

