Dunbar & Robertson,

Capstan.

No. 17,715. Patented June 30, 1857.

Fig. 1

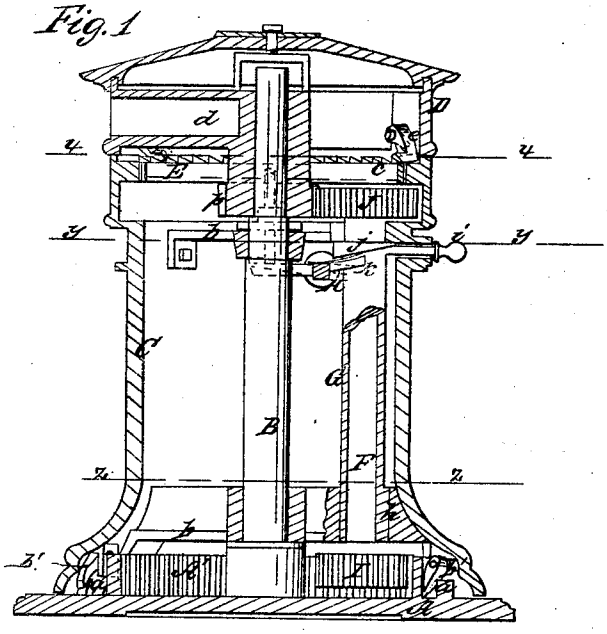


Fig. 4

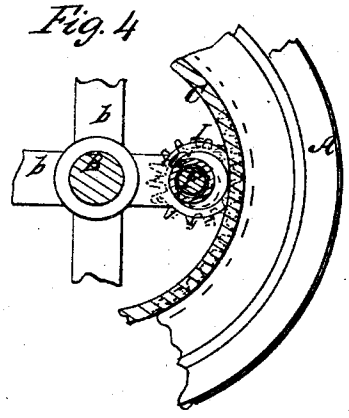


Fig. 2

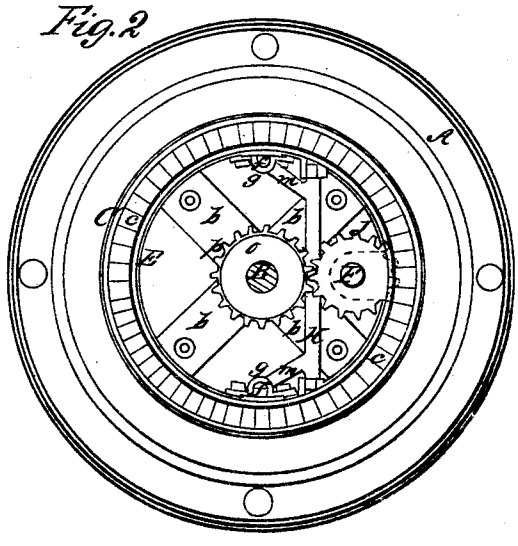
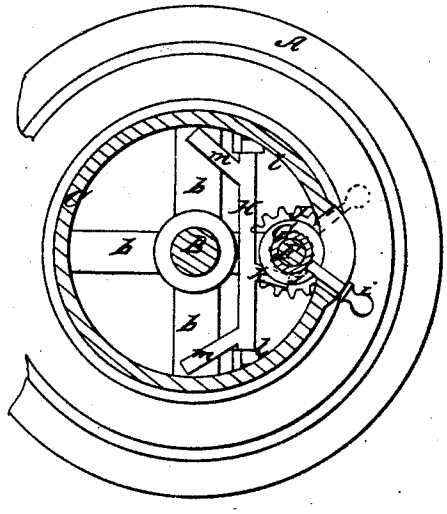


Fig. 3



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

ROBERT DUNBAR AND JOHN F. ROBERTSON, OF BUFFALO, NEW YORK, ASSIGNOR TO THE BUFFALO EAGLE IRON WORKS CO.

SHIP'S CAPSTAN.

Specification of Letters Patent No. 17,715, dated June 30, 1857.

To all whom it may concern:

Be it known that we, ROBERT DUNBAR and JOHN F. ROBERTSON, of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Capstan; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of our improvement. Fig. 2 is a horizontal section of ditto, taken in the line (*x*), (*x*), Fig. 1. Fig. 3 is also a horizontal section, taken in the line (*y*), (*y*). Fig. 4 is also a horizontal section, taken in the line (*z*), (*z*).

Similar letters of reference indicate corresponding parts in the several figures.

