

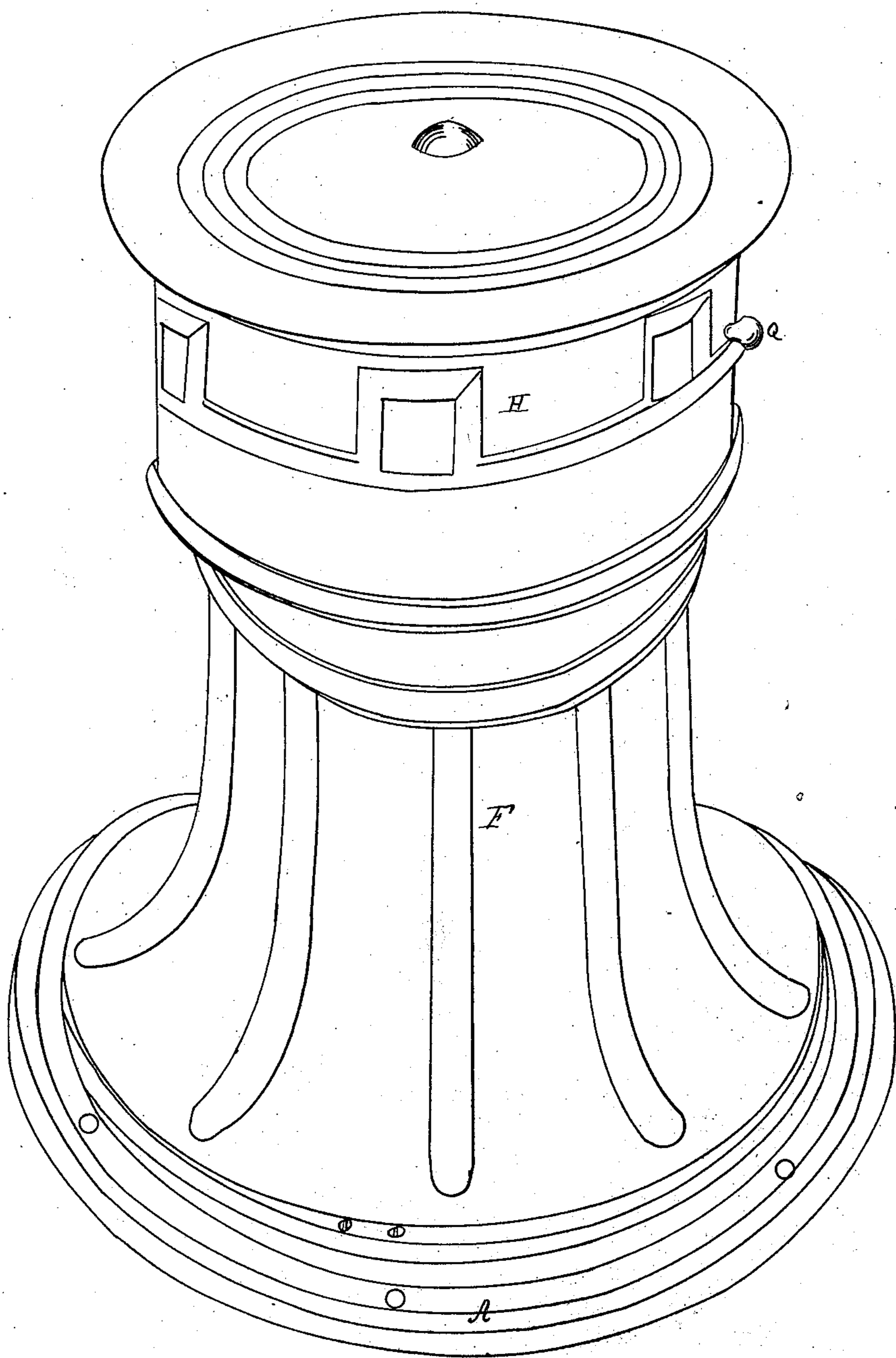
Sheet 1-2 Sheets.

D. & G. Tallcot,

Carstan,

No 14,377,

Patented Mar. 4, 1856.



Sheet 2-2 Sheets.

