

(No Model.)

W. A. WOLFINGER.  
LIFTING JACK.

No. 479,692.

Patented July 26, 1892.

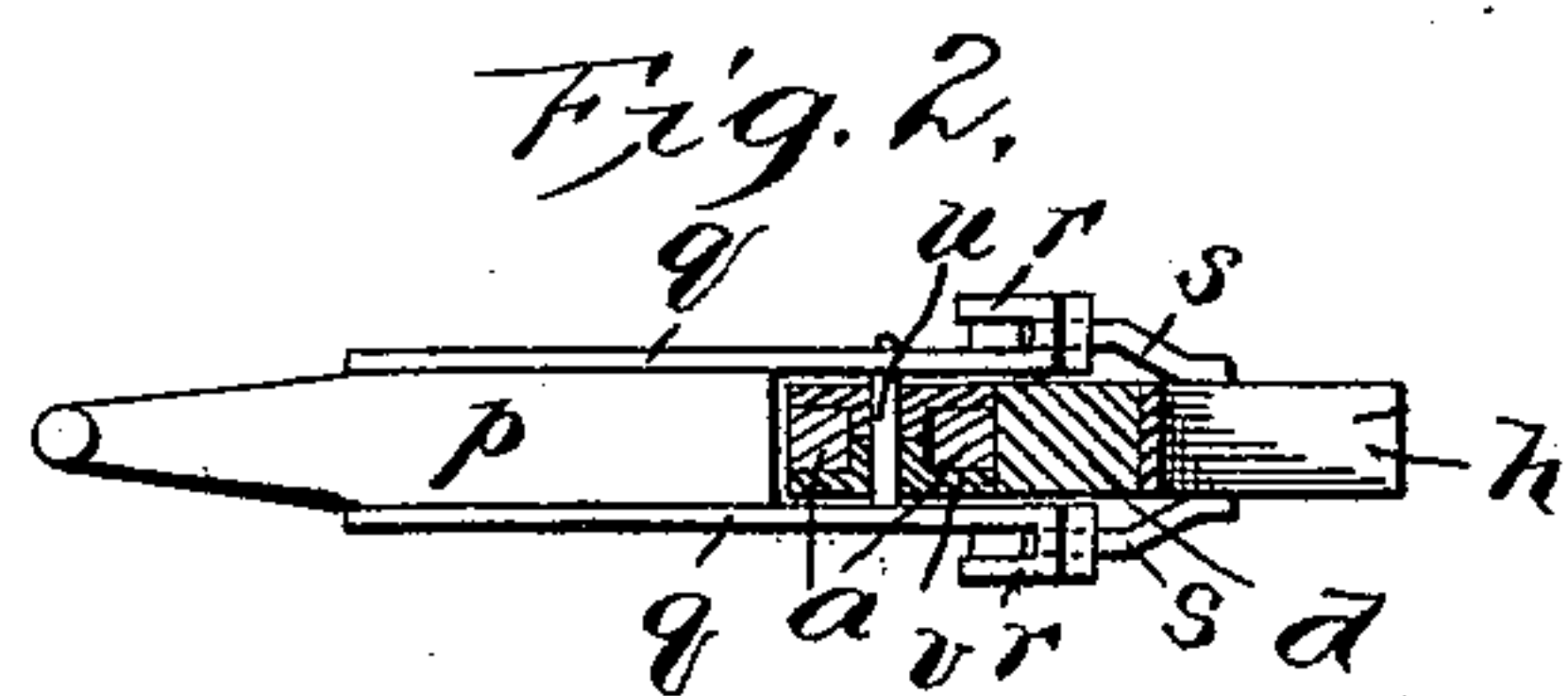
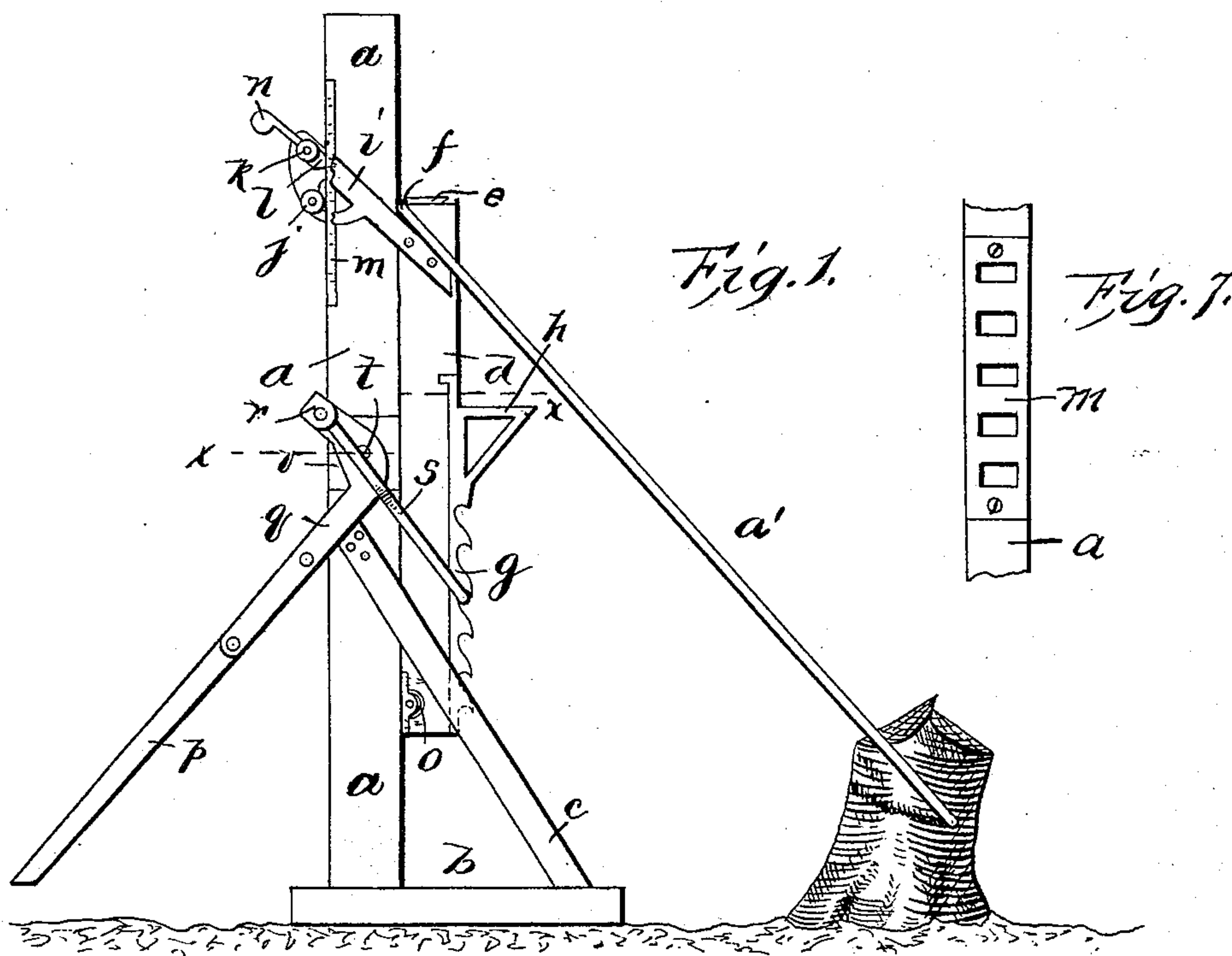


