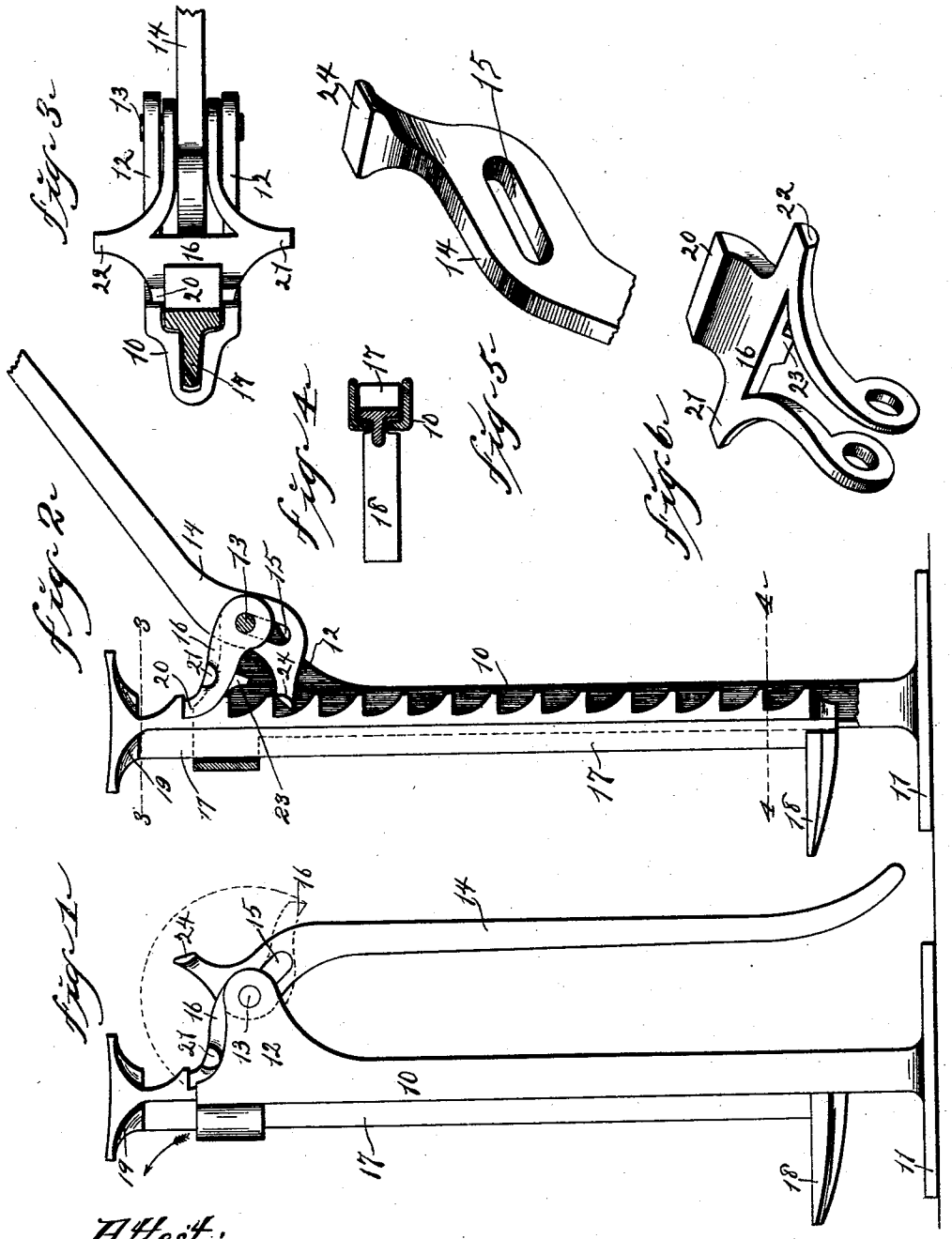
(No Model.) 2 Sheets—Sheet 1.

J. C. HACKETT.

LIFTING JACK.

No. 569,020. Patented Oct. 6, 1896.



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M. P. Smith
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Inventor:
John C. Hackett:
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(No Model.) 2 Sheets—Sheet 2.

