J. M. KELLEY.

ROD PULLING AND CLAMP TIGHTENING DEVICE.

APPLICATION FILED JULY 31, 1916. RENEWED JUNE 7, 1919.

1,309,634. Patented July 15, 1919.

Fig. I.

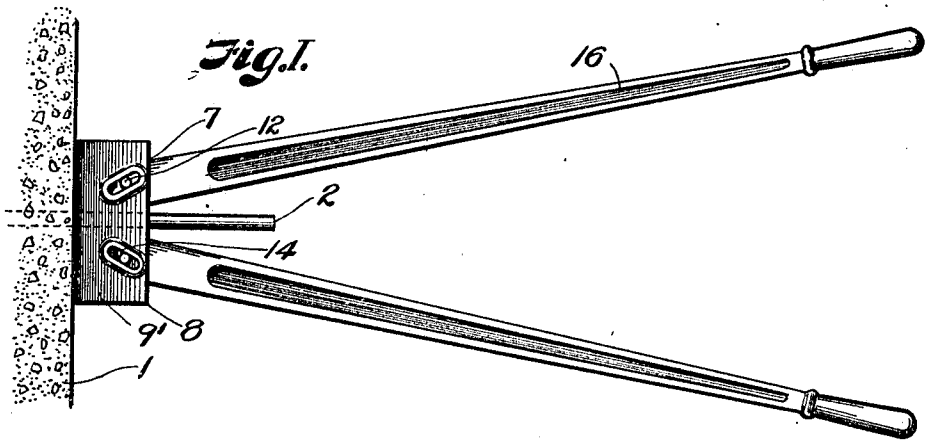


Fig. II

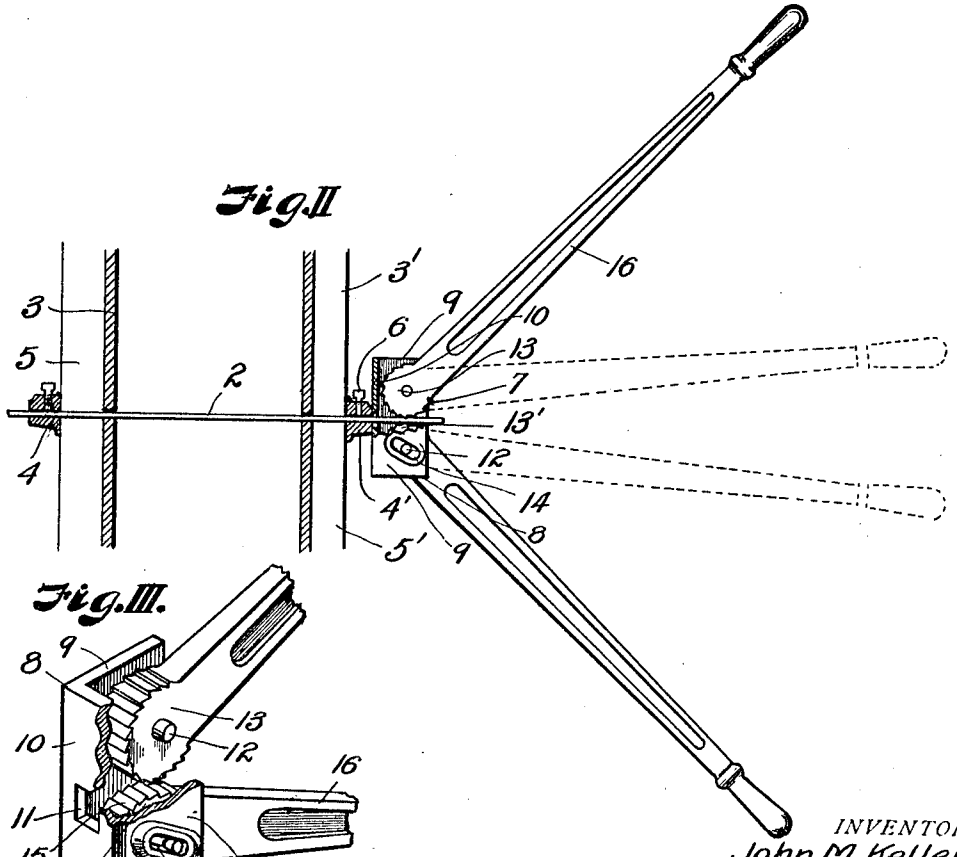


Fig. III.

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ROD-PULLING AND CLAMP-TIGHTENING DEVICE.

1,309,634. Specification of Letters Patent. Patented July 15, 1919.

Application filed July 31, 1916, Serial No. 112,334. Renewed June 7, 1919. Serial No. 302,485.

To all whom it may concern:

Be it known that I, JOHN M. KELLEY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Rod-Pulling and Clamp-Tightening Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 and figures of reference marked thereon, which form a part of this specification.