Fig. 3.

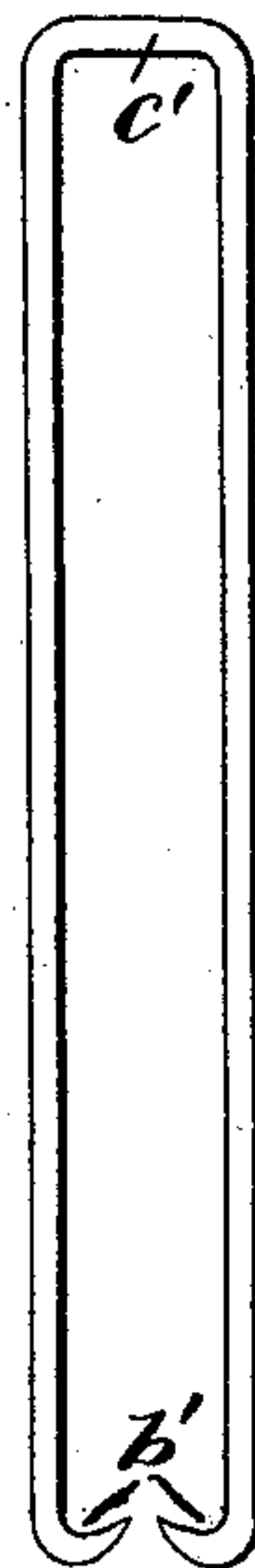


Fig. 4.

