

(No Model.)

H. L. BENNETT & R. B. ADAMS.
POWER WINDLASS.

No. 486,073.

Patented Nov. 15, 1892.

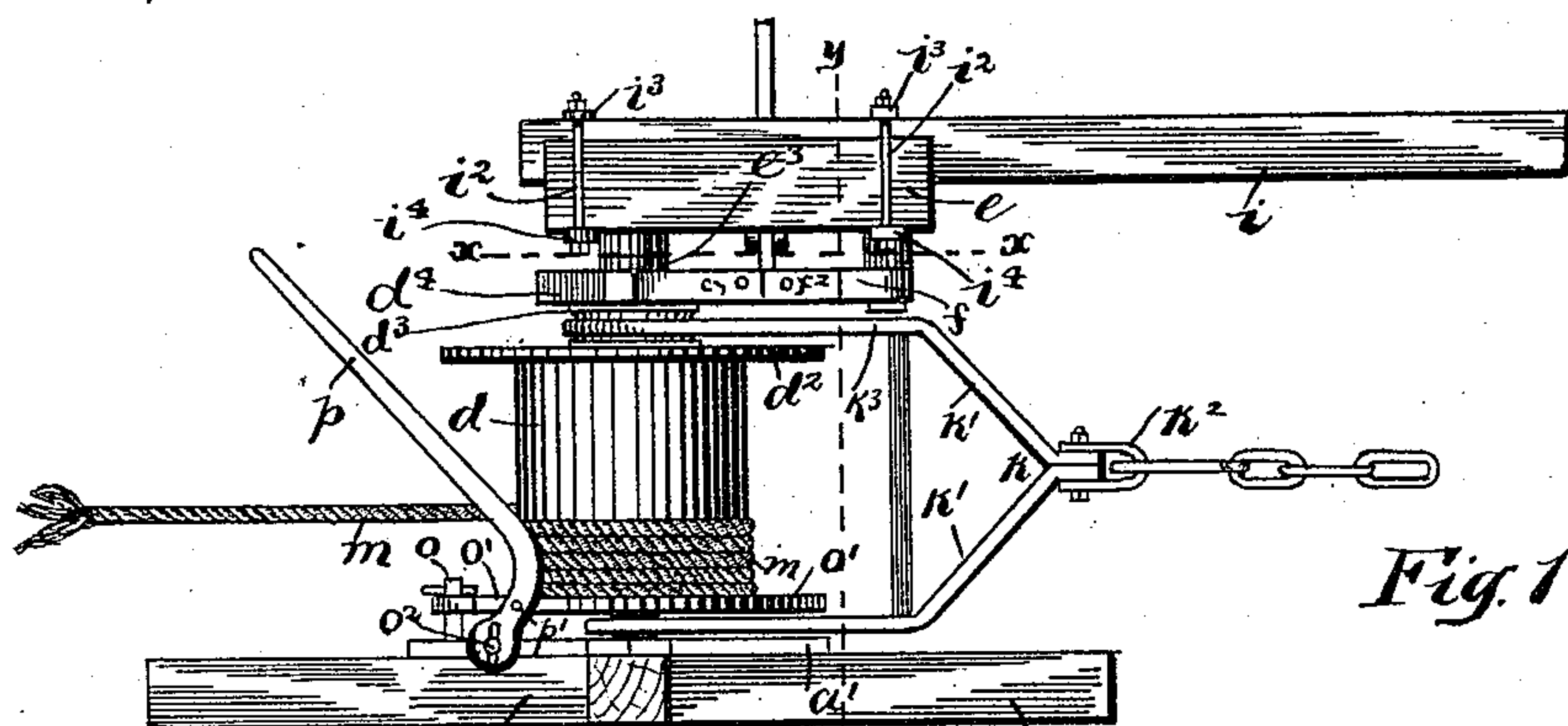


Fig. 1

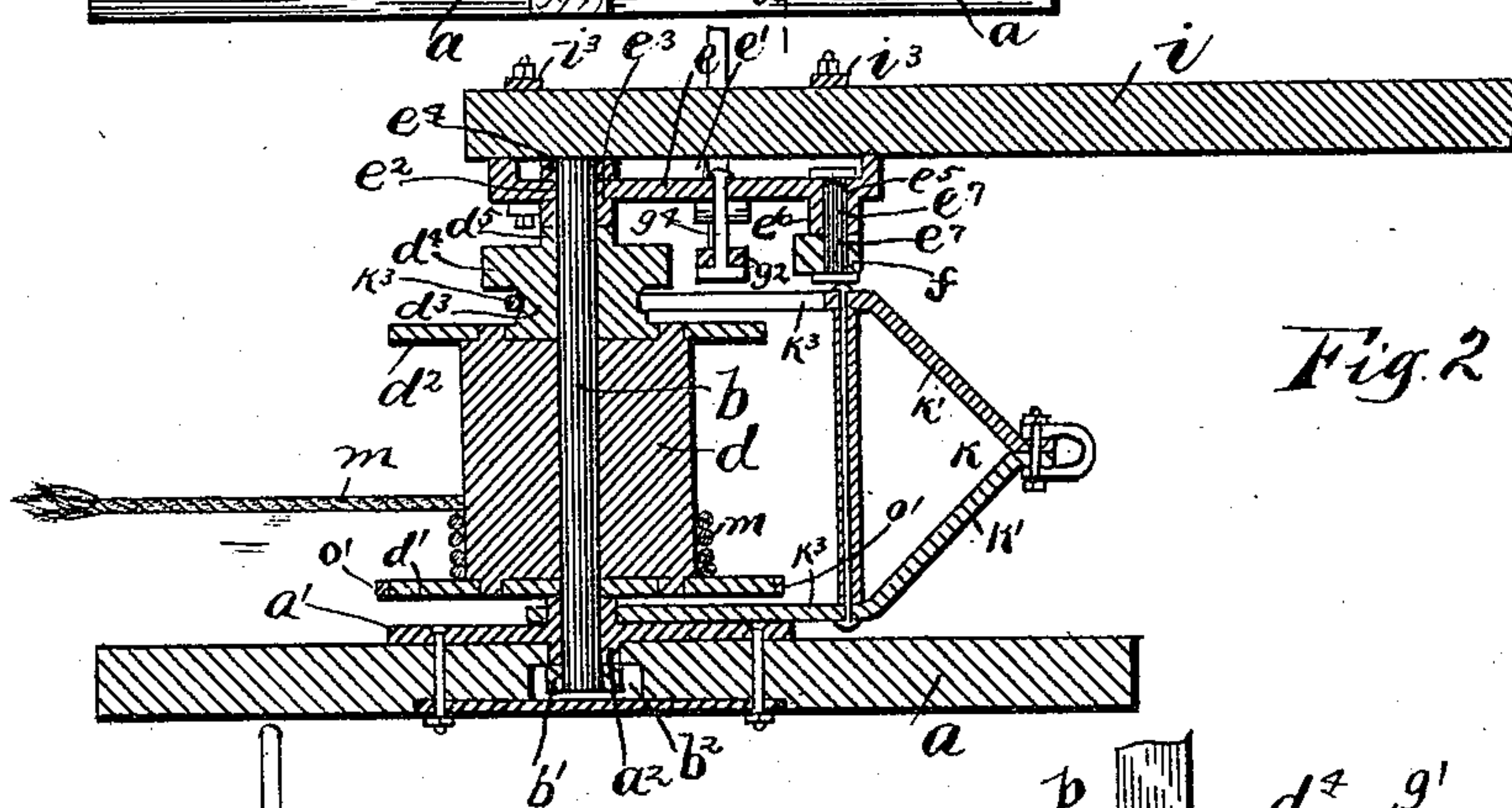


Fig. 2

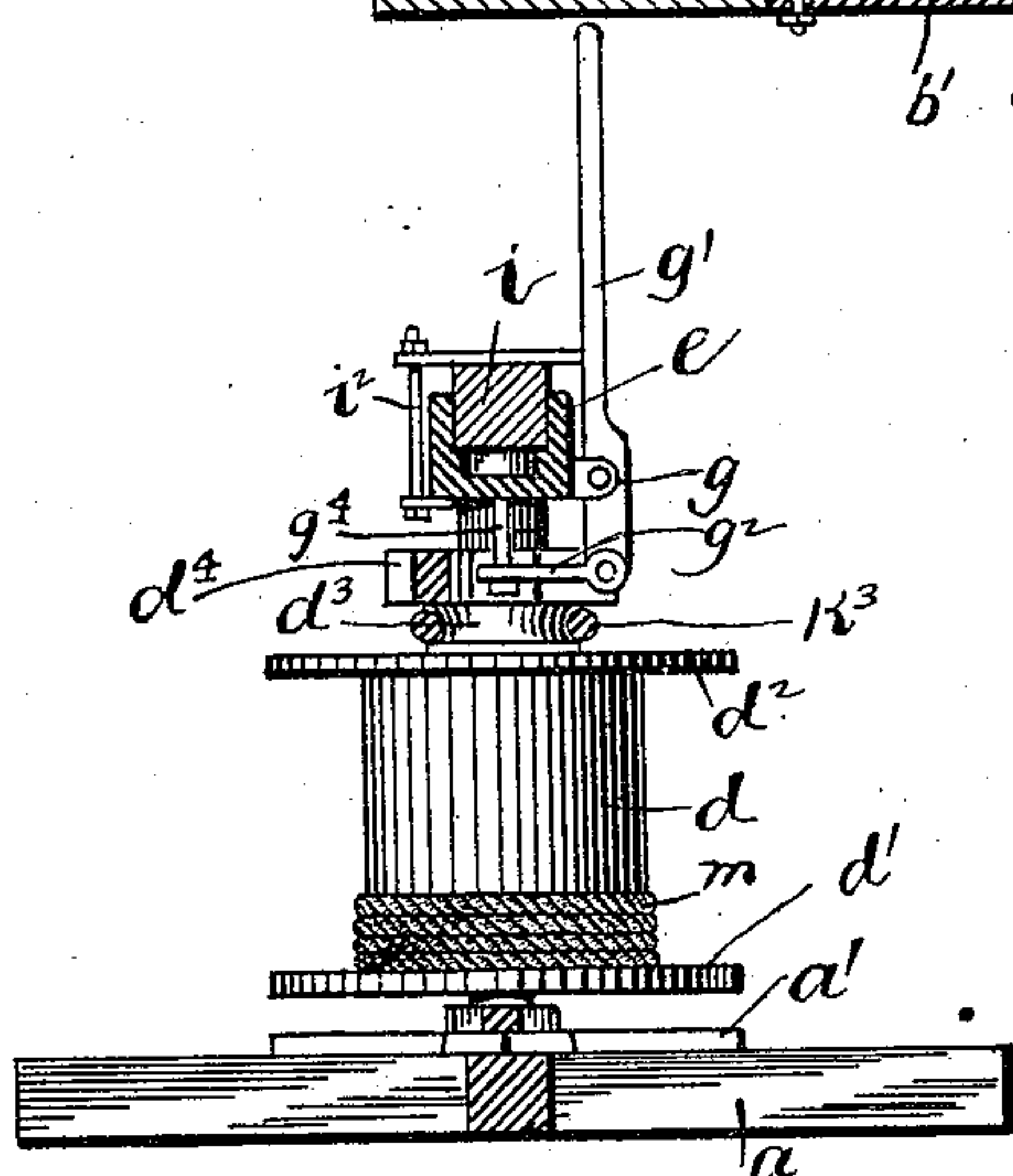


