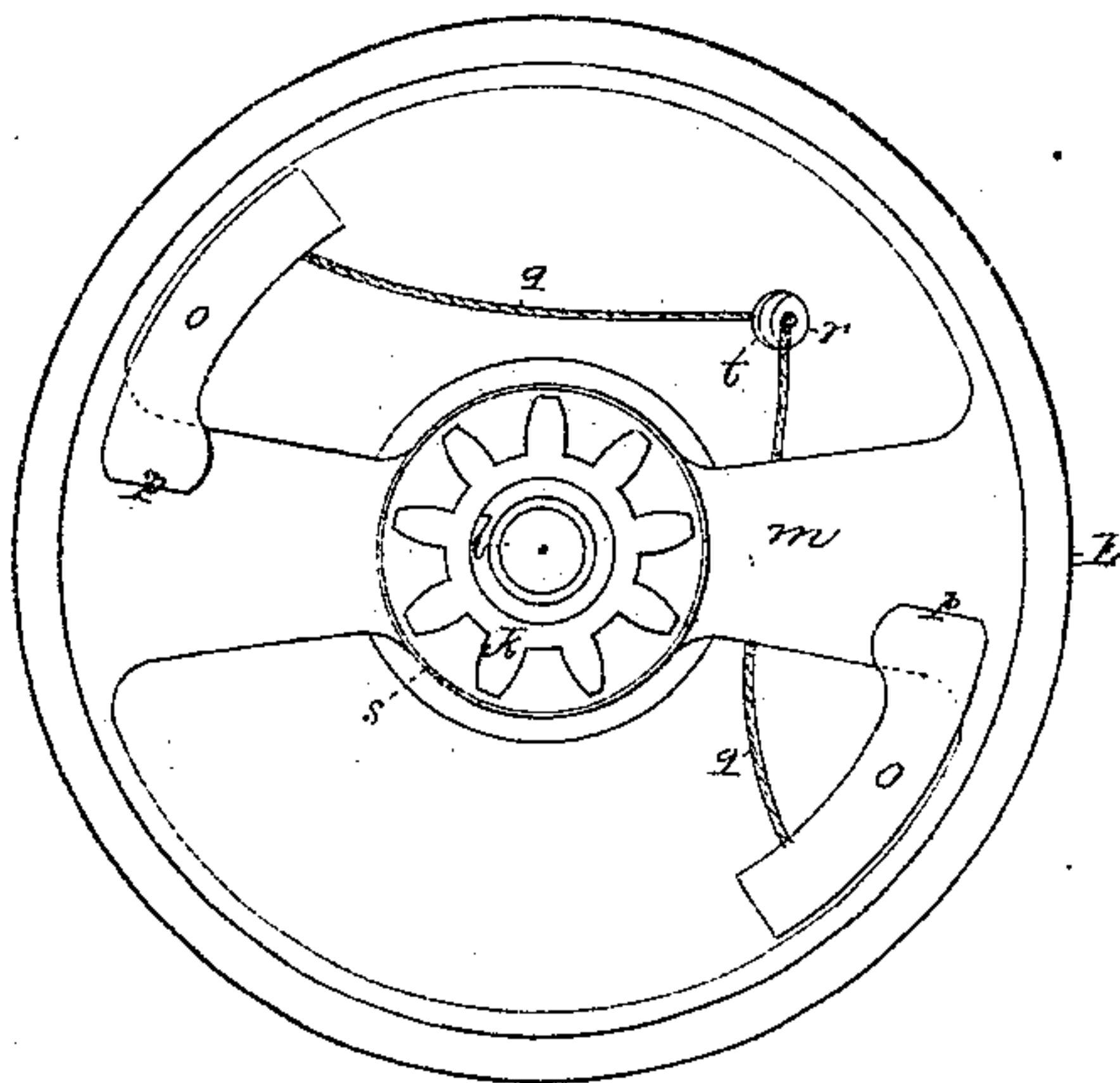


Fig. 5.