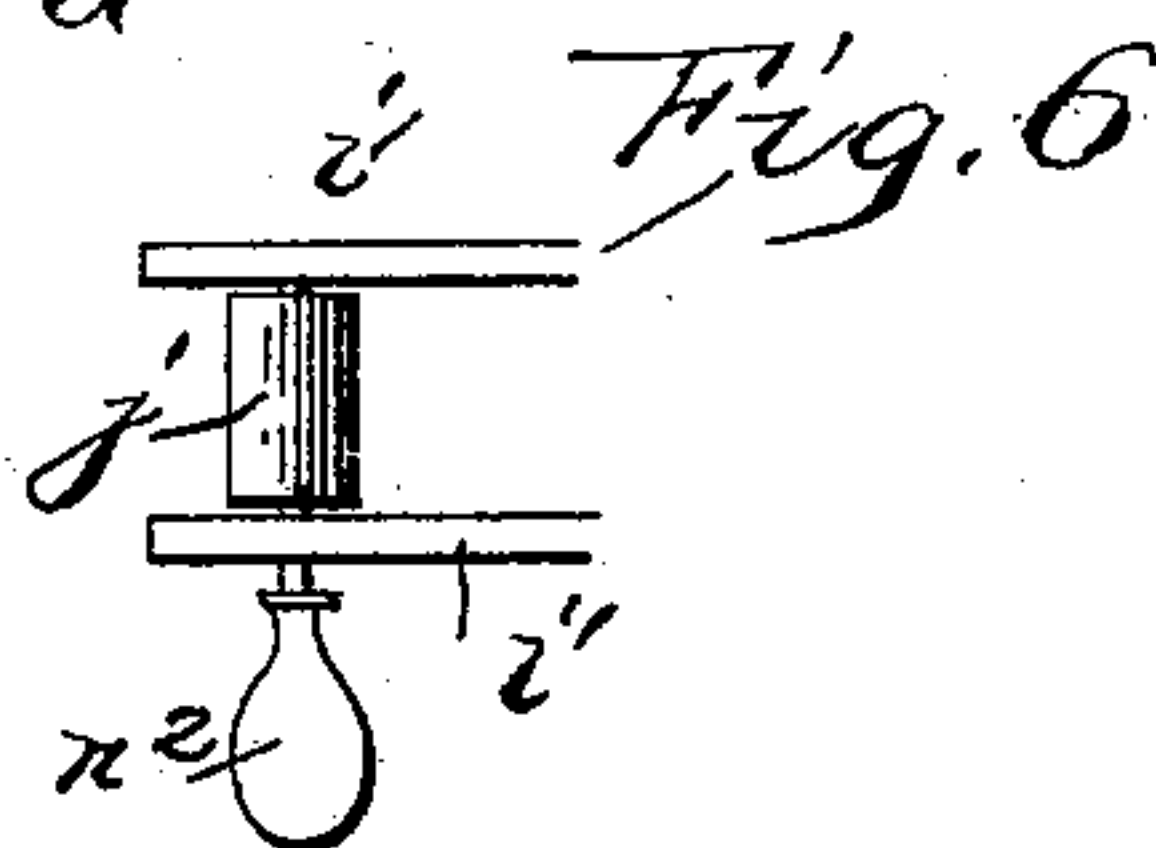
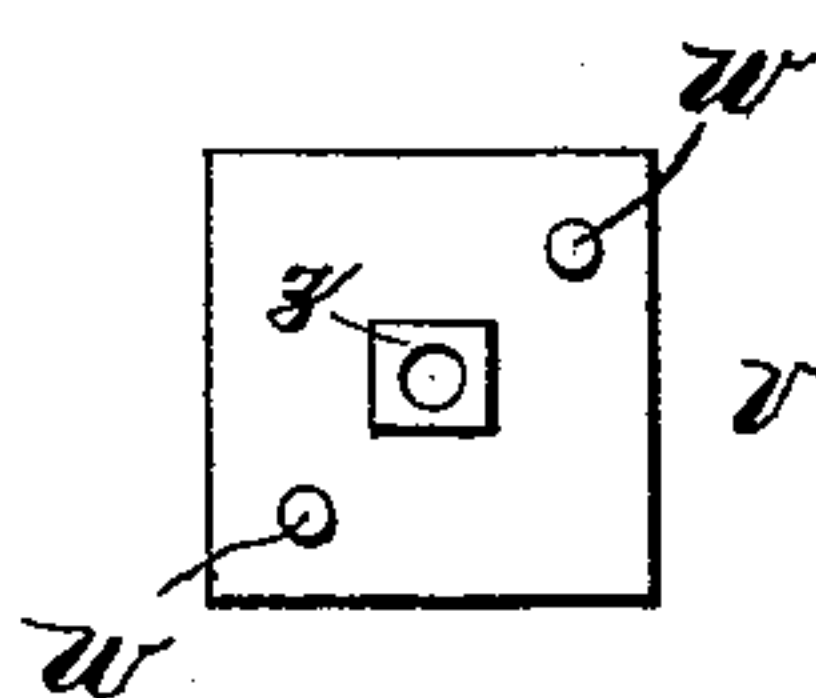
