

No. 621,489.

Patented Mar. 21, 1899.

J. B. COWPER.
SHIP'S WINDLASS.

(Application filed Mar. 3, 1898.)

(No Model.)

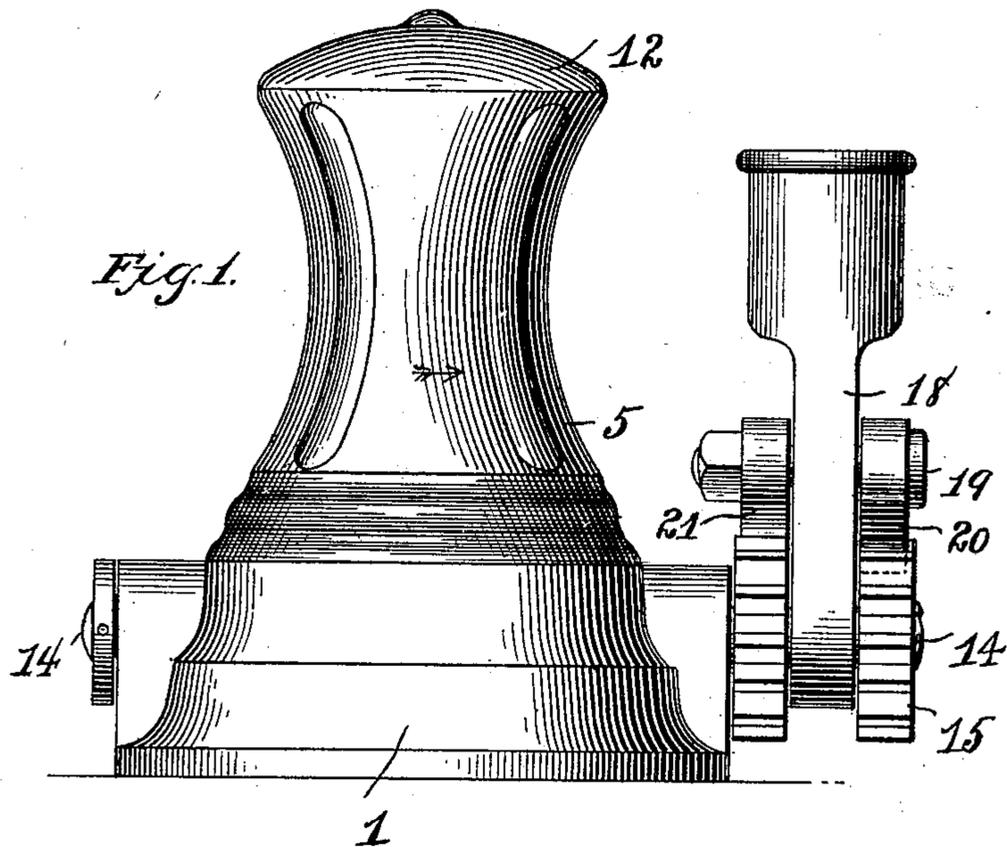


Fig. 2.