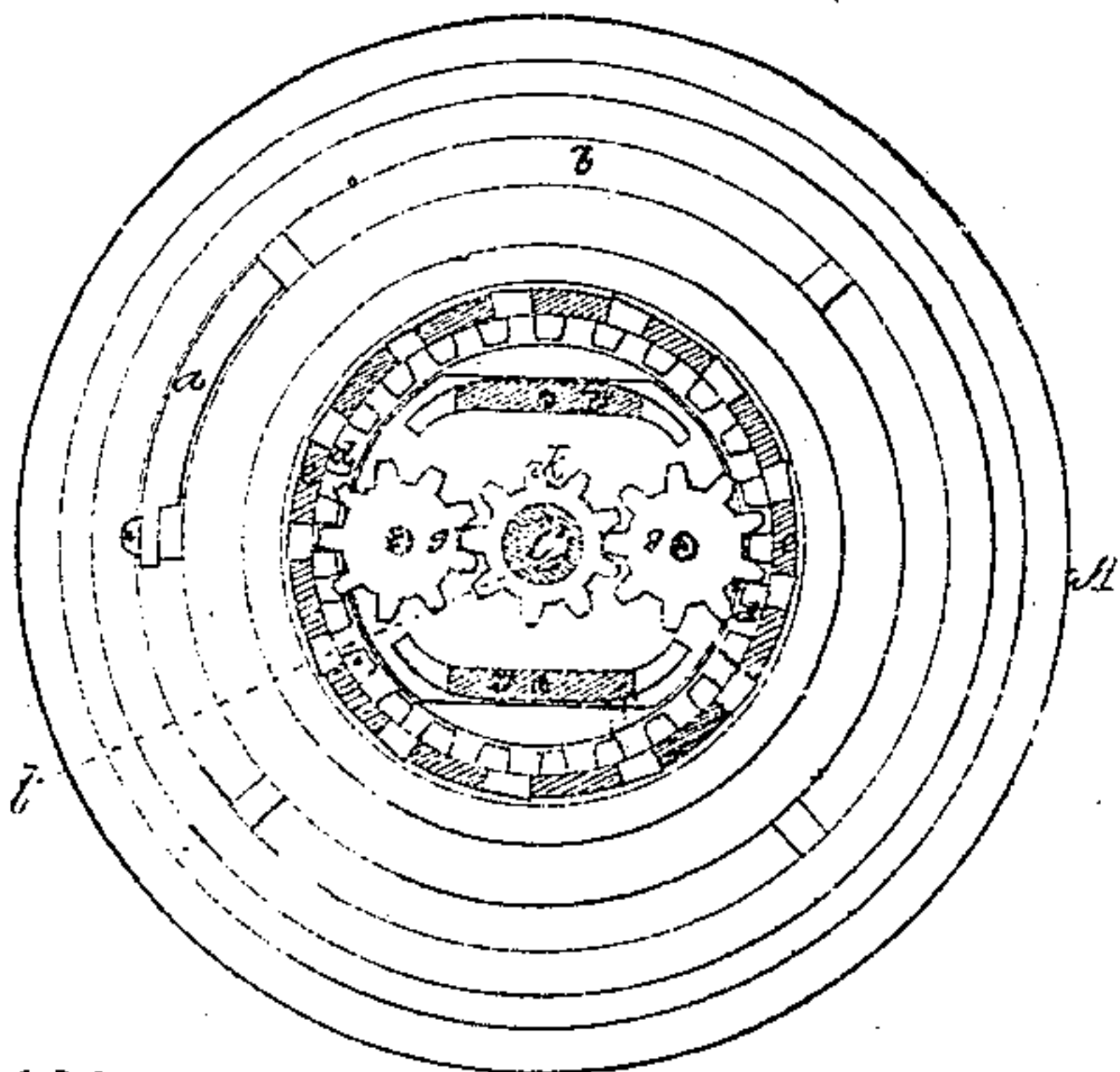