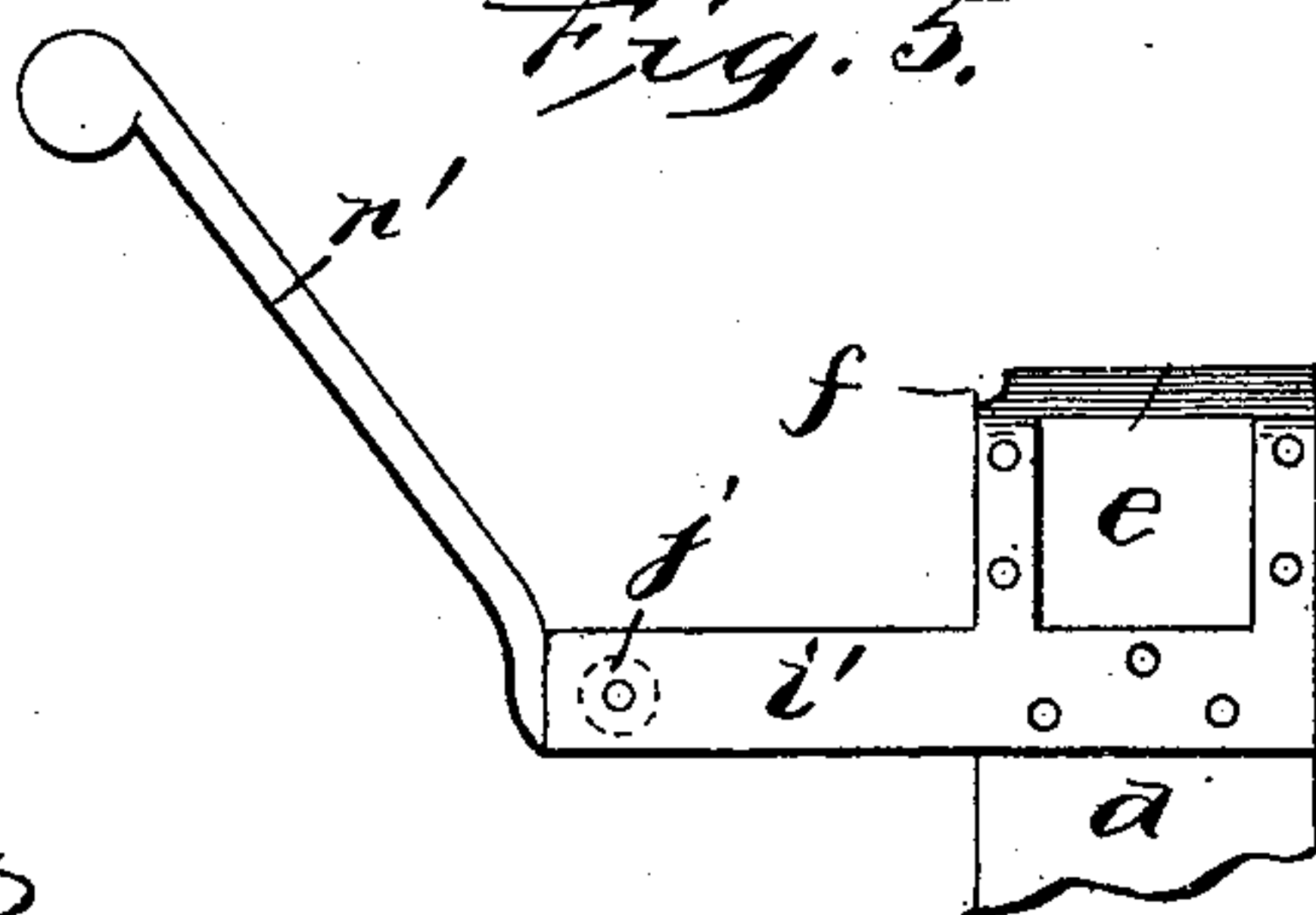


