

W. NEWCOMB.

Windlasses.

No. 143,993.

Patented Oct. 28, 1873.

FIG. I.

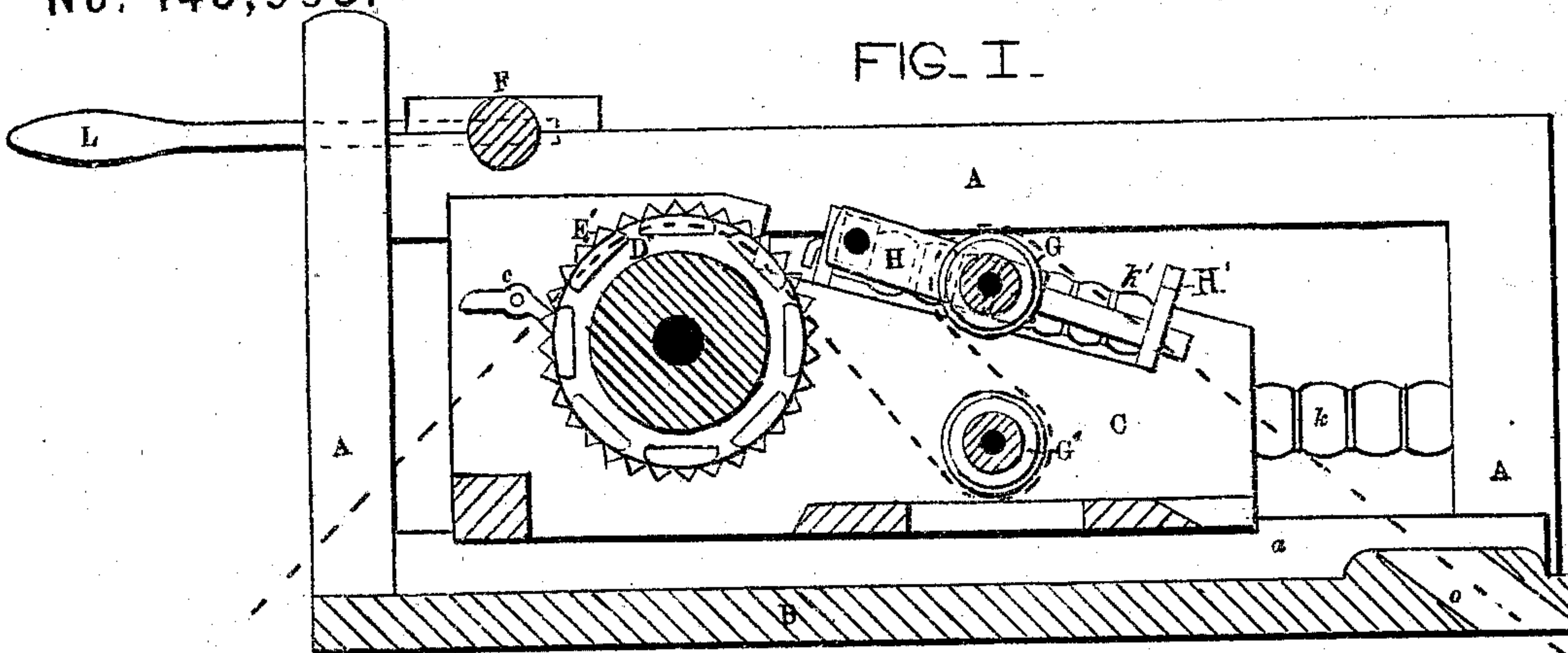


FIG. II.

