

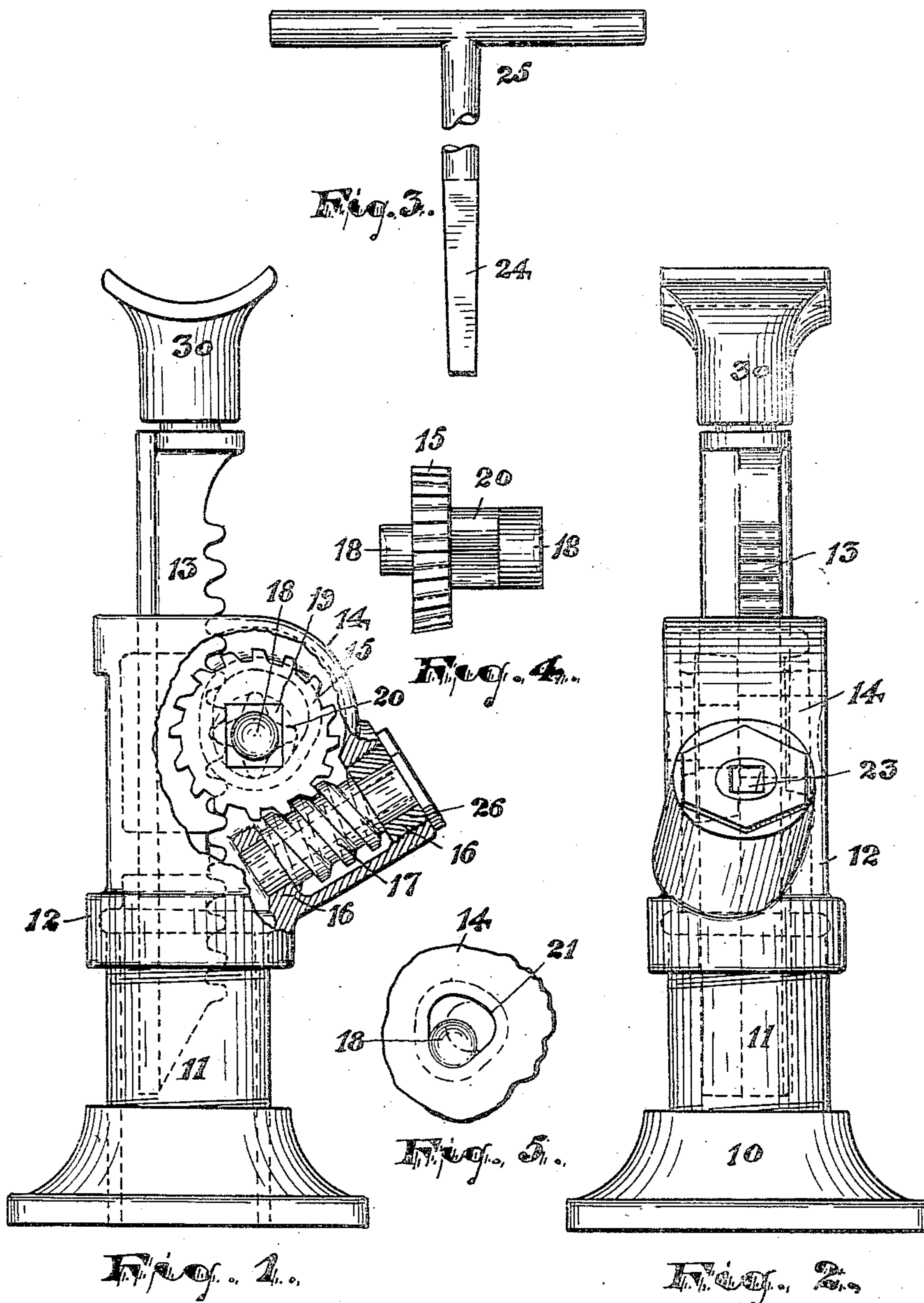
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J. C. BLEVNEY.

LIFTING JACK.

APPLICATION FILED FEB. 5, 1904.



WITNESSES:
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UNITED STATES PATENT OFFICE.

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LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 779,577, dated January 10, 1905.

Application filed February 5, 1904. Serial No. 192,095.

To all whom it may concern:

Be it known that I, JOHN C. BLEVNEY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented and produced a new and useful Improvement in Lifting-Jacks; and I do hereby 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 figures of reference marked thereon, which form a part of this specification.

The objects of this invention are to reduce the cost of constructing lifting-jacks, especially those adapted for raising heavy vehicles to permit the removal, lubrication, or other manipulation of the wheels, to secure a strong and durable and yet simple construction, and to obtain other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved lifting-jack and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like figures of reference indicate corresponding parts in each of the several figures, Figure 1 is a side elevation of the improved device, partly broken away to show the relative arrangement of certain of the working parts more clearly. Fig. 2 is a side elevation of the same. Fig. 3 is a detail view of a certain key or handle by which the lifting devices are operated. Fig. 4 is a detail edge view of a certain gear-wheel and connections, the functions of which will be hereinafter fully explained; and Fig. 5 is a detail side view illustrating one of the bearings for said gear-wheel more clearly.