Fig. 4

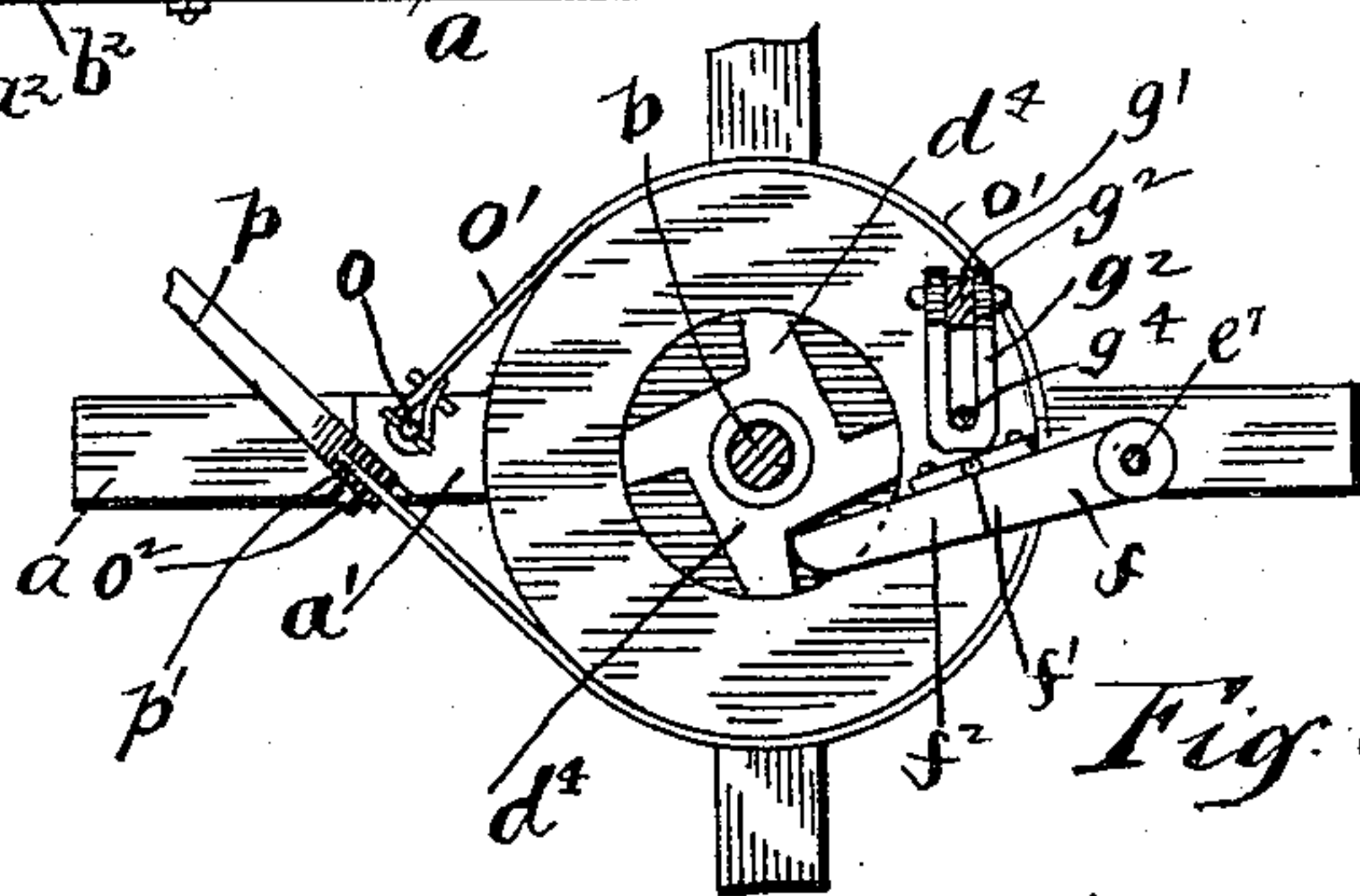


Fig. 3

Witnesses
H. B. Bradshaw
E. C. Bragg.

Inventors:
Harwell L. Bennett
Russell B. Adams
By their Attorneys
Staley and Shepherd.

UNITED STATES PATENT OFFICE.

HARWELL L. BENNETT AND RUSSELL B. ADAMS, OF WESTERVILLE, OHIO.

POWER-WINDLASS.

SPECIFICATION forming part of Letters Patent No. 486,073, dated November 15, 1892.

Application filed April 2, 1892. Serial No. 427,453. (No model.)

To all whom it may concern:

Be it known that we, HARWELL L. BENNETT and RUSSELL B. ADAMS, citizens of the United States, residing at Westerville, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Power-Windlasses, of which the following is a specification.