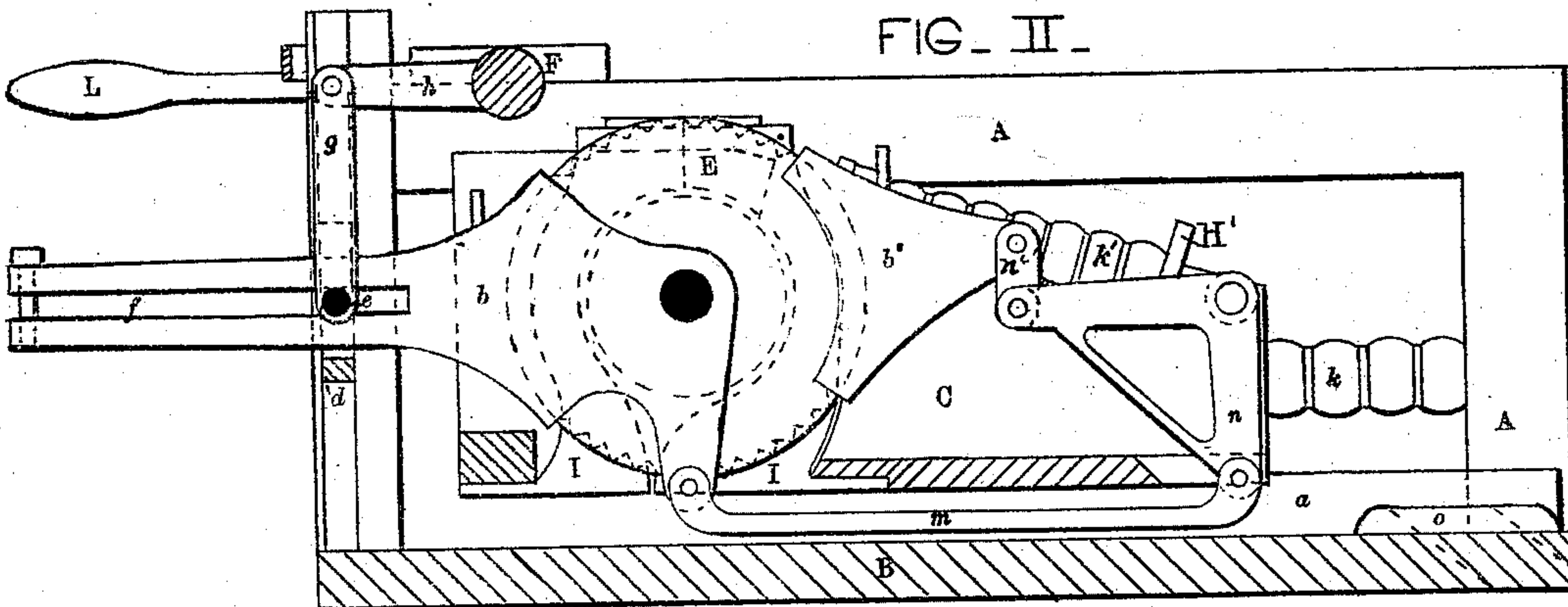
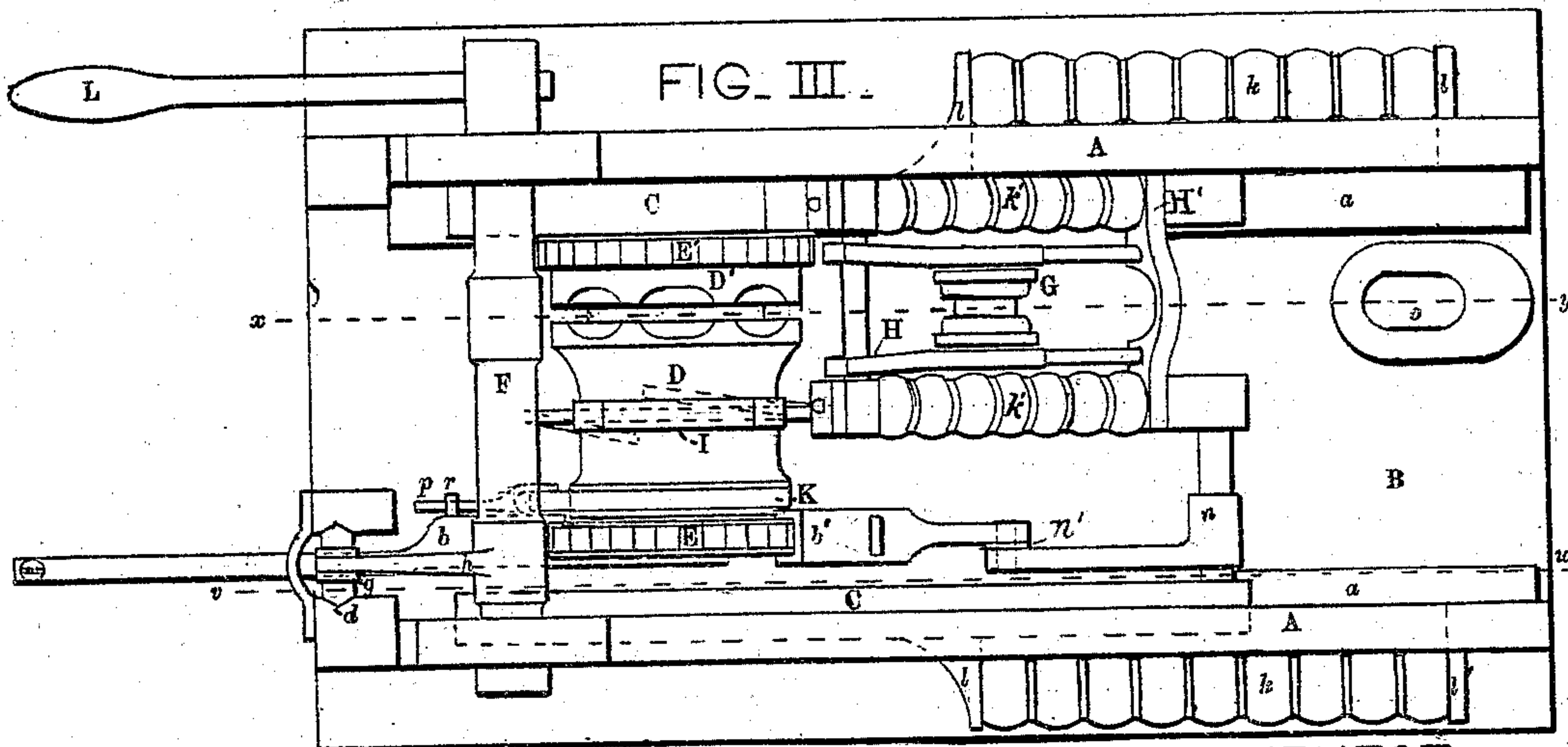