In said drawings, 10 indicates the base on which the device may stand; 11, a tubular vertical extension of said base, which may be integrally cast or otherwise connected therewith and which is provided with a head-piece 12, in which the vertically-sliding rack 13

and other parts have their bearings. Said head-piece 12 provides an integral box 14 at one side for a gear-wheel 15 and also bearings 16 for a worm-shaft 17, which latter meshes with the gear-wheel 15, as shown in Fig. 1, to effect a slow turning of the same.

The gear-wheel 15 is seated on the shaft 18, being provided with an angular central aperture to receive a correspondingly-shaped portion 19, Fig. 1, of said shaft. Said shaft 18 is preferably a casting, and next to said angular portion thereof it is provided with radial teeth, forming a pinion 20, to engage the rack 13, the said pinion 20 being preferably smaller in diameter than the gear-wheel 15. The opposite ends of the shaft 18 lie loosely in bearings formed at the opposite sides of the box 14, the openings or receptacles 21 for said shaft ends being larger in diameter than said ends and of peculiar conformation, as indicated in Fig. 5, to permit the operations hereinafter described.

The bearings 16 for the worm or screw shaft are arranged or disposed so that said shaft lies at an outward and upward inclination from the line of the rack; and said shaft is provided with an angular aperture 23, Fig. 2, to receive the correspondingly-shaped end 24 of the handle or key 25. The outermost bearing 16 for the screw-shaft is preferably a hollow screw 26, separable from the head-piece and adapted to be removed to permit the insertion or arrangement of the said screw-shaft upon its said bearings.

The relation of the loose shaft 18 and its gear-wheel 15 to the screw-shaft 17 and the vertical rack 13 is such as to permit the rack 13 to slide vertically in its slideways or bearings in the head 12 independent of the screw-shaft, an uplift of said rack causing a rise and laterally-outward movement of the shaft 18 in its open bearings, so that the teeth of the pinion 20 are withdrawn from between the teeth of the rack. Thus the operator may quickly raise the head-piece 30 of the rack into contact with the article to be raised. After thus raising the said rack the weight of the movable parts causes the same to automatically assume their relative operative positions shown in Fig. 1, when by inserting the key or

handpiece in its socket in the screw-shaft the latter may be turned in its bearings, thus transmitting motion from said screw-shaft to the gear-wheel 15, pinion 20, and rack 13 to effect a desired slow but powerful raising.

I am aware that various changes of form and arrangement of parts may be made in the construction without departing from the spirit and scope of the invention, and consequently I do not wish to be understood as limiting myself by all the positive descriptive expressions I have above employed, excepting as the state of the art may require.

Having thus described the invention, what I claim as new is—

1. The improved lifting-jack herein described, comprising a stand having a vertical slideway for a rack and bearings for a screw-shaft and bearings for a shaft having a gear-wheel and pinion, the bearings for the last said shaft permitting a movement upward and away from the rack, a screw-shaft and means for turning the same, a shaft having a gear-wheel and pinion, the gear-wheel meshing with the said screw-shaft and the pinion moving on its shaft with said gear-wheel and meshing with the rack, and said rack arranged in said slideway, substantially as set forth.

2. The improved lifting-jack herein described, comprising a stand having a slideway for a rack and bearings for a screw-shaft and bearings for a shaft having a gear-wheel and pinion the bearings for the last said shaft permitting a movement away from the rack, a screw-shaft and means for turning the same in its bearings, a shaft having a gear-wheel meshing with said screw-shaft and also having a pinion moving thereon with said gear-wheel, said pinion normally meshing with the rack, and said rack arranged in said slideway.

3. The improved lifting-jack herein de-

scribed, comprising a stand having a slideway for a rack and bearings for a screw-shaft and bearings for a shaft having a gear-wheel and pinion, the bearings for the last said shaft permitting a movement away from the rack, an upwardly-inclining screw-shaft and a shaft having a gear-wheel and pinion the gear-wheel meshing with the screw-shaft and moving with the pinion and the pinion normally meshing with the rack, and means for turning the screw-shaft, substantially as set forth.

4. The improved lifting-jack herein described, comprising a stand having a slideway for a rack and a box for inclosing a gear-wheel, pinion and screw-shaft, a rack, an inclined screw-shaft in said box, a gear-wheel arranged above said screw-shaft and adapted to move upward and away from said screw-shaft, and a pinion movable with said gear-wheel and adapted to engage and move away from said rack to permit the latter to slide upward in its bearings, substantially as set forth.

5. The combination with the stand having a vertical slideway for a rack and a box for inclosing a pinion, gear-wheel and screw-shaft, said box providing bearings for an inclined screw, the outer bearing of which is a hollow screw separably arranged in the walls of the box, of said rack, an inclined screw-shaft, and a shaft movable in a direction away from the rack and having a gear-wheel engaging the screw-shaft and a pinion engaging the rack, and means for turning the screw-shaft and raising said rack, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of January, 1904.

JOHN C. BLEVNEY.

Witnesses:

CHARLES H. PELL,
RUSSELL M. EVERETT.