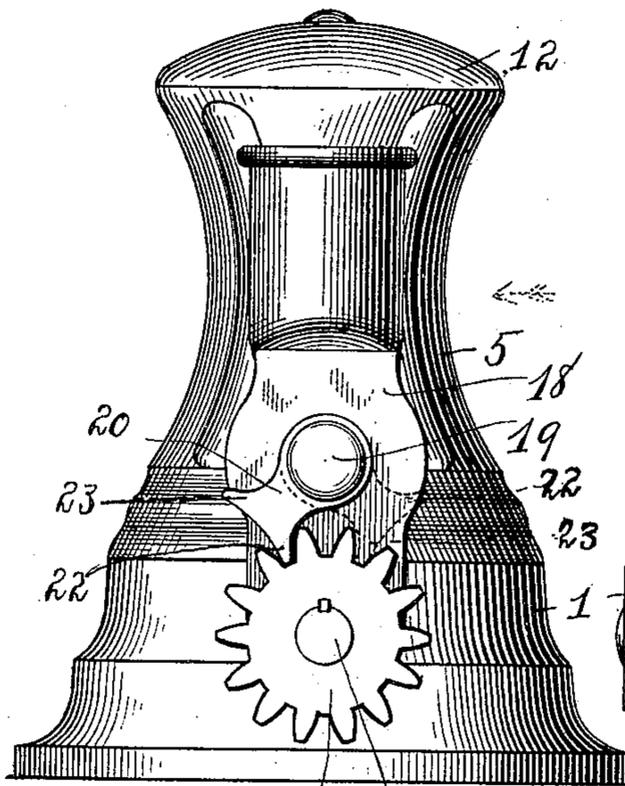
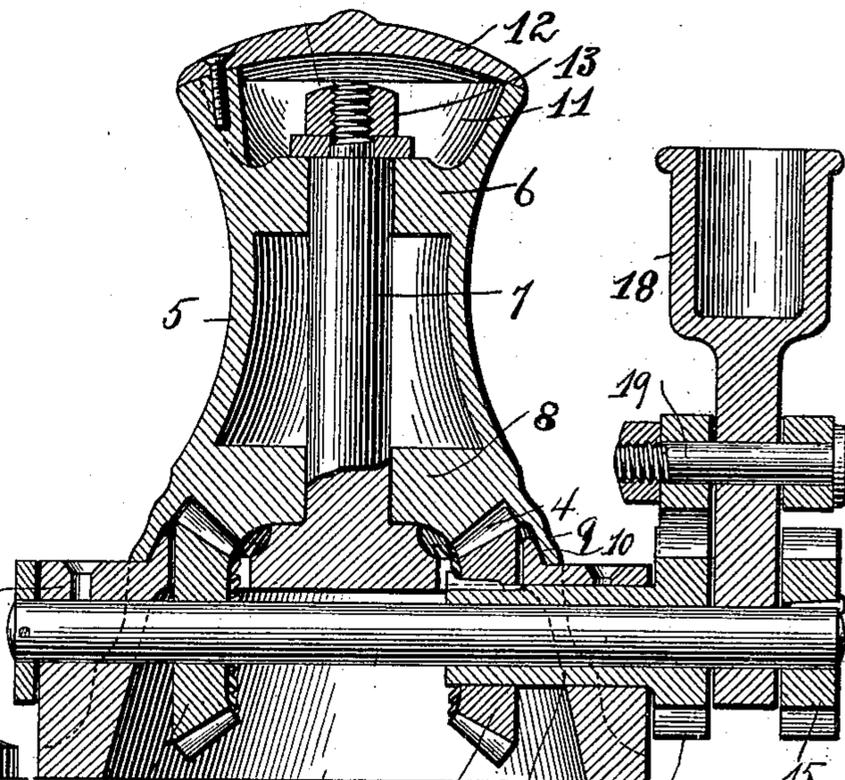


Fig. 3.



Witnesses 15 14

Ed. Wurdeman
Edwin Cruise

Inventor
John B. Cowper
By J. Stockman
Attorney

UNITED STATES PATENT OFFICE.

JOHN B. COWPER, OF LYNBROOK, NEW YORK.

SHIP'S WINDLASS.

SPECIFICATION forming part of Letters Patent No. 621,489, dated March 21, 1899.

Application filed March 3, 1898. Serial No. 672,388. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. COWPER, a citizen of the United States, residing at Lynbrook, in the county of Queens and State of New York, have invented certain new and useful Improvements in Ships' Windlasses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention has relation to ships' windlasses or capstans, but more particularly to that type thereof wherein the drum is rotated continuously in one direction by the reciprocations of a main operating-lever; and the invention consists in certain peculiarities of construction, substantially as hereinafter described, and more particularly pointed out in the claim.

The object of the invention is to provide a most simple and powerful construction of windlass in which the drum may be rotated continuously in either direction or locked against rotation by proper adjustment of peculiarly formed and arranged pawls. This object is accomplished by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a windlass constructed in accordance with my invention. Fig. 2 is a view of the same at right angles to Fig. 1, and Fig. 3 is a vertical section.