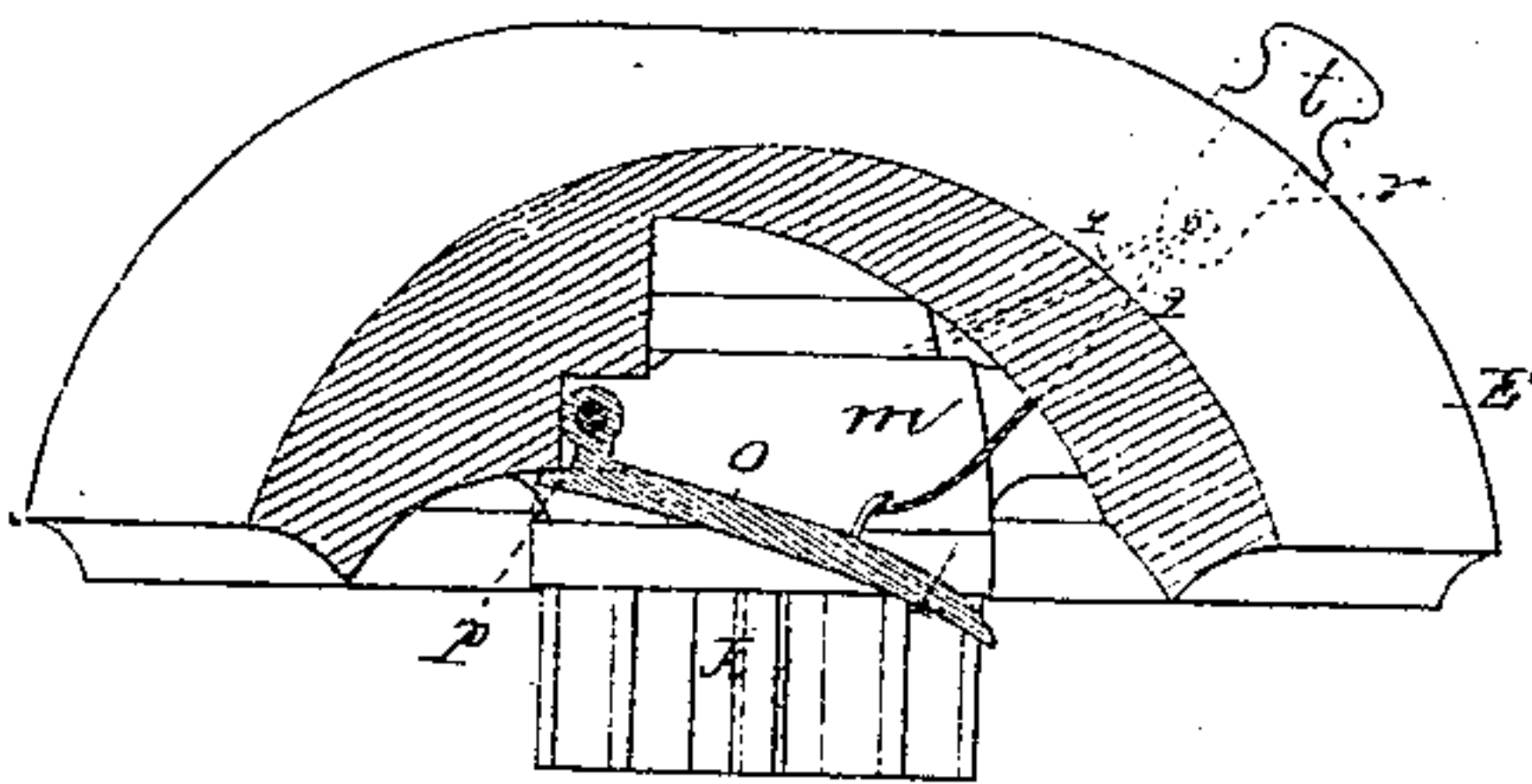