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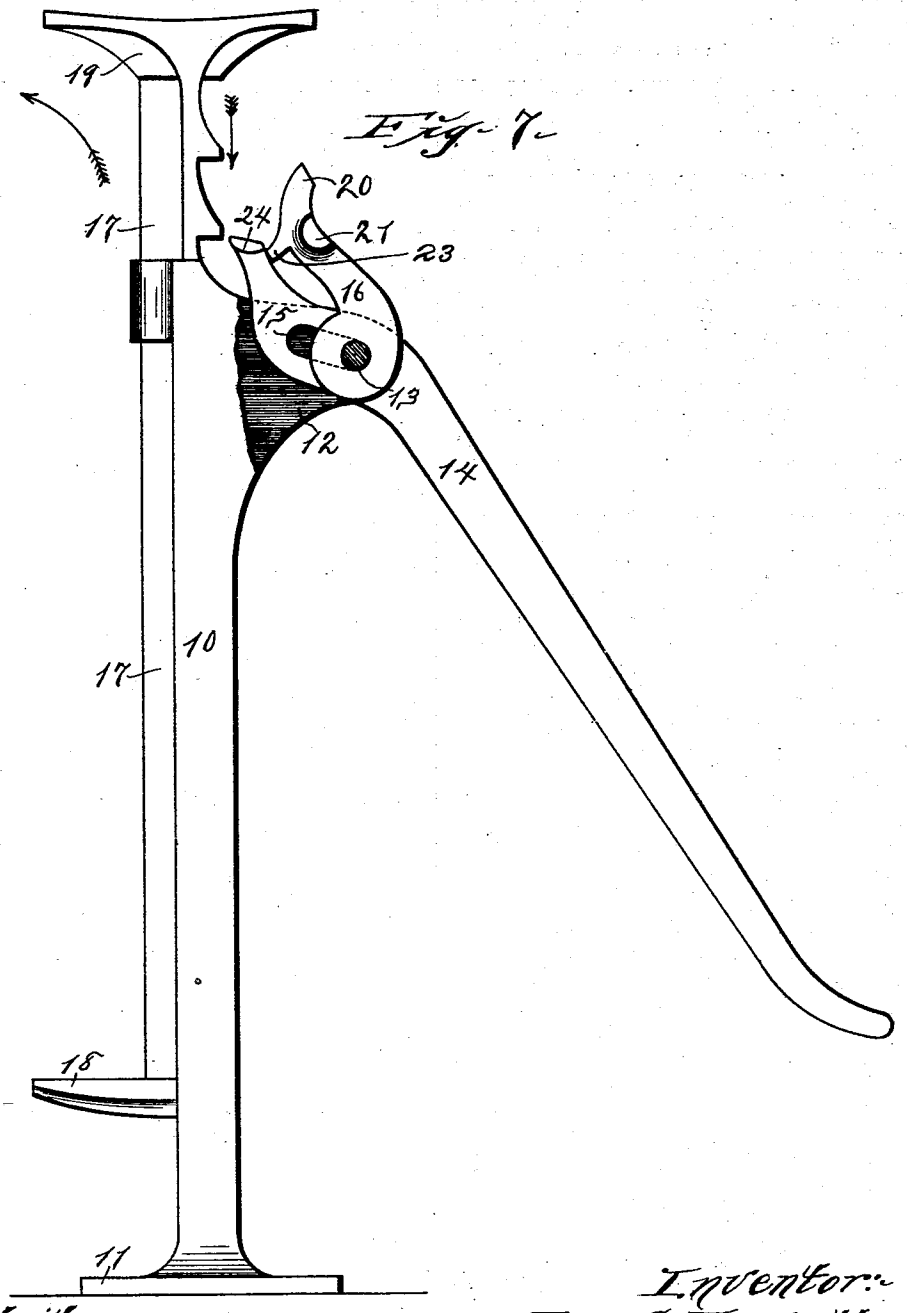

Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN C. HACKETT, OF ST. LOUIS, MISSOURI.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 569,020, dated October 6, 1896.

Application filed April 9, 1894. Serial No. 506,810. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. HACKETT, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

The object of this invention is to provide improved means to be employed as a lifting-jack.

This invention consists in the combination, with a vertically-slotted standard, of a toothed bar, ears projecting from the standard having a pin transversely seated therein, the axis of which pin is the center of the circle of which one side of the notches forming the teeth on the bar is an arc and engaging a detent pivoted on said pin and adapted for engagement with said toothed bar, a lever fulcrumed upon the same pin and having a slot which said pin engages, thereby providing for a sliding connection between the lever and the said pin, the said lever being adapted for engagement with the said toothed bar, and a lug formed on the detent and adapted for engagement by the said lever, whereby the said detent may be lifted out of engagement with the said toothed bar.

My invention consists, further, in the details of construction, arrangement, and combination of parts hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation showing the device at rest, the dotted lines indicating the relative positions of the parts. Fig. 2 is an elevation, partly in section, showing the device in position for use. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 2. Fig. 4 is a transverse sectional view on the line 4 4 of Fig. 2. Fig. 5 is a perspective view of the engaging end of the lever. Fig. 6 is a perspective view of the detent. Fig. 7 is a side elevation, partly in section, showing different positions.

In the construction of the device as shown the numeral 10 designates a standard having a base 11, which standard is vertically slotted. Formed on and laterally extending from the upper portion of the standard 10 are ears 12 12, transversely apertured, and mounted in said transverse apertures in the said ears is a pin 13.

Fulcrumed upon the pin 13 between the ears 12 12 is a lever 14, adapted for manual operation, the said lever being provided with a slot 15 at its point of fulcruming, through which slot the pin 13 passes, the said slot being positioned at an oblique angle relative to the longitudinal axis of the said lever.

Formed upon the pin 13 between the ears 12 12 is a bifurcated detent 16, Fig. 6, the arms of the bifurcation embracing the end portion of the lever 14.