My invention relates to jacks, or the like, and has for its object to provide a simple and effective mechanism of this character, whereby the members of forms for concrete, or other plastic construction may be drawn together and held in close relation during the pouring and setting of the material within the forms, and which may later be used for pulling the form tie rods from the concrete, after the latter has become set.

It is also an object of the invention to provide such a device that is self-adjustable and will adapt itself readily to rods of various diameters.

In accomplishing these objects I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:—

Figure I is a perspective view of a jack or rod puller embodying my invention, showing the device in position for pulling a tie rod from a wall.

Fig. II is a similar view showing the placing of the device for drawing the form members together prior to the pouring of the concrete.

Fig. III is an enlarged detail persective view of the head block, a part of which is broken away to show the adjustable gripping heads.

Referring more in detail to the drawings:

1 designates a wall, or the like, of concrete or other plastic construction, and 2 a form tie rod, which extends through the wall and serves during the pouring and setting of the concrete to hold the spaced form walls 3—3′ in proper relation and prevent their spreading.

In practice, the form walls 3—3′ are erected and rods 2 placed at intervals necessary for proper tying of the said walls; clamp collars 4, as shown, or of any suitable character, being set and locked at one end of the rods to seat against a form upright 5 and similar clamp collars 4′ loosely placed on the opposite end of the rods and tightened against the form members 5′, by the jack presently described, to draw the form parts to close relation, after which the collar 4′ is locked in position by the tightening of a set screw 6 therein against the rod.

After the concrete has been poured and has sufficiently set, the lugs 4—4′ are removed from the tie rods, so that the form walls may be removed, but it is apparent that the tie rods still remain embedded in the wall.

It is the usual practice of contractors, instead of removing such rods after the forms have been taken down, to cut the ends of the rods off flush with the wall surface, but it has been found that with a proper device these rods may be removed from the wall in condition for further use.

The jack 7 of my improved construction is especially adapted for removing tie rods of this character, and comprises a head block 8 of channel-like construction, having spaced side faces 9—9′ and a connecting face plate 10 provided with a centrally located aperture 11 of sufficient size to receive rods of substantial diameter.

Adjustably mounted between the side plates 9—9′ on pivot pins 12 are rod gripping heads 13—13′, of circular form, the pins being centrally located in the heads so that their ends extend from opposite faces of the heads and project slidably into oppositely disposed slots 14 in the face plates; the slots on each face plate being inclined toward each other at their inner ends so that by moving the heads inwardly or outwardly the latter, due to the inclination of said slots, may be adjusted to adapt the gripping members to the particular size of the rod being used.

Each of the rod gripping heads is provided with serrated gripping faces, comprising teeth 15 that face outwardly at adjacent faces and with extended handles 16, whereby the said heads may be moved to gripping position and rocked on their pivotal mounting to effect the grip on the rod and pull the same from the wall in which it is embedded.

In using the device, the form members are first assembled and the tie rods projected

through the uprights 5. Collars 4 are then slipped over the ends of the rods until they bear against the faces of the cross bars, and one of the collars is fixed in set position by tightening the set screw 6 therein against the rod. A jack 7 is then placed on the opposite end of the rod by slipping the head thereover, so that the rod extends through the base aperture 11 and between the gripping heads 13—13′, the handles being drawn together and the heads moved along the inclined slot bearings until they are seated against opposite sides of the rod.

The handles are then spaced apart and as the teeth grip the rod the head 8 is pushed back on the rod, carrying the collar back and tightening the same against the form.

As soon as the form has been sufficiently tightened the set screw in the collar 4′ is tightened against the rod to lock the collar firmly in place, and hold the form in position.

After the wall has been formed and the concrete has set, the collars are removed and the rods pulled from the walls by placing the jack over the rod, as previously described, and moving the arms outwardly, effecting the grip on the rod and drawing the same outwardly from the wall; the operation being repeated until the rod is removed.

It is apparent that by so constructing the device the individual pivotal movement of the handles 16 permits it to be used in corners or at angles as easily as on straight walls.

It is also apparent that the adjustable mounting of the draw heads permits the device to readily adapt itself to rods of various diameters without the use of adjusting screws, or the like.

It will also be noted that should an unusual amount of power be necessary to draw the rods the power may be required by lengthening the lever.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters-Patent, is:—

A device of the character described, comprising a head block having a base portion and spaced side walls; said base having an aperture therethrough and said side walls having converging slots arranged in converging pairs on opposite sides of a line perpendicular to the base, gripper heads having trunnions slidably mounted in said slots and having handles for turning said heads in their mountings and the heads being serrated about their peripheries, circular relative to the trunnions whereby pressure on the handles forces said serrated surfaces against an interposed body and turns the said surfaces in progressive contact with the body to tighten the heads thereagainst and to move the body oppositely to the movement of the handles.

In testimony whereof I affix my signature.

JOHN M. KELLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."