Fig. 5.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM A. WOLFINGER, OF MILTON, PENNSYLVANIA.

## LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 479,692, dated July 26, 1892.

Application filed April 7, 1892. Serial No. 428,161. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. WOLFINGER, of Milton, in the county of Northumberland and State of Pennsylvania, have invented certain new and useful Improvements in Lifting-Jacks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in lifting-jacks.

The object of the invention is to provide an improved lifting-jack exceedingly cheap, simple, and durable in construction and composed of a minimum number of parts.

A further object of the invention is to improve certain details in the construction and arrangements of parts whereby a highly-efficient and most powerful jack is produced.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a side elevation of the jack, part broken away to show the gravity-pawl engaging the rack on the rear edge of the standard, the stump-pulling attachment being shown in position. Fig. 2 is a cross-section on the line  $x x$ , Fig. 1. Fig. 3 is a detail view of the stump-pulling attachment. Fig. 4 is a detail view of the bearing-plate. Figs. 5 and 6 are details showing rigid handles for raising the lifting-bar. Fig. 7 is a detail view showing the apertured rack-bar.

In the drawings, the reference-letter  $a$  indicates the straight strong standard of the jack provided with the horizontal base  $b$ , to which it is strongly secured. The two inclined braces  $c c$  are strongly secured to the outer portion of the base and to opposite sides of the standard.

$d$  indicates the lifting bar or block, sliding vertically between said braces and guided thereby, with its rear edge engaging and sliding in engagement with and guided by the front edge of the standard. The upper end of the lifting-bar is provided with a step  $e$ ,

which step at its inner end is provided with a recess or holding groove  $f$  for the purpose hereinafter set forth.

$g$  indicates a rack-bar rigidly secured to the lower portion of the outer edge of the lifting-block, so that the teeth or recesses thereof are inclined downwardly. The upper end of this rack-bar has the step  $h$  integral therewith. The guide-arms  $i i$  are rigidly secured to opposite sides of the upper portion of the lifting-bar and extend rearwardly on opposite sides of the standard, and at their rear ends behind the standard form bearings for the roller  $j$ , adapted to slide on the rear vertical edge of the standard, and also to form bearings for the combined handle and pawl. This handle and pawl is preferably cast or otherwise formed integral and is mounted near its lower end at  $k$  in the outer ends of arms  $i$ , so that the lower pawl end  $l$  can swing into or form the apertures in the rack-bar  $m$ , rigidly secured to the rear vertical face of the standard. The upwardly-extending end  $n$  forms a handle whereby the lifting-bar can be raised, and this end is preferably provided with a knob to form a hand-hold and also to form a weight to hold the pawl to the rack or away from the rack when the weighted end is thrown against the standard. The rack-bar  $m$  is provided with a vertical series of apertures, and the pawl  $l$  is so formed that it will slide upwardly without holding, but so that it will prevent downward movement of the bar unless the pawl is thrown from engagement with the rack-bar. The lower end of the inner edge of the lifting-bar is provided with a friction-roller  $o$ , adapted to run on the front vertical edge of the standard and act in conjunction with the roller  $j$  at the rear edge of the standard.