Vertically positioned within the slot in the standard 10 is a toothed bar 17, having a foot 18 and a head 19. The teeth are formed on that side of the bar 17 adjacent to the ears 12 12, and the teeth each have one curved and one flat side.

Formed on and extending forwardly and upwardly from one end of the detent 16 is an engaging portion 20, which said engaging portion has a flat upper surface and a curved under surface and corresponds in cross-section with the shape of the notches between the teeth.

Formed on and extending laterally from the detent 16 are lugs 21 22, adapted for engagement with the upper edges of the ears 12 12, whereby the said detent is prevented from falling between said ears. Formed on and extending downwardly from the detent 16 is a lug 23, which said lug is adapted for engagement by the lever 14 for a purpose hereinafter to be made plain.

Formed on and extending forwardly and upwardly from the inner end of the lever 14 is an engaging portion 24, Fig. 5, of greater transverse dimension than the said lever, which said engaging portion is provided with a flat upper surface and adapted for engagement with the lower surfaces of the teeth on the bar 17.

In the practical use of this invention when it is desired to elevate the bar 17 the parts are placed in position, as shown in Fig. 2, and manual force applied to the outer end of the lever 14, thereby causing the inner end of said lever, or the engaging portion thereof, to engage with one of the teeth on the bar 17, the pin 13 being positioned in the upper end of the slot 15. The depression of the outer

end of the lever 14 results in the proportionate elevation of the engaging portion 24 of said lever, which, engaging with a tooth on the bar 17, elevates said bar. During the continuation of the operation of the lever 14 the extremity of the engaging portion 24 contacts with the bar 17, and a horizontal radius from the axis of the pin 13 to the toothed bar being of less length than an oblique radius between the same points it follows that such engagement with the toothed bar necessitates an approximately longitudinal movement on the part of the said lever, thus differentiating the relative positions of the slot 15 and the said pin. During the continuation of the actuation of the lever 14 the engaging portion 24 thereof impacts with the lug 23 on the detent 16 and lifts said detent.

If it be desired to further continue the elevation of the toothed bar 17, the actuation of the lever 14 should be reversed immediately upon the contact of the engaging portion 24 of said lever with the lug 23; but if it be desired to permit the toothed bar to descend the first movement of the lever 14 is continued after the impact thereof with the said detent, which movement will result in the elevation of the said detent out of engagement with and out of the vertical plane of the said toothed bar into the position shown by dotted lines in Fig. 1, at which time the engaging portion 24 of the said lever is also out of engagement with the said toothed bar, as shown by solid lines in Fig. 1, and said bar is in condition for gravitation to a normal seat.

If it be desired to retain the toothed bar in an elevated position, the detent 16 is permitted to engage with one of the teeth of said bar and hold the same, the lever 14 being moved transversely of its fulcrum and permitted to assume a depending position, as shown by solid lines in Fig. 1, thus providing a compact, conveniently-operating, and desirable lifting-jack.

In the event of the toothed bar 17 being broken, and it being desired to replace the same by a new one, the lever 14 is positioned as shown in solid lines in Fig. 1 and the detent in the position shown by dotted lines in said figure, and the said toothed bar manually lifted and turned in the direction of the arrow in Fig. 1 until the foot 18 is free from the slot in the standard 10, a new bar being positioned by an opposite movement.

What I claim is—

1. In a lifting-jack, the combination of a standard, ears formed on and transversely extending from said standard, a toothed bar mounted within said standard, a pin transversely seated in said ears, a bifurcated detent fulcrumed upon said pin, and a lever provided with a slot and fulcrumed upon the same pin that the bifurcated detent is fulcrumed upon, said lever being located between the bifurcated arms of the detent, the point of the lever being adapted to engage with the teeth of the vertical bar mounted within the standard.

2. A lifting-jack, comprising a vertically-slotted standard, a toothed bar provided with a head and foot and mounted for reciprocation in said standard, ears formed on, and extending transversely from, the upper portion of said standard, a pin transversely seated in said ears, a bifurcated detent pivoted upon said pin and provided with an engaging portion adapted for contact with the toothed bar and with lugs adapted for engagement with the said ears, a lever, provided with a slot arranged obliquely to its longitudinal axis, mounted upon said pin and having an engaging portion adapted for engagement with the toothed bar, and a lug formed on the said detent and adapted for engagement by the engaging portion of the said lever, as set forth.

3. The combination in a lifting-jack, of a toothed bar mounted for vertical reciprocation, a single transverse pin, a bifurcated dog, or detent, mounted upon said pin and having opposite projections 21, 22, which rest upon the standard of the jack and assist in supporting the load, said detent having a downwardly-projecting lug 23, and a lever mounted upon the same pin that said dog, or detent, is mounted upon and located in the bifurcation of said dog, or detent, with one of its ends in a plane below said downwardly-projecting lug 23, whereby when the outer end of said lever is depressed the inner portion thereof will engage the downwardly-projecting lug and lift said dog, or detent, out of engagement with said toothed bar, substantially as herein specified.

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

JOHN C. HACKETT.

Witnesses:
M. G. IRION,
JNO. C. HIGDON.