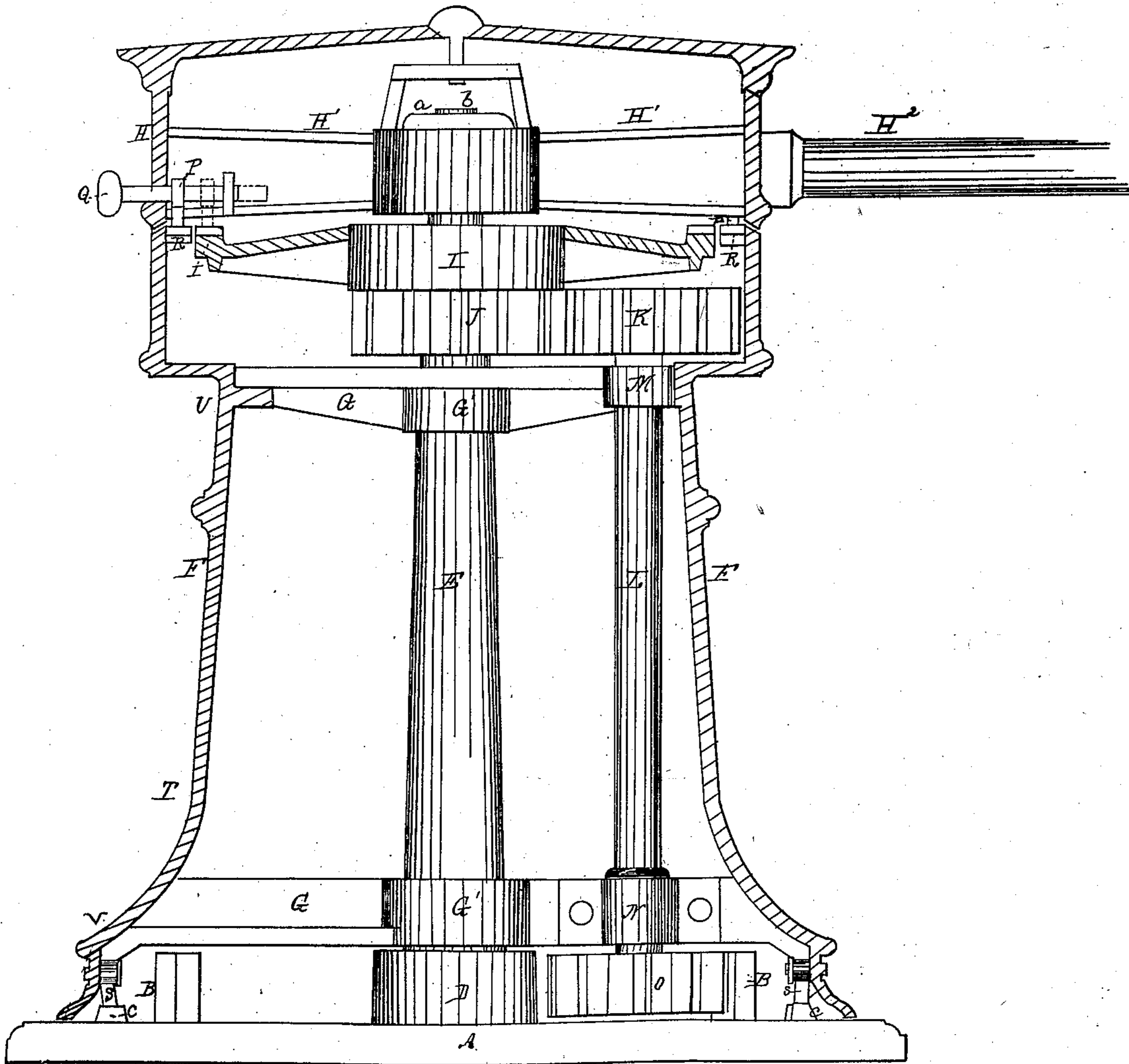
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Fig. 2.



UNITED STATES PATENT OFFICE.

D. TALLCOTT AND G. TALLCOTT, OF OSWEGO, NEW YORK.

SHIP'S CAPSTAN.

Specification of Letters Patent No. 14,377, dated March 4, 1856.

To all whom it may concern:

Be it known that we, DANIEL TALLCOTT and GEORGE TALLCOTT, of the city and county of Oswego and State of New York, have invented certain new and useful Improvements in Capstans; and we do hereby declare that the same are described and represented in the following specification and drawings.

To enable others skilled in the art to make and use our improvements we will proceed to describe the construction and operation referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1 is a perspective view of the capstan. Fig. 2 is a section showing the construction of the gearing, etc., in the interior of the capstan.

The nature of our invention consists in the arrangements of two ratchet wheels one upon the barrel, and the other upon or connected to the gearing of the capstan, so that the pawls arranged in the head of the capstan may be traversed and transferred from one of the ratchets to the other, so as to lock the head to or release it from either of the ratchets, so as to operate the capstan quick for light service or slow with great power as may be most desirable.