FIG. III.



WITNESSES.

Wm H Corcoran
Woodruff W Wharton

INVENTOR.

Wilson Newcomb
by G. H. & W. J. Howard
attys

UNITED STATES PATENT OFFICE.

WILSON NEWCOMB, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF
HIS RIGHT TO NATHAN W. ALLEN, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN WINDLASSES.

Specification forming part of Letters Patent No. **143,993**, dated October 28, 1873; application filed
September 10, 1873.

To all whom it may concern:

Be it known that I, WILSON NEWCOMB, of the city of Baltimore and State of Maryland, have invented certain Improvements in Ships' Windlasses, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to ships' windlass, having certain of its parts capable of a relief movement in cases where the operative devices thereof are subjected suddenly or otherwise to an undue strain; and, further, to a new combination of parts converting a reciprocating motion of the primitive parts of the operative mechanism into a rotary movement applied to the barrel or chain head.

The object of my invention is to provide the windlass with such elements as will guard it from shocks caused by the movement of the vessel or otherwise, and to apply a strain directly upon the barrel or chain head proportionately with that placed upon the cable; that is to say, the power applied to the primary portions of the moving mechanism in the hands of the operators being constant, the leverage upon the parts acting directly upon the barrel and chain head is, by means of the invention herein described, variable, and greatest when the cable is at its maximum tension.

