

T. L. HUBBARD.
Ships' Winches.

No. 152,639.

Patented June 30, 1874.

Fig. 1.

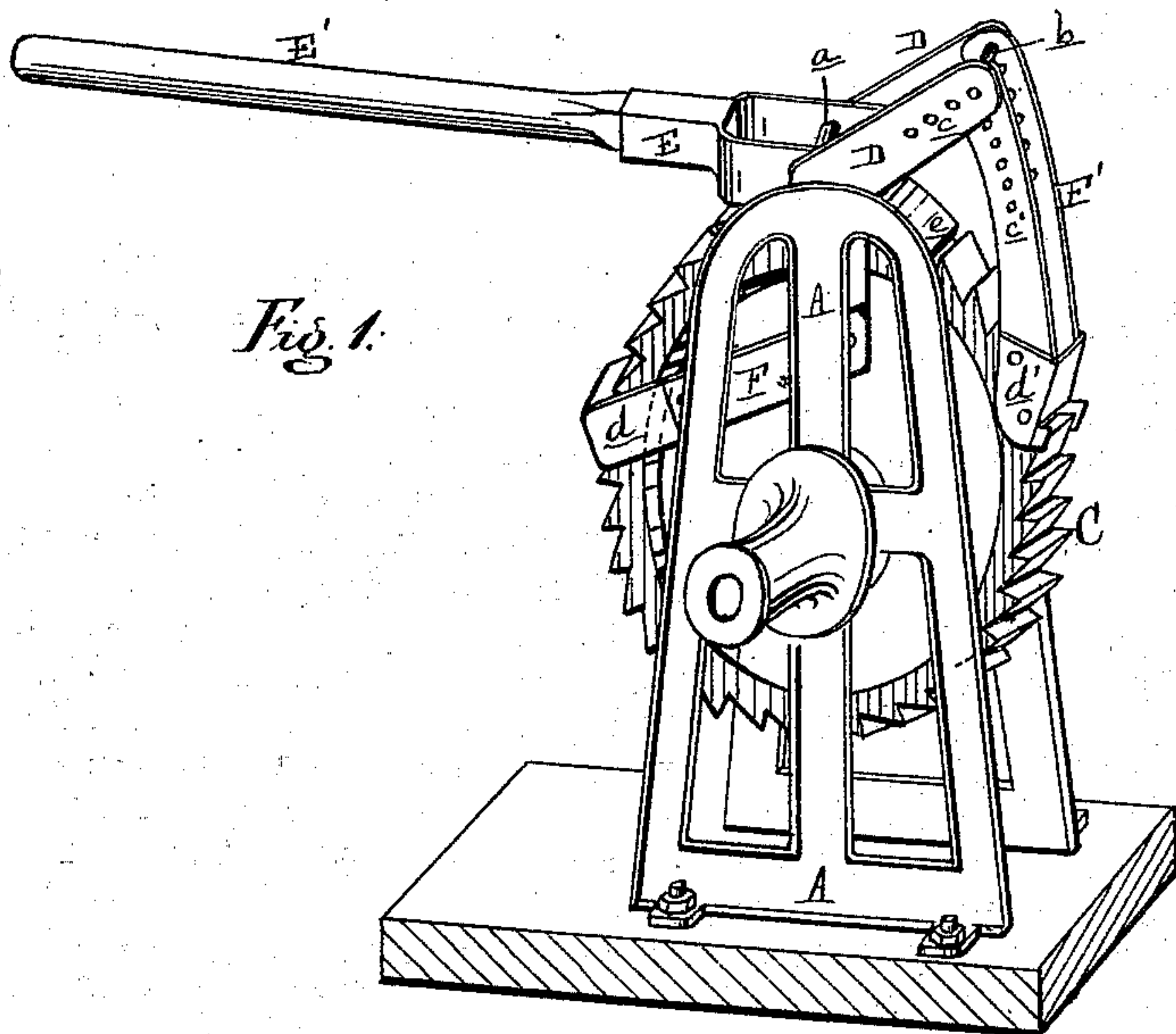
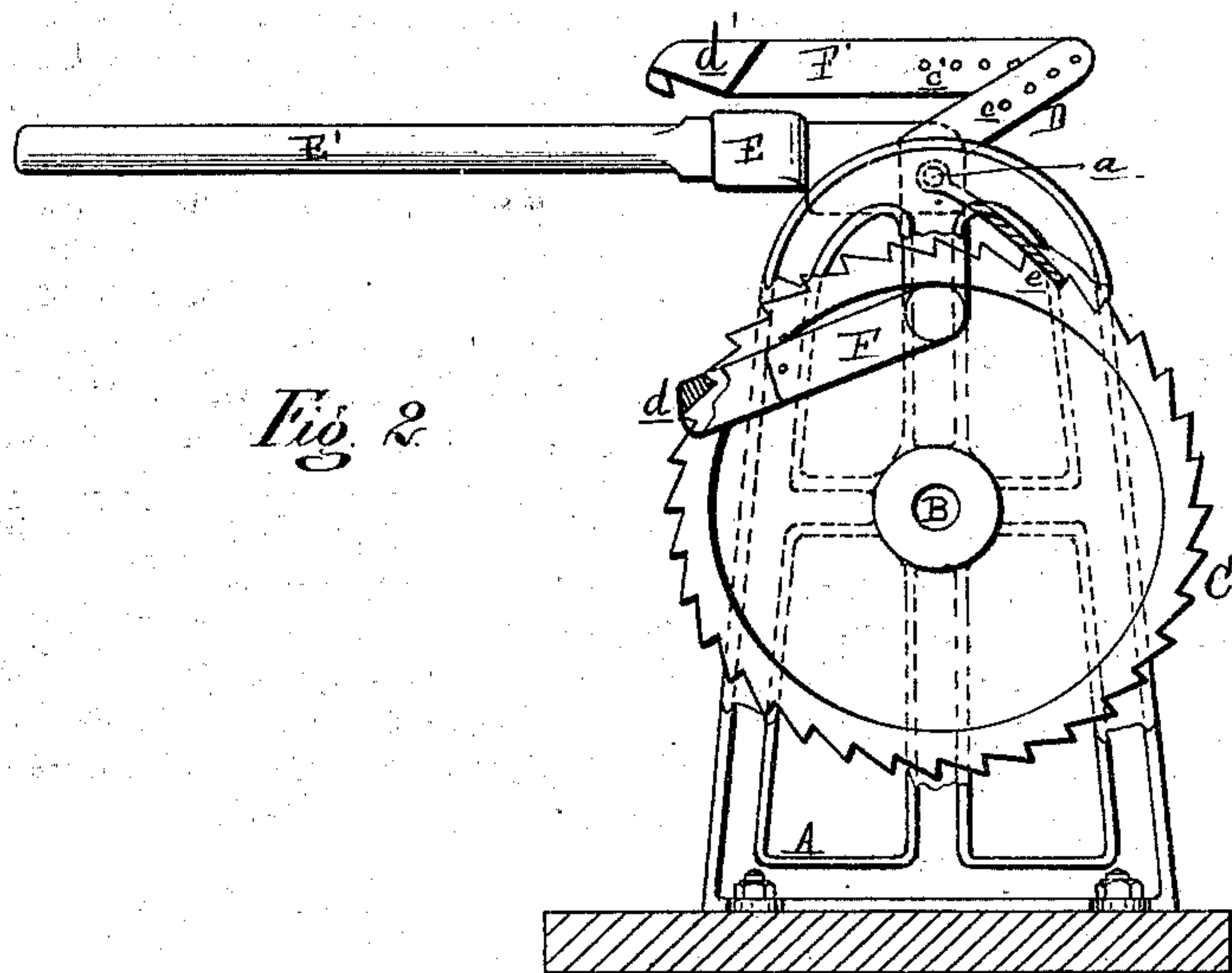


Fig. 2.