The same numerals of reference designate the same parts in the several views.

1 designates the hollow base of the windlass, which is formed to provide space for the beveled gears 2 and 3, hereinafter more particularly described, and the top of which has openings through which said gears project into engagement with a series of circumferential cogs 4, formed on the bottom of the rotating barrel or drum 5. This latter is formed near its top with a plate 6, through which projects the upper end of a pivotal bolt 7, that rises from the base and which also extends through the solid bottom 8 of said drum or barrel. The drum or barrel is further formed around the cogs 4 with a depending

flange 9, that engages a similar flange 10, extending from the base. Thus wobbling of the drum when in action is prevented. The upper end of the drum is formed to provide a chamber 11, to which access is afforded by means of a removable cap 12, for the reception of a jam-nut 13, which is threaded upon the upper end of the bolt 7 and bears upon the plate 6, thus removably and yet securely holding the drum in position.

14 designates a shaft which extends horizontally through the base 1 and has one of its ends projecting outward considerably beyond said base. The bevel-gear 2, above mentioned, is fixed upon one end of said shaft, so as to rotate therewith, and upon the extreme opposite end of said shaft and outside of the base is keyed a ratchet-wheel 15. Mounted upon said shaft and projecting to within the base is a loose sleeve 16, upon the inner end of which is keyed the bevel-gear 3, while its outer end carries a ratchet-wheel 17.

18 designates a handle-socket, the lower end of which is pivotally mounted on the shaft 14 between said ratchets. This socket is provided above the ratchets 15 and 17 with a transverse pin 19, which extends beyond the stem of the socket in both directions, and upon the ends of said pin are mounted two pawls 20 and 21, which are reversibly pivoted thereon, and each has two lateral projections 22 and 23 at its free end.

From the above the operation of my device will readily be understood to be as follows, it being of course apparent that the gears 2 and 3 are beveled in opposite directions, namely: When the pawl 20 projects to the left and the pawl 21 to the right from opposite sides of the handle-socket 18, their respective points or projections 22 and 23 will be engaged with the respective ratchets 15 and 17, so that reciprocation of the handle-socket will cause the drum to rotate continuously in the direction of the arrow shown in Fig. 1. When it is desired to rotate the drum in the reverse direction, it is only necessary to turn each pawl entirely over upon the pivot-pin 19 to the reverse position of that previously occupied by it, so as to cause the pawl 20 to extend to the right and engage the ratchet 15 with its projection 23 (as indicated in dotted

lines in Fig. 2) and the pawl 21 to extend to the left and engage the ratchet 17, with its projection 22.

If deemed necessary or advisable, ball-bearings for the drum may be provided.

From the above it will be seen that I have provided for the continuous rotation of the drum in one direction from a single operating-lever equipped with one pair only of pawls, and also for the reversal of the direction of such rotation by means which obviates the necessity of employing supplemental devices for adjusting the pawls and holding them in adjusted position, thus materially simplifying and cheapening the construction and increasing the durability thereof without loss of capability or reducing efficiency.

Having thus described the invention, what I believe to be new, and desire to secure by Letters Patent, and what I therefore claim, is—

In a windlass, the combination of a base, a drum mounted for axial movement on the base and having a circumferential series of

cogs, a shaft journaled in said base and projecting at one end beyond the same, reversely-beveled gears engaging said cogs, one of said gears being fast and the other loose on the shaft, ratchets on the projecting end of the shaft, one being fast thereon and the other loose and connected to the loose beveled gear, a single lever pivoted on said projecting end of the shaft, between the ratchets, pivots on the lever, projecting from it at opposite sides, and a pair of pawls pivoted respectively on the respective pivots to engage the respective ratchets, each pawl having two laterally-extending points at its free end either of which may operatively engage its ratchet, and each pawl being free to be turned over on its pivot to reverse its position, substantially as and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. COWPER.

Witnesses:

LEVI L. DAVIS,
MORRIS HILLYER.