In the accompanying drawings, A is a circular base of cast metal, provided with a hub D, in which the spindle E is firmly fastened by riveting or otherwise. This base is also provided with an internal annular gear B, and a circular vertical ratchet C, in which the pawls S, S, which hold the capstan, catch as it is turned.

F, is the barrel of the capstan made in the form represented, and provided with two series of arms G, G, terminating in the hubs G', G', which are fitted so as to turn freely on the spindle E.

H, is the head of the capstan made of cast metal and provided with a series of sockets or holes H', H', for the levers or hand spikes H² with which it is to be turned on the upper end of the spindle E, to which it is fitted and secured from rising by the collar a, and screw b, as shown in the drawing. This head is provided with two or more pawls P, P, fitted to vibrate on pins like Q, and arranged to catch into the vertical ratchet R, on the upper end of the band F, as shown in the drawing; and connect the head H with the band so as to operate the capstan for any light service for which it may be

wanted and when speed is of more importance than power. But in order to operate the capstan with great power we make a vertical ratchet wheel I, with teeth arranged to turn just within the ratchet R, and fasten to it the gear J, and fit both of them to turn freely on the spindle E, so that when the pin Q is pushed in to the position represented by dotted lines in Fig. 2, the pawl P will catch into the ratchet I, and release ratchet R, so that by turning the top H it will carry the gear J, which turns the gear K, and shaft L, which shaft is fitted to turn in boxes M and N on the arms G, G, as shown in the drawing, and has the gear O fastened to its lower end arranged to work into the internal annular gear B, so as to turn the barrel F for slower but with great power; and whenever it is desirable to increase the speed of the capstan or barrel F it is only necessary to draw out the pins Q, Q, to transfer the pawls P, P, from the ratchet I to the ratchet R, so as to lock the head H, to the barrel F and release it from the ratchet I, so that the barrel F will turn with the head H, as heretofore described. The pawls S, S, vibrate on studs arranged near the lower edge of the barrel F, inside or under the edge of the barrel as shown in the drawing so the pawls and ratchet being covered are far less likely to be obstructed by ice so as to render them useless until the ice is removed.

With our improvements constructed as above described with the ratchets I and R, and pawls P, P, the capstan may be worked either geared or single by turning the head half way and then fleeting back if freight or anything else obstructs the passage of the levers entirely around the capstan.

We make the barrel F of the capstan slightly tapering or conical from T to U, and straight or nearly straight on the outside; and from T to V, we enlarge it or turn it out in the arc of a circle or nearly in the arc of a circle, so as to make the rope or chain fleet evenly and uniformly, while the strain on the capstan will be constantly near its base where it is most capable of supporting it without injury to any of its parts. By this construction we obviate and overcome one of the great defects in capstans heretofore constructed, which are made to taper from the bottom nearly or quite to the top with or without a slight curve so that the rope or chain winds down to the

bottom so as to come against the bottom flange and begin to ride when it fleets suddenly with a violent surge and recoil transferring the strain from the bottom to near the top of the capstan where it is the least able to support the strain with the surge and recoil to which it is subjected added to it, so that the capstan or the rope or chain is liable to be broken, which not unfrequently happens under such circumstances; besides it has been known to tear the capstan from the deck of the vessel at the imminent peril of the life and limbs of the seamen working it.

15 Capstans constructed with our improvements are far better and cheaper than the geared capstans heretofore made for the following reasons, viz: They are more simple in their construction and therefore less liable to get out of order and consequently it costs less to keep them in repair; besides they are far more durable and cost thirty per cent. less, and will perform the service required in less time and with less labor.

25 And as the gearing is all within the barrel of the capstan, there is no strain upon the spindle except the lateral strain of drawing the hawser, and this strain with our improved form of barrel is kept constantly uniform and near the base or bottom of the

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capstan. Besides no part of it is required to be put into or through the deck of the vessel, therefore the planking and frame are not injured in applying it and the danger of leakage and consequent damage to the cargo avoided. Besides the pawls and ratchets at the bottom of the capstan are covered by the lower edge of the band, so as to render them less liable to be obstructed by ice so as to render them useless until the ice is removed. 35 40

We believe that we have described the construction and operation of our improvements in capstans so as to enable any person skilled in the art to make and use them; and we will now specify what we desire to secure by Letters Patent, to wit: 45

We claim the arrangement of the ratchet I, fastened to the gear J, with the ratchet R, on the barrel F, and the traversing pawls P, P, in the head H, for the purpose of locking the head to, and releasing it from each of the ratchets I, and R, substantially as described for the purposes set forth. 50

DANIEL TALLCOTT.
GEO. TALLCOTT.

Witnesses:

GEO. CARPENTER,
GEO. W. CARPENTER.