$p$  indicates the lifting-lever, provided with the angle or bent plates  $q q$ , rigidly secured on opposite sides of the end of the lever and projecting therefrom on opposite sides of the standard and lifting-bar. The outer ends of these plates are bent upwardly, as shown, and the extremities thereof are bent into loops  $r$ , in which the ends of the lifting-loop  $s$  are pivoted. This loop is U-shaped and at its lower end is formed to engage the teeth of the rack  $g$  and raise the lifting-bar and so that this lifting-loop can slide down freely over the



teeth of said rack to engage a lower tooth, while the pawl *l* holds the lifting-bar. The projecting ends of the plates *q q* are fulcrumed to the sides of the standard at *t* by means of  
 5 a bolt *u*, passed through the standard and through plates *v v*, set in opposite sides of the standard. These plates on their inner faces are provided with studs *w w* to fit in recesses in the standard and with central bosses  
 10 *z*, through which the fulcrum-bolt *u* passes. By this means the bolt is provided with a bearing and support of great strength, and hence the jack can lift very heavy weights and exert great power without splitting the  
 15 wood of the standard, as is the case where the bolt is passed through the wood of the standard without other support or where the plates alone might be used without the inner projections.  
 20 *a'* indicates the grapple or stump-pulling attachment, which preferably consists of a heavy U-shaped rod with its ends bent in and up to form strong hooks *b' b'*. The cross-bar *c'*, or closed end of the attachment,  
 25 fits loosely and removably in the holding-recess *f* at the upper end of the lifting-bar, and the ends of the grapple extend down on opposite sides of the lifting-bar. Hence when  
 30 the lifting-bar is lowered and the hooks of the grapple are given a hold in the body to be raised, and the lever is operated to raise the lifting-bar, the grapple will also be raised, lifting said body with great power. By this  
 35 construction great force and power can be exerted to lift through the medium of the grapple. This feature of the invention is particularly applicable for pulling stumps and like uses.

In Fig. 5 a modification is illustrated where-  
 40 in the handle *n'* is rigid and secured firmly to or formed integral with the arms *i'*. In this modification the handle *n'* extends, preferably, upwardly and outwardly, as disclosed. Fig. 6 shows still a different mode of securing  
 45 the handle. The bolt on which the roller *j'* is mounted is extended beyond one side of the arm *i' i'*, and carries a handle *n<sup>2</sup>*, preferably on the right-hand, as illustrated.

The operation of the invention is obvious,  
 50 for by rocking the lifting-lever the lifting-

bar will be raised a tooth at a time, the pawl holding the bar when the lever is moving down. When the lever is swung to its limit of downward movement, the lifting-link is thrown beyond the center or fulcrum point  
 55 of the lever and the lifting-bar is locked in position with the pawl.

The many and great advantages of this invention are obvious without further explanation. 60

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a lifting-jack, the combination of the standard having the apertured rack at its rear  
 65 edge, the lifting-bar having the rack on its front edge, the lifting-lever fulcrumed to the standard and having the link engaging said lifting-bar rack, the arm rigid with the lifting-  
 70 bar and located on opposite sides of the standard, and the pawl mounted in the ends of said arms to engage said apertured rack and hold the lifting-bar up, substantially as described.

2. In a lifting-jack, the combination of a standard, a lifting-bar having the vertical  
 75 rack, the lifting-lever fulcrumed to the standard and having the link to engage said rack, the rack on the rear edge of said standard, the guide rigid with said lifting-bar and embracing the standard, and a pawl carried by  
 80 said guide and engaging the standard, substantially as described.

3. In a lifting-jack, the combination of the standard having the rack on its rear edge, the lifting-bar having the front-edge rack and  
 85 the arms rigid with its upper portion and extending rearwardly on each side of the standard, the pawl pivoted between said arms to engage said standard-rack, the upwardly-extending handle carried by said arms, and the  
 90 lifting-lever and its lifting-link, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM A. WOLFINGER.

Witnesses:

WILLIAM BARTHOLOMEW,  
 JACOB DIVEL.