Our invention relates to the improvement of power windlasses or reels of that class which are adapted for use in extracting stumps or moving heavy bodies.

The objects of our invention are to provide a simple, reliable, and effective device of this class of superior construction and arrangement; to provide a powerful yet easy-running windlass which comprises but comparatively few parts and which may be produced at a reasonable cost of manufacture; to provide superior means for releasing and admitting of the reversal of the reel when the reel-rope is under tension; to provide an improved brake for said windlass, and to produce other improvements, which will be more specifically pointed out hereinafter. These objects we accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of our improved windlass, showing the outer portion of the beam broken away. Fig. 2 is a central vertical section of the same. Fig. 3 is a transverse section on line $x x$ of Fig. 1, and Fig. 4 is a vertical section on line $y y$ of Fig. 1.

Similar letters refer to similar parts throughout the several views.

As indicated in the drawings, a suitable windlass-base is provided, which is shown at a . Upon this base is secured a suitable bearing-plate a' , which is provided with a central hollow hub or boss a^2 . The lower portion of this boss a^2 is seated within a correspondingly-shaped opening a .

b represents a central pin or shaft, which, as hereinafter described, operates to form a connection between various parts of our improved windlass. The lower portion of this shaft passes loosely through the plate-hub a^2 and has suitably fixed thereon at its lower end a nut or collar b' , which, as shown, is in a depression b^2 in the bottom of the base a and which bears against the lower end of the plate-hub a^2 .

d represents the cylindrical winding spool or reel body, through which passes loosely the shaft b . The body of the spool, which is preferably of wood, is rigidly connected at its lower end with a metallic disk-shaped plate d' of greater circumference than the spool-body, said plate bearing, as shown, upon the upper end of the plate-hub a^2 . The reel body is also provided at its upper end with a fixed top plate, which corresponds in size with the plate d' and which is indicated at d^2 . With the central portion of this top plate d^2 is formed an upwardly-extending neck d^3 , which terminates in a ratchet-wheel d^4 , said ratchet-wheel having a central upwardly-projecting boss or hub portion d^5 , through which passes loosely the shaft b . The neck d^3 is preferably provided, as shown, with a slight peripheral groove.

e represents an oblong channel-plate or beam-supporting box, the floor or bottom portion of which is provided with a longitudinal depression e' . This floor is provided in its depressed portion, near the inner end thereof, with an opening e^2 , about which projects downwardly a fixed hub e^3 , through which passes loosely the upper end of the shaft b , said hub bearing, as shown, upon the hub d^5 of the ratchet-wheel d^4 . The upper end of the shaft b has suitably fixed thereon a nut or collar e^4 , which is seated and fitted within the depression e' of the channel-plate e . The outer end of the channel-plate e is also provided in its bottom portion with an opening e^5 , about which projects downwardly a short hub e^6 and through which passes a vertical pivot pin or bolt e^7 . With this pin e^7 is pivotally connected the outer end portion of one member or section f of a jointed pawl f' . To the end of the pawl-section f is hinged or otherwise jointedly connected, as shown, the remaining pawl-section f^2 . This outer section f^2 of the pawl is, when said pawl-sections are in alignment with each other, adapted, as shown in the drawings, to abut against one of the lugs or teeth of the ratchet-wheel d^4 . Fulcrumed to a suitable projecting lug g on one side of the channel-plate e is a normally-vertical lever-arm g' , which at its lower end beneath its fulcrum-point has pivoted thereto one end of a preferably-U-shaped arm g^2 , which, extending inwardly, has a sliding support upon the en-

larged head g^3 of a vertical pin g^4 , which depends from the under side of the channel-plate e . Within the channel-plate e is supported the inner portion of a power-beam i^5 .

