F. S. MANTON.
Windlasses.

No. 197,039. Patented Nov. 13, 1877.

Fig. 1.

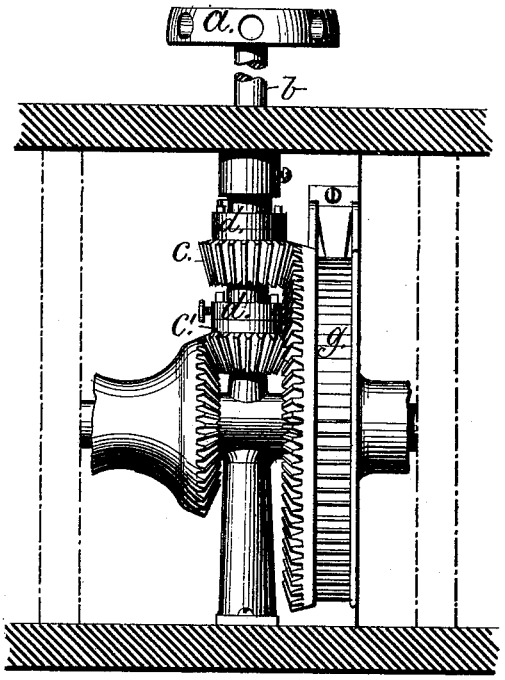


Fig 2.

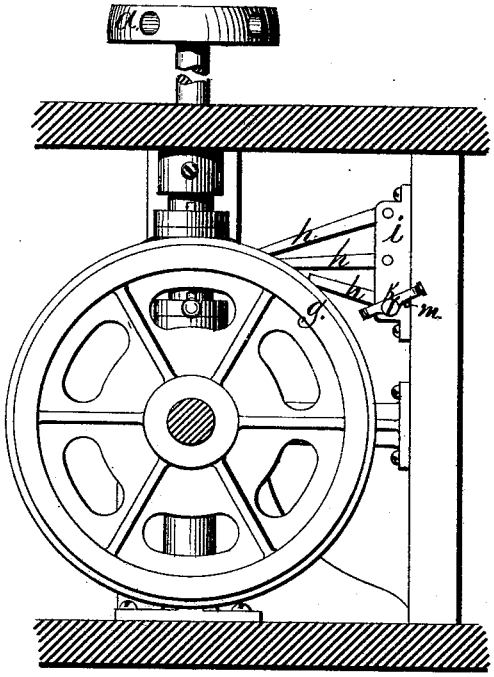


Fig. 4.

Fig. 5.

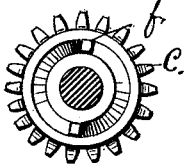


Fig. 3.

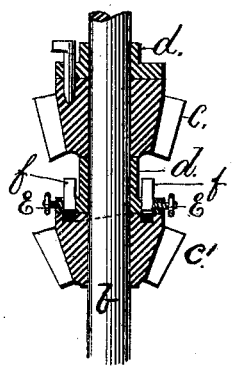
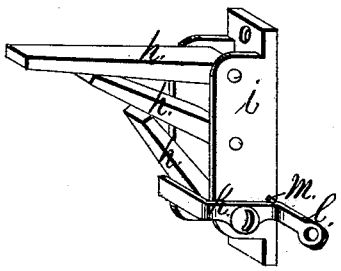


Fig. 6.



WITNESSES.

Henry J. Miller

Jos. A. Miller Jr.

INVENTOR.

Frank S. Manton

by Joseph A. Miller

Attorney

UNITED STATES PATENT OFFICE.

FRANK S. MANTON, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN WINDLASSES.

Specification forming part of Letters Patent No. **197,039,** dated November 13, 1877; application filed April 3, 1877.

To all whom it may concern:

Be it known that I, FRANK S. MANTON, of the city of Providence, county of Providence, and State of Rhode Island, have invented new and useful Improvements in Windlasses; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is an elevation of the driving portion of a windlass. Fig. 2 is a side elevation of the same. Fig. 3 is a sectional view of the driving-pinions and the collars containing the locking-keys, by means of which the beveled pinions may be connected with or disconnected from the shaft. Figs. 4 and 5 are top views of the beveled pinions and locking-keys. Fig. 6 is an enlarged view of the pawls and the means by which they are held when the windlass is reversed.

This invention has reference to improvements in windlasses used on board of ships; and consists, first, in the arrangement of collars secured to the driving or capstan shaft, and provided with locking-keys, arranged so that either of the beveled driving-pinions may be readily connected to or disconnected from the shaft, and the locking-keys supported in the collars when the pinions are disconnected; and, second, in the peculiar arrangement by which the pawls are raised free from the ratchet-wheel and supported in that position.

In the drawings, *a* represents the capstan; *b*, the driving-shaft. C and C′ are the beveled pinions, gearing into gears secured to the windlass-shaft, of different diameter, so that when the beveled pinion C is in gear the windlass will turn slower, but with more power, than when the pinion C′ is in gear.

d d are collars secured to the shaft *b*, and provided with the key-blocks *f f*, and also with the thumb-screws E E, by which they are secured.

When the locking-keys are allowed to enter the seats in the pinions, the same will revolve with the collars *d* and the shaft *b;* but when they are raised and supported by the screws E E the pinion can revolve freely around the shaft.

By this arrangement the locking-keys are not liable to get lost, they are always in place, and either beveled pinion can be quickly connected or disconnected, and the speed and power of the windlass changed.

h h h are the pawls entering the ratchet-wheel *g*. These pawls are hinged in the box *i*. At the lower end of the box *i*, below the lowest pawl, the hinged lever or loop *k*, provided with the arm *l*, is secured; and when it is desired to raise the pawls off the ratchet-wheel *g*, the arm *l* is depressed, and the pin M inserted above the lever K. By these means the lowest pawl *l* is raised against the next, and this against the upper, and so all the pawls are at once raised off the ratchet-wheel *g*, and retained in this position.

I am aware that levers have been used for the purpose of raising the pawl or pawls, as in the case of Hammond, of 1843; but by my construction I am enabled to avoid the possibility of the levers slipping from the pawl by the fact of my levers surrounding the box or standard, and having two bearings therein; also, that it surrounds the lower pawl, thereby causing a steadier movement in the pawl and more certainty in its operation.

In a ship-windlass it is important that all parts shall be fixed and secured, so that when they are operated they will be in their proper place and position, and can be instantly applied. If a key used to lock one part of the windlass to another is not in its proper place, ready to be instantly applied, the loss of time may lose the ship.

The same is true of the arrangement to raise and secure the pawls. If, when the windlass is reversed, a sailor must look for a rope to secure the pawls off from the ratchet-wheel, much and most valuable time may be lost, whereas by the arrangement shown the pawls can be instantly raised and permanently secured, and yet be as quickly replaced on the ratchet-wheel.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a ship-windlass, the combination, with the driving-pinions C and C′, of the locking-

keys *f f* and screws E E, arranged in connection with the collars *d d* and shaft *b*, so that the pinions may be readily locked and unlocked, and the locking-keys be secured to the collars, substantially as and for the purpose set forth.

2. The combination, with the pawl *h* or pawls *h h h*, of the hinged loop-lever K and pin M, arranged to raise the pawl or pawls and secure the same, substantially as and for the purpose described.

FRANK S. MANTON.

Witnesses:
JOSEPH A. MILLER,
AMOS A. WHITE.