J. Edson,

Windlass.

No. 70,180. Patented Oct. 29, 1867.

Fig: 1.

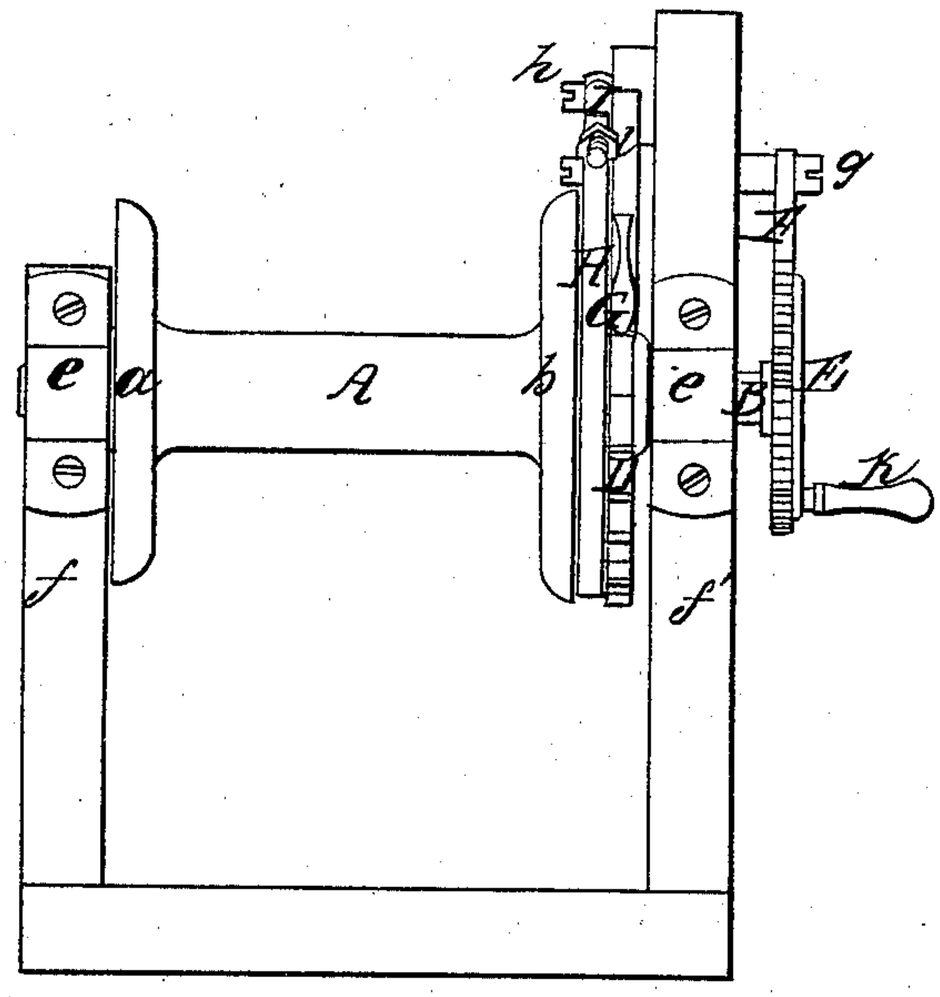


Fig: 2.

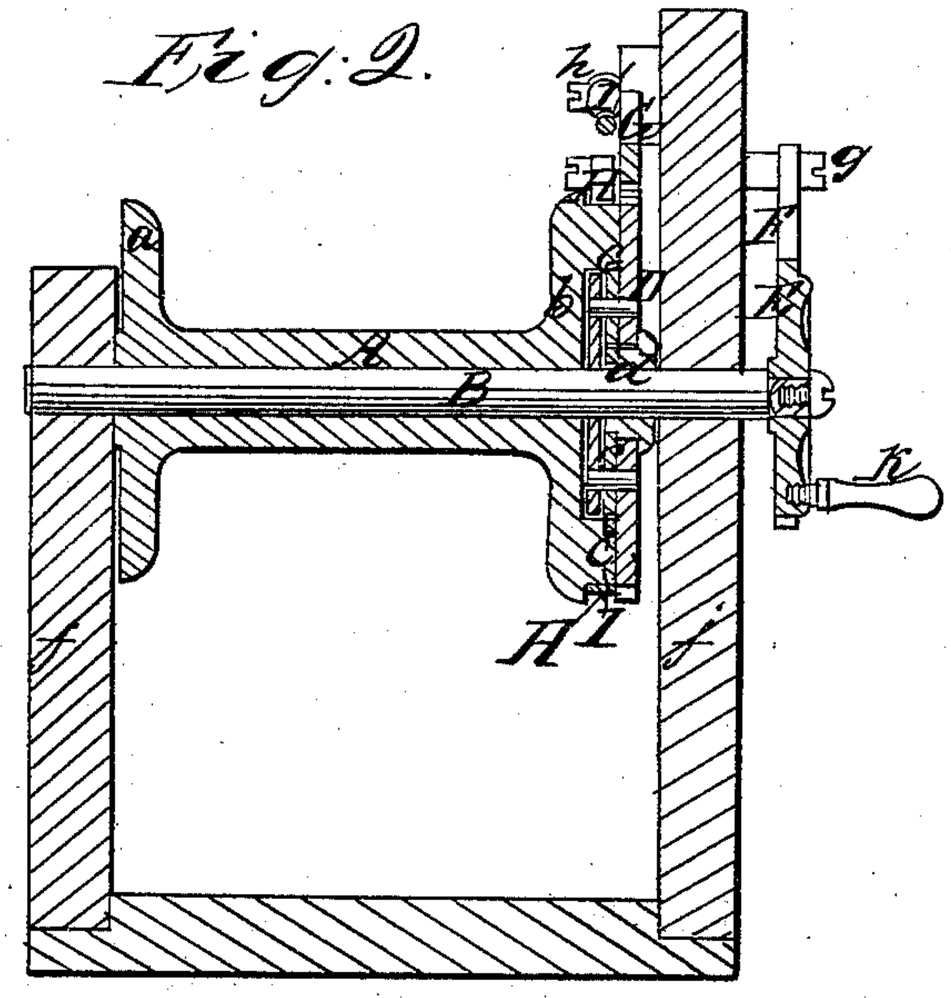
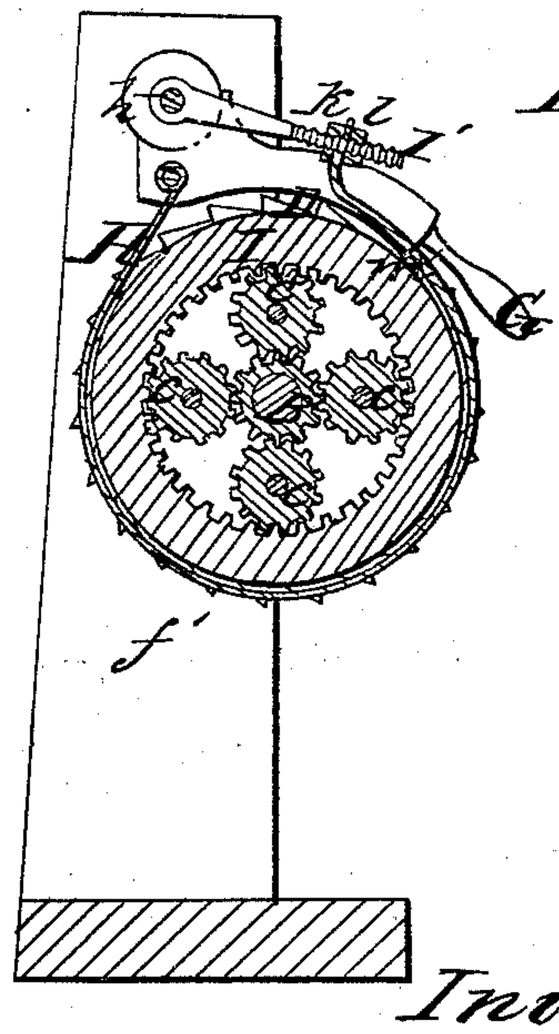