5 This power-beam is preferably connected with said channel-plate by means of vertical tie-bolts i^2 , which serve to connect transverse plates $i^3 i^4$, which bind, respectively, upon the upper side of the beam and the lower side of
10 the channel-plate.

k represents an anchor-yoke, which consists of two diverging arms k' , to the outer and adjacent ends of which is adapted to be secured a suitable anchor-chain k^2 . The inner portions of the arms k' terminate in horizontal extensions k^3 , the looped ends of which pass, respectively, about the neck b^3 and the upper projecting portion of the hub a^2 of the base-plate. The beam i being connected with the
20 channel-plate, a rope m being connected with the spool c at one end and having its remaining end connected with the stump or other object to be moved, and the anchor-chain k^2 being connected with any convenient fixed
25 body, the operation of our improved windlass is as follows:

Rising from a slight extension of the base-plate a' is a suitable pin o , to which is secured one end of a metallic brake-strap o' . Projecting laterally from said extension of the
30 plate a' at a point near the pin o is a side pin o^2 , with which is pivotally connected the lower end of an angular lever p . From the pin o the brake-strap passes about the periphery of the reel-base d' and has its end connected, as
35 shown at p' , with the lever p at the angle of the latter. The outer end of the beam being formed in the arc of a circle, the rotary motion thereof will, through the jointed pawl f' and
40 the contact of the latter with one of the lugs of the ratchet-wheel, result in a consequent rotation of said ratchet-wheel and the reel or spool d , which is connected therewith, thus operating to wind the rope m upon said spool.

45 It is evident that we may omit the use of the anchor-yoke and chain and spike or otherwise secure the base of the machine at the desired point. From the construction herein shown and described it will readily be seen
50 that when it is desired to reverse the motion of the spool to release the rope from strain the pawl f' may be readily thrown out of engagement with the tooth of the ratchet d^4 by exerting an outward pressure upon the lever-
55 handle g' , which in turn will cause said arm g^2 to come into contact with the hinge-point of the pawl-sections, and thus prevent an outward bend or break in the pawl and a consequent disengagement of said pawl with the
60 ratchet. It will be observed that forming the pawl in two jointed sections, as described, this disengagement may be easily effected regardless of the pressure upon the outer end of the pawl. It will be seen that by a downward
65 pressure upon the brake-lever p the brake-

strap o' may be made to exert such binding action upon the periphery of the reel-base as will relieve the reel of a too-rapid movement during its reversal or of any too-sudden jerk or impetus imparted thereto through the
70 strain of the rope at the time of the release of the pawl. It is evident that this brake apparatus might also be employed during the winding process to regulate the speed thereof.

By loosening the nuts of the tie-bolts I^2 it
75 is evident that the beam g may be moved horizontally and refastened with the channel-plate at the desired point, thus admitting of the regulation of the length of the beam to provide for operation within a small area and
80 to increase or decrease the power.

In the construction of our device it will be seen that the shaft b serves merely to connect various parts of said device, and that the majority of the elements of said device being
85 thus arranged upon a common shaft it is evident that an easy mode of construction of the frame is produced and that the same may be manufactured at a reasonable cost of manufacture.
90

From the construction herein shown and described it is obvious that an exceedingly powerful and effective windlass, which will be capable of resisting great strain and the parts of which are so arranged and constructed as to create no undue friction, is
95 produced. It will also be observed that the construction of our improved windlass is such as to admit of the parts thereof being replaced or removed without great labor or expense, and that a durable, effective, and reliable machine of this class may be produced
100 at a reasonable cost of manufacture.

Having now fully described our invention, what we claim, and desire to secure by Letters Patent, is—
105

1. In a power-windlass, the combination of the base-frame, shaft b , connected spool d , and ratchet d^4 , loose on said shaft, beam-supporting plate e and beam therein, and pawl f' ,
110 pivotally connected with said beam-support and adapted to engage with said ratchet-wheel, substantially as specified.

2. In a power-windlass, the combination of the base-frame, a connected spool and ratchet
115 loose thereon, a beam-supporting plate above the same, a beam therein, a pawl f' , formed of two jointed sections, one of said sections being pivotally supported from said beam-support and its remaining section adapted to engage with the ratchet-teeth, and the fulcrumed
120 lever g' and its pivoted pressure-arm g^2 , the latter adapted, as described, to be brought into contact with the hinge-point of said pawl-sections, substantially as specified.

HARWELL L. BENNETT.

RUSSELL B. ADAMS.

In presence of—

C. C. SHEPHERD,

THOS. S. GATES.