Fig. 4.



Witnesses.

S. N. Piper
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R. H. Eddy

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JACOB EDSON, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 96,568, dated November 9, 1869.

IMPROVEMENT IN CAPSTANS.

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

To all persons to whom these presents may come:

Be it known that I, JACOB EDSON, of Boston, of the county of Suffolk, and State of Massachusetts, have made a new and useful invention, having reference to Capstans for Navigable Vessels; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a transverse section of a capstan, as provided with my invention.

Figure 2 is a top view of it, as it appears after removal of the head from the barrel, the spider, and the shaft.

Figure 3 is an under-side view of the head.

Figure 4 is a vertical section of one of the pawls of the head, such section exhibiting not only the connection of such pawl with the head, but the bearing-lip of the pawl.

Figure 5 is a horizontal section of the capstan, it being taken through the ratchet of the capstan-shaft, or spindle.

In these drawings—

A denotes the base, and B the barrel of the capstan, the latter being supported by, and so as to be capable of being revolved on a spindle, C, extending upward from the base.

The barrel, at its lower part, is furnished with pawls *a a*, to operate in and with a dentated groove, *b*, formed in the base A.

At its upper part, the barrel has a concavity or chamber, *c*, whose surface is provided with an internal gear, *d*, whose upper part is circumscribed by a ratchet or circular toothed rack, *e*.

A "spider," or circular box or frame, D, is arranged within the chamber *c*, and rests on a bearing, *f*, projecting from its bottom.

This spider carries two gears, *g g*, which engage with the internal gear *d*.

Furthermore, the spider is provided with one or more pawls, *h*, to engage with a ratchet, *i*, formed on or fixed to the spindle C.

The two gears *g g* engage with another such gear, *k*, projected downward from a short journal, *l*, which also extends downward from a bar, *m*.

This bar goes diametrically across the chamber of the capstan-head E, which is concavo-convex in form, and is provided with holes or sockets, *n n*, to receive the ends of the capstan-bars generally employed in revolving the head.

There are pivoted to the bar *m*, two pawls *o o*, each of which, at its heel, is furnished with a lip, *p*, which is extended back from the pawl, so as to bear against the bar, when the pawl is in engagement with the ratchet or circular rack *e*.

The purpose of the lip is to relieve the pivot or centre-pin from strain while the capstan is in operation. It also prevents the pawl from dropping too far while the capstan-head is either being taken off or put in place on the capstan-barrel. It also regulates the inclination of the pawl.

There is applied to each of the capstan-head pawls *o o*, a mechanism or means by which the pawls may at any time be readily raised out of engagement with the circular rack *e*.

The devices for this purpose consist of a knobbed plug, *t*, and cords or ropes *q q*, extended therefrom, and fastened to the pawls.

The knobbed plug is inserted in a socket or hole, *r*, made through the capstan-head.

By taking hold of the knob of the plug, and drawing the plug out of its hole, the pawls, by the cords, may be simultaneously raised out of engagement with the rack.

This is useful in the case of overriding of the cable on the barrel of the windlass, or of setting free the barrel, so that it may freely revolve back, and restore the cable-coil to its proper position.

The short journal *l*, heretofore named as extended from the bar *m*, serves to support the spider, which can revolve on such journal.

The shoulder *s*, at the upper part of the journal, serves to keep the spider from rising off its seat.

The capstan-head is pivoted on the spindle, which serves as a centre therefor, the head being capable of being freely revolved, in either direction, horizontally on the spindle.

When, however, the head is turned either way, the barrel will be revolved in the same direction.

Turning the head one way, causes the pawls thereof to engage with the circular rack and revolve the barrel, the spider being then free to revolve with the barrel.

But when the head is turned the other way, the pawls will slip over the rack-teeth, the spider will be held stationary on the spindle, by means of the pawls of the spider and the ratchet of the spindle. As a consequence, the gear of the head will revolve the gears of the spider, which, through their action on the internal gear of the barrel, will cause the barrel to revolve.

I claim as my invention, the following, viz:

1. The capstan-pawl *o*, as made with the lip *p*, arranged to relieve the centre-pin from strain, as described, such lip being for other purposes, as explained.

2. The arrangement of the plug *t* and the lines *q*, with the pawls *o* and the capstan-head E.

3. The combination, as well as the arrangement, of the journal *l* with the capstan-head E, the pinion *k*, and the rotary gear-frame or spider D, arranged within the capstan, as set forth.

4. The arrangement of the auxiliary pawl or pawls *h* and the ratchet *i* with the spindle C, the rotary spider D and its gears, the capstan-head and its pinion and pawl or pawls, and the capstan-barrel and its internal gear.

JACOB EDSON.

Witnesses:

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