In the further description of my invention which follows, due reference must be had to the accompanying drawing, in which—

Figure 1 represents a longitudinal section of my improved windlass upon the line *x y*, shown in Fig. 3. Fig. 2 is also a longitudinal section, but upon line *v w* in Fig. 3; and Fig. 3 is a plan of the invention.

Similar letters of reference indicate similar parts of the invention in all the views.

A is the frame of the windlass fastened to the deck B of the vessel. C is a carriage resting upon the slides *a*, which are secured to the frame A. D is the barrel, a portion of which, D', is formed as a chain-head. On either end of the barrel D is a ratchet-wheel,

E E'. The ratchet-wheel E is engaged by pawls situated within the arms *b* and *b'*, by which, a reciprocating motion being imparted to the said arms, a continuous rotary motion of the barrel and chain-head is obtained. The wheel E', operating with the pawl *c*, prevents a retrograde movement of the barrel. The arm *b* is connected to a cross-head, *d*, by means of the pin *e* which passes through a slot, *f*, running longitudinally of the arm. The cross-head *d* is suitably guided by a portion of the frame, and is connected, by means of the links *g*, to an arm, *h*, fastened to the shaft F which rests in bearings on the upper side of the frame. To retain the carriage C in the position shown in the drawing, the springs *k k* are used, which are confined upon a rod between the brackets *l* and *l'*, respectively located upon the carriage and frame. The elasticity of the springs, which are preferably made of india-rubber, is such as to cause the retention of the carriage in position under ordinary circumstances; but, upon a sudden shock being given to the cable, the springs are compressed, allowing the carriage with barrel, chain-head, and other attachments to move toward the bow of the vessel, thereby placing a gradually-increasing strain upon the windlass. The arms *b* and *b'*, hereinbefore mentioned as operating upon the ratchet-wheel E, are connected by a rod, *m*, and bell-crank and link *n n'*, which, together, cause a reciprocal movement of the said arms. G and G' are sheaves, over which the cable, when a chain, passes before entering the hawse-hole *o* in the deck. The sheave G, which is attached to a movable frame, H, is capable of a longitudinal movement independently of the frame to which it is attached, the said movement being governed, as in the case of the carriage, by springs *k'*, the action of which tends to support the sheave in the position shown in the drawing. The sheave G' is fixed in so far as relates to any longitudinal movement independently of the carriage. I is a spirally-formed collar or flange extending around the barrel of the windlass, to guide the cable, when a rope, as it is wound upon the barrel, and also to prevent the riding of the cable. K is a friction-band, by means of

which the movement of the windlass is regulated in paying out the cable. The band is operated by means of the lever *p*, which can be connected by the pin *r* to the arm *b*, and operated by the same mechanism as the shaft *F*. *L* is a bar to be used to operate the windlass, and may be attached to any convenient part of the shaft *F*.

By referring to Fig. 1, it will be seen that, by the use of the sheave *G*, the movement of the cable, as the springs *k'* are compressed, is twice that of the said springs; that is to say, for one foot of movement of the frame *H*, the carriage being stationary, two feet of cable pass through the hawse-hole. It will also be seen that the sheave *G*, although it in connection with the sheave *G'* presents the appearance of a tackle, differs from it in that it does not alter the rapidity of the winding process, or increase or diminish the power of the machine.

Having described my invention, what I claim

as new, and wish to secure by Letters Patent of the United States, is—

1. The independently-sliding sheave *G*, frame *H*, and springs *k'*, in combination with the sliding carriage of the windlass, as set forth.

2. The independently-sliding sheave *G* and sheave *G'*, operating together, as and for the purposes set forth.

3. In combination with the ratchet-wheel *E* of the chain-head, upon or within the sliding carriage as described, the arms *b* and *b'*, rod *m*, bell-crank *n*, and link *n'*, the said arms *b b'* being provided with pawls, substantially as specified.

In testimony whereof I have hereto subscribed my name this 9th day of September, A. D. 1873.

WILSON NEWCOMB.

Witnesses:

WM. T. HOWARD,
W. H. HAYWARD.