Fig: 3.



Witnesses.

Samuel N. Pfaff

Laurits Möller

Inventor.

Jacob Edson

by his attorney.

R. Uhlrich

United States Patent Office.

JACOB EDSON, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 70,180, *dated October* 29, 1867.

IMPROVEMENT IN HOISTING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS MAY COME:

Be it known that I, JACOB EDSON, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Hoisting Machine; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a front elevation,

Figure 2 a longitudinal and vertical section, and

Figure 3 a transverse section of it; the latter section being taken through its brake.

In such drawings, A denotes a windlass-barrel, which revolves freely on a horizontal shaft, B, and is provided with an internal gear, C, and a brake-pulley, I, which are applied to one of the heads *a b* of such windlass. A ratchet, D, also revolves on the shaft, and carries on its inner side one gear or a series of gears, *e e*, such gear or gears being made to engage with an internal gear, *d*, fixed on the shaft B. Each of the gears *e* engages with the internal gear C. The shaft B is supported in boxes, *e e*, upheld by two standards, *f f'*. There is also another ratchet, E, fixed on the shaft B. A retaining-pawl, F, supported on a journal, *g*, projecting from the standard *f* engages with the said ratchet E. Over the ratchet D is a hand-lever, G, capable of being turned in a vertical plane on a fulcrum, *h*, projecting from the standard *f'*. To this lever one end of a spring-brake, H, is fastened, its other end being provided with a hole to receive a screw-arm, I', projecting from the fulcrum *h*, and provided with one nut, *l*, or two nuts, *k l*, arranged on it as represented. The brake encompasses the pulley I. The lever G is to be formed with a shoulder or tooth, *m*, to operate with the ratchet D. Thus the lever not only answers as a pawl to the ratchet D, but as a means of drawing the brake H closely upon the pulley I of the windlass-barrel. By laying hold of a crank, K, projecting from the ratchet E, and revolving such ratchet, the shaft B will be put in revolution, and in consequence of the ratchet D being held from revolving by the lever-pawl G, the windlass-barrel A will be caused to revolve on the shaft B, so as to wind up a rope when fixed to such barrel. By raising the lever-pawl G out of the ratchet D, the said ratchet and the windlass and its brake-pulley will be free to revolve on the shaft B, the rotary motion being impeded as may be necessary by still further raising the pawl-lever, so as to bring the brake H into action upon the pulley I. Thus, in lowering a weight or fall, the brake-lever is used to perform two functions, viz, to set free the holding-ratchet D, and bring the brake into action, as circumstances may require. By means of the said arm, I', and its nut or nuts, the brake may be properly adjusted with reference to the brake-pulley I, the pawl-lever G, and the ratchet D, that is, so as to cause the brake to act with friction on the pulley I the instant the pawl-lever G may be raised out of action with the ratchet D.

I claim as my invention, the following, viz:

I claim the arrangement and combination of the lever-pawl G, the brake H, the windlass-barrel A, the brake-pulley I, the ratchet D, the shaft B, and the train of gears *c d* C, or the equivalent thereof; such gears being applied to the shaft, ratchet, and windlass-barrel, substantially as specified.

I also claim the combination of the screw-arm I' and its nut *l* or nuts *k l* with the brake H and the lever-pawl G, substantially as described.

JACOB EDSON.

Witnesses:

R. H. EDDY,

GEO. H. ANDREWS.