

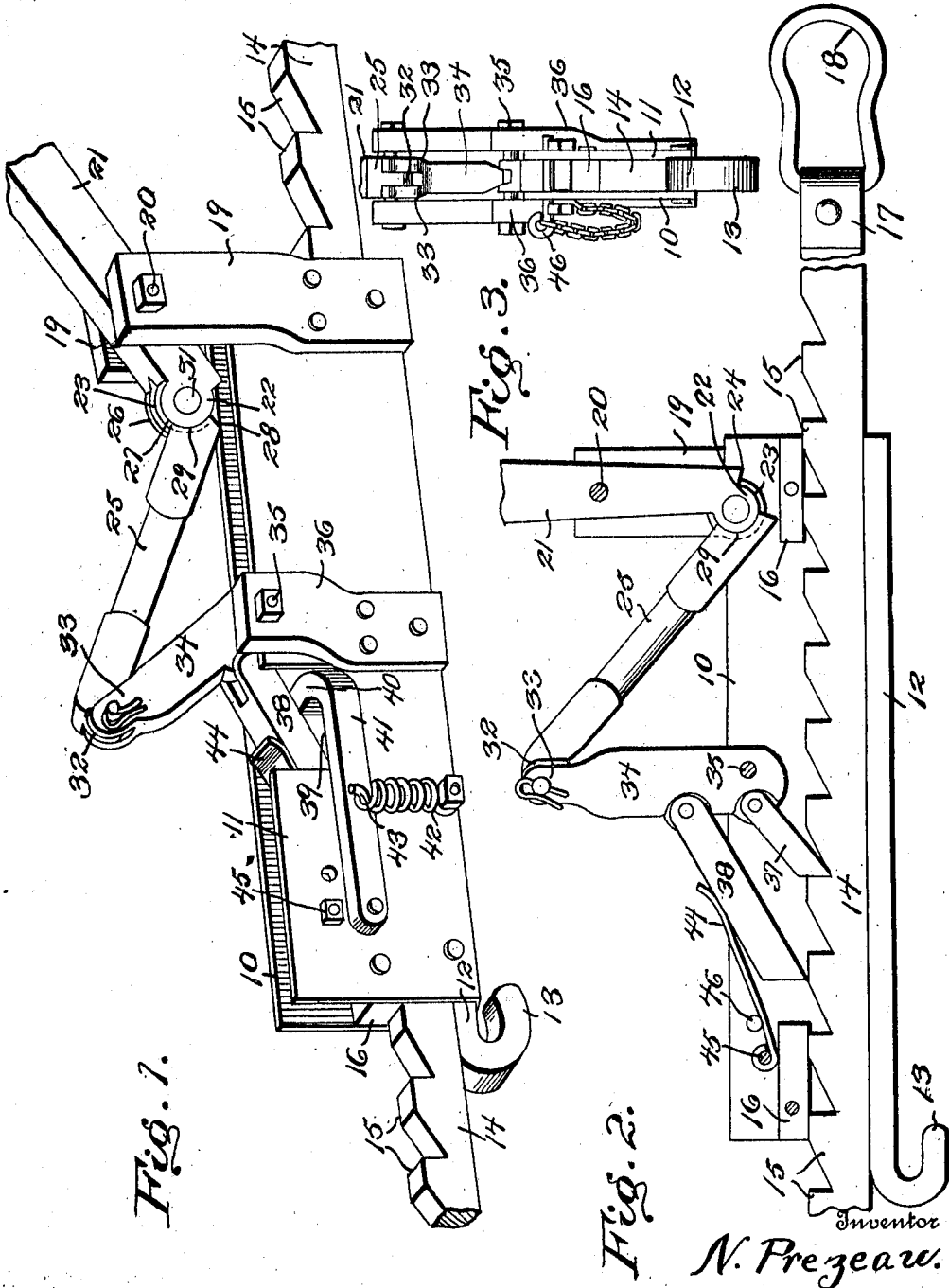
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JACK.

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1,004,465.

Patented Sept. 26, 1911.



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UNITED STATES PATENT OFFICE

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1,004,465.

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To all whom it may concern:

Be it known that I, NAPOLEON PREZEAU, citizen of the United States, residing at Baker city, in the county of Baker and State of Oregon, have invented certain new and useful Improvements in Jacks, of which the following is a specification.