This invention has for its object the giving, by a novel and simple means, of a variable movement to the capstan so that it may be operated with either a quick or slow motion as desired, and power obtained and speed sacrificed when power is required and power sacrificed and speed obtained when power is not required.

The invention consists in a peculiar arrangement of gearing whereby the rotating cap may be connected either directly or indirectly with the body of the capstan as will be hereinafter fully shown and described and the desired end obtained.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents a circular cast-iron plate, which is firmly secured to the deck of a vessel or platform placed where the capstan is to be used. A vertical spindle B is attached to the center of this plate. On the upper surface of the plate A ratchet teeth *a* are formed and an annular ledge is also formed on said plate, said ledge having teeth on its outer side and forming a stationary gear wheel A′.

C represents the body of the capstan which is a shell constructed of cast-iron, and is provided internally with cross arms *b*, which have holes or apertures made through at the points of intersection to allow the spindle B to pass through. The body C is allowed to rotate freely on the spindle B. To the lower end of the shell C the holding pawls *b′*, *b′*, are attached. Said pawls catching into the ratchet teeth *a*, on the plate A and preventing the shell from turning in one direction.

On the upper end of the body or shell C ratchet teeth *c* are formed, said teeth extending all around the edge of the shell as shown plainly in Fig. 2.

D represents a cap which is constructed of cast-iron and of the usual form. This cap has horizontal recesses *d*, formed in it to receive the usual hand levers, and the cap is placed and is allowed to turn freely on the upper end of the spindle B. To the lower part of the cap D two pawls *e*, *e*, are attached said pawls catching into the ratchet teeth *c*, on the upper part of the body or shell C, as shown clearly in Fig. 1.

Within the upper end of the body or shell C a ring E is placed. This ring has two pendant rods (*f*), (*f*), attached. Said rods being fitted in guides or sockets (*g*) attached to the inner sides of the body or shell as shown in Fig. 2.

Within the body or shell C a vertical shaft F is placed. This shaft is fitted within a hollow tube or shaft G which has an eccentric hub or boss *h* on its lower end. This hub or boss *h*, is placed or fitted within one of the lower cross arms *b*. The upper part of the hollow shaft G, has a lever (*i*) attached which lever projects through the side of the shell or body C at its upper part. On the upper part of the hollow shaft G a cam (*j*) is fitted, and a projection *k*, which is attached to a shaft H, bears against the under or face side of the cam *j*. The ends of the shaft H are fitted in bearings *l*, attached to the inner side of the body or shell C, and an arm *m* is attached to each end of the shaft H, the ends of said arms projecting underneath the rods *f*, *f*, of the ring E, said rods resting on the arms *m*.

To the lower end of shaft F a pinion I is secured, and a pinion J is placed on the upper end of said shaft.

The cap D has a hub or boss *o* attached to the center of its under side and a toothed wheel *p* is placed on the lower end of said hub or boss. The wheel *p* gears into the pinon J on the upper end of shaft F.

From the above description of parts it will be seen that if the pawls *e*, *e*, are down upon the ratchet teeth *c*, on the upper end of the shell or body C, and the pinion I thrown out of gear with the stationary wheel A′ on the plate A, the cap D and shell or body C will be connected and both turn with each other, but if the pawls *e* be varied and the pinion I thrown in gear with the wheel A′ it will be seen that the cap D is connected with the

body or shell C through the medium of the gearing *p*, J, I, A′, and in the latter case the speed of the shell or body C will be much slower than in the former case when the cap was directly connected with the shell or case.

The pinion I is thrown in and out of gear with the wheel A′ by operating the lever or arm (*i*), and thereby turning the hollow shaft G and eccentric *h*, the pawls *e* being also raised and lowered at the same time by the movement of the ring E which is actuated by the eccentric *j*, on the shaft G, said eccentric actuating the shaft H, arms *m*, and rods *f*, *f*.

Thus it will be seen that by these extremely simple means a variable movement may be given the capstan and a slow or quick movement obtained according as speed or power is required.

We do not claim giving a variable movement to the capstan, irrespective of the particular means employed for effecting the purpose, for capstans have been so arranged as to have a variable movement; but

What we claim as new, and desire to secure by Letters Patent, is—

The arrangement of the cam (*j*) and eccentric (*h*) upon the shaft G, operated by the lever (*i*) for throwing in and out of gear the pinions J, and I, as herein set forth.

ROBERT DUNBAR.
JOHN F. ROBERTSON.

Witnesses:
J. E. FOLLETT,
T. P. DENISON.