Attest:
C. E. Huston
Jm Spalding

Inventor:
T. L. Hubbard
per Attorney
Thos. Sprague

UNITED STATES PATENT OFFICE.

THEODORE L. HUBBARD, OF PORT HURON, MICHIGAN.

IMPROVEMENT IN SHIPS' WINCHES.

Specification forming part of Letters Patent No. **152,639**, dated June 30, 1874; application filed April 14, 1874.

To all whom it may concern :

Be it known that I, THEODORE L. HUBBARD, of Port Huron, in the county of St. Clair and State of Michigan, have invented an Improvement in Ships' Winches, of which the following is a specification :

The nature of this invention relates to an improvement in winches of that class which have a single ratchet-wheel. The shaft upon which the ratchet-wheel is mounted has a continuous rotary motion during the oscillation of the brakes or hand-levers; and my invention consists in so constructing and arranging the pawls as that their leverage can readily be changed as circumstances may require.

Figure 1 is a perspective view of my winch with a portion of the framing broken away. Fig. 2 is a side elevation, showing one of the lever-pawls thrown up so that the device can be used as an ordinary single-acting winch.

In the drawing, A represents the frame, flanged at the bottom to be bolted to the deck. B is the shaft, transversely journaled through the frame, carrying a wooden spool at each end; at its middle is secured a ratchet-wheel, C. D D is a pair of plates, pivoted by a bolt, *a*, to the apex of the frame, the bolt passing through the middle of each plate, which is in the form of an obtuse angle. E is a crotch socket, bolted or riveted to and between the plates. In the socket is inserted a lever or brake, E'. The socket is inclined or tangent to the top of the ratchet-wheel. A second brake-socket may be added, if desired. F F' are two pairs of plates, pivoted by pins *b* to the outer ends of the plates D. The latter have several pin-holes, *c*, through their ends, through which the pins *b* may be passed to shorten the throw of the plates F F', increasing the leverage in a corresponding ratio. The plates F F' are also provided with holes *c'*, to raise their lower ends when the throw is shortened. *d* is a dog, embracing and bolted to the lower ends of the plates F, to engage with the ratchet-teeth. *d'* is a similar dog on the lower ends of the plates F' for the same purpose.

When the brake is depressed the dog-plate F, engaging with the ratchet-teeth, draws them upward and forward, while the dog-plate F' serves as a pawl to prevent any retrograde movement of the ratchet. When the lever is raised the dog-plate F' pushes down upon the tooth of the ratchet with which it is engaged, rotating the ratchet, while the dog-plate F serves as a pawl to prevent its retrograde movement, so that the ratchet is rotated in both the up and down strokes of the lever, whereby sails can be hoisted, peak and throat at once, reefs taken, center-boards hoisted, and many other kinds of work be done aboard ship easily and very expeditiously. As the work changes from light to heavy, the leverage can be readily changed to suit the requirements while the work is being done. For this purpose a pawl, *e*, is pivoted on the bolt *a*, to hold the ratchet while the leverage is being shifted; it is also necessary when the device is used as a single-gearred winch, which is done by throwing the plate F' over onto the lever, as seen in Fig. 2.

I do not claim, broadly, a winch operated by a pulling and pushing pawl actuated by a reciprocating lever; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with the ratchet-wheel C and shaft B, journaled in the frame A, of the angular plates D, pivoted in said frame by the bolt *a*, and provided with pin-holes *c*, to vary the throw of the plates F F', the lever-socket E, and the dog-plates F F', pivoted to the ends of the plates D, and provided with pin-holes *c'*, corresponding to the pin-holes *c* in plates D, the several plates being constructed and arranged to operate substantially as and for the purpose set forth.

THEODORE L. HUBBARD.

Witnesses :

H. F. EBERTS,
C. E. HUESTIS.