This invention relates to an improved jack, and refers particularly to a machine for moving heavy objects, such as buildings, pulling stumps, or stretching wire.

The invention has for an object to provide a jack of this nature with a double pawl mechanism for feeding the draw bar through the casing of the jack by each movement of the lever.

The invention has for another object to so connect and mount the operating lever as to increase, considerably, the leverage upon the operating pawls so that heavy objects may be moved by the jack with the application of comparatively little power.

The invention still further comprehends a jack which is provided with a simple releasing means for freeing the draw bar so that the same can be extended for the purpose of acquiring a new grip upon the object being drawn.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of the complete jack; Fig. 2 is a longitudinal central section taken vertically through the jack; and, Fig. 3 is an inner end view of the jack.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Referring to the drawing the reference numerals 10 and 11 designate a pair of side plates which are joined at their lower edges by a spacing bar 12. The spacing bar 12 is formed of a relatively thick angular bar which projects beyond the inner ends of the plates 10 and 11 and is curved down to form an attaching hook 13. The bar 12 extends the entire length of the plates 10 and 11 and forms in conjunction therewith a casing or housing for the improved mechanism.

Within the casing is slidably disposed for longitudinal movement a draw bar 14 having rack teeth 15 in its upper edge. The draw bar 14 slidably engages over the upper edge of the spacing bar 12 and is held from upward movement by blocks 16 which are carried between the plates 10 and 11 above the spacing bar 12. The outer end of the draw bar 14 is provided with a strap 17 lapping about the end of the draw bar and hingedly carrying a link 18 to which is attached the object to be moved. The outer end of the casing is provided with a pair of spaced upstanding arms 19 projecting considerably above the edges of the plates 10 and 11. The arms 19 are disposed in registration with one another and hingedly support upon a bolt 20 the lower end of the hand lever 21. The hand lever 21 is provided upon its lower extremity with an edgewise offset web 22 of circular form and which is of a width equal to only one half of the thickness of the lever. The web 22 has its outer face in the plane of one side of the lever while its inner face is continued beyond the perimeter of the web to form an interlocking flange 23. The lower extremity of the lever 21 is provided with an abrupt shoulder 24 formed at the inner edge of the web 22. The lever 21 is connected to a link 25 which is provided with an offset web 26 having a flange 27 adapted to register with and engage against the flange 23 of the web 22. The link 25 is likewise provided upon its extremity with an abrupt shoulder 28 which is formed at the inner edge of the web 26. The lever 21 and the link 25 are each provided with undercut arcuate grooves 29 and 30 to receive the flanges 27 and 23 respectively. The undercut grooves 29 and 30 serve to hold the flanges 23 and 27 against one another and offset the lateral movement of the link 25. A rivet 31 passes loosely through the webs 22 and 26 to pivotally connect the lever and the link.

The outer end of the link 25 is provided with an outwardly extending circular ear 32 which is apertured and adapted for engagement within the fork 33 formed rigidly upon the upper end of the rocker arm 34. The rocker arm 34 depends from the link 25 and is hinged upon the bolt 35 at its lower

end, the bolt being carried through a pair of short arms 36 carried against the opposite sides of the casing.

A short pawl 37 is hinged upon the lower 5 extremity of the rocker arm 34 and extends inwardly and down therefrom to engage with the teeth 15 of the draw bar 14. A long pawl 38 is pivoted upon the rocker arm 34 at a point above the bolt 35 and extends inwardly and down over the short 10 pawl 37 to engage with the teeth 15 of the draw bar inwardly of the pawl 37. The side plate 11 of the casing is provided with an opening 39 to accommodate an inturned 15 finger 40 which is carried upon a tension arm 41 which is pivoted against the outer side of the plate 11 adjacent to its inner end. A spring 42 is secured at its lower end to the plate 11 adjacent to its lower edge 20 while its upper end is attached to a pin 43 projecting outwardly from the tension arm 41 midway of its ends. The spring 42 is employed in normally holding the tension arm 41 down. The inturned finger 40 rests 25 against the upper edge of the short pawl 37 and forces the same down upon the teeth 15.

A leaf spring 44 is carried between the plates 10 and 11 above the inner block 16 and is hinged upon a transverse bolt 45. 30 The outer end of the leaf spring 44 is provided with an upturned lip for the reception of the finger of the operator when it is desired to swing the spring 44 over out of operation. The spring 44 normally rests upon 35 the upper edge of the long pawl 38 to hold the same down upon the teeth 15. A detachable pin 46 is engaged through the plates 10 and 11 and across the upper face of the spring 44 outwardly of the transverse bolt 40 45 to hold the spring down against the pawl 38. The pin 46 is adapted to be detached from the plates when it is desired to release the spring from the pawl.

The operation of the device is apparent 45 since when the lever 22 is vibrated the link 25 is moved back and forth to reciprocate the rocker arm 34. The outward movement of the upper end of the rocker arm 34 moves the lower or short pawl 37 inward 50 against the adjacent tooth 15, effecting the drawing in or movement of the draw bar 14 through the casing. As the rocker arm 34 is moved in the opposite direction the pawl 37 is retracted to register with the next outer 55 tooth of the draw bar while at the same time the upper or long pawl 38 is moved inward against its adjacent tooth 15 to further carry the draw bar 14 through the casing. In this manner the rocker arm 34 alternately 60 reciprocates the pawls 37 and 38 to effect the continuous feeding of the draw bar 14 through the casing. The tension arm 41 retains the short pawl 37 against the teeth 15 while the spring 44 holds the long pawl 34

against the teeth of the rack bar. When it is 65 desired to release the draw bar so that the same can be extended, the pin 46 is withdrawn from the casing and the spring 44 is raised or swung out of engagement with the long pawl 38. 70

The peculiar form of the webs 22 and 26 hold the link 25 from swaying laterally and thus reduce the frictional contact between the pivoted parts and prevents the binding of the same. The shoulders 24 and 28 formed 75 upon the hand lever and the link 25 are adapted to contact when the lever is moved into parallelism with the draw bar 14 so as to limit the swinging movement of the lever. 80

Having thus described the invention, what is claimed is:

1. A jack comprising a casing having spaced side plates a draw bar slidable through the casing and having upstanding 85 teeth, a rocker arm hinged adjacent to its lower end between the side bars above the rack bar, pawls hinged upon the rocker arm at the opposite sides of the pivotal support thereof, a tension arm hinged upon one of 90 the side plates and having an inwardly extending finger projecting through the side plate and resting upon the upper side of the lower pawl, and a leaf spring disposed between the side plates and engaging at its 95 free end upon the upper edge of the upper pawl.

2. A jack comprising a casing having side plates, a draw bar slidable through the casing and having rack teeth, a rocker arm 100 hinged between the side plates, upper and lower pawls hinged upon the rocker arm at the opposite sides of its pivotal support, operating means for rocking the arm, a tension arm hinged against one of the side plates 105 and having an inturned finger projecting therethrough and engaging with the lower pawl, a retractile spring carried by the side plate and engaging with the tension arm to draw the latter down, and a leaf spring carried 110 between the side plates and engaging with the upper pawl to press the same against the rack teeth.

3. A jack comprising a casing having spaced side plates, a rocker arm hinged between the side plates, pawls hinged upon 115 the rocker arm, a draw bar slidable through the casing and having rack teeth cooperating with the pawls, a spring arm hinged against one of the side plates and extending 120 therethrough for engagement with the lower pawl, a leaf spring hinged between the side plates and bearing against the upper pawl to normally hold the same against the rack teeth, and a detachable pin engaging through 125 the side plates and against the spring to normally depress the same against the upper pawl, said pin being adapted to be removed

whereby the spring is swung up from engagement with the pawl to release the same from the rack.

4. A jack comprising a casing, a draw bar
5 slidable through the casing and having teeth
in its upper edge, a rocker arm hinged in
the casing, pawls carried upon the rocker
arm for alternate engagement with the teeth
of the rack bar, a spring operated arm car-
ried against the side of the casing and hav-
10 ing an inwardly extending finger engaging
with the lower pawl, a leaf spring hinged in

the upper portion of the casing, and a detachable pin engaging through the casing and against the upper face of the spring to
yieldingly hold the same down against the
upper pawl. 15

In testimony whereof, I affix my signature
in presence of two witnesses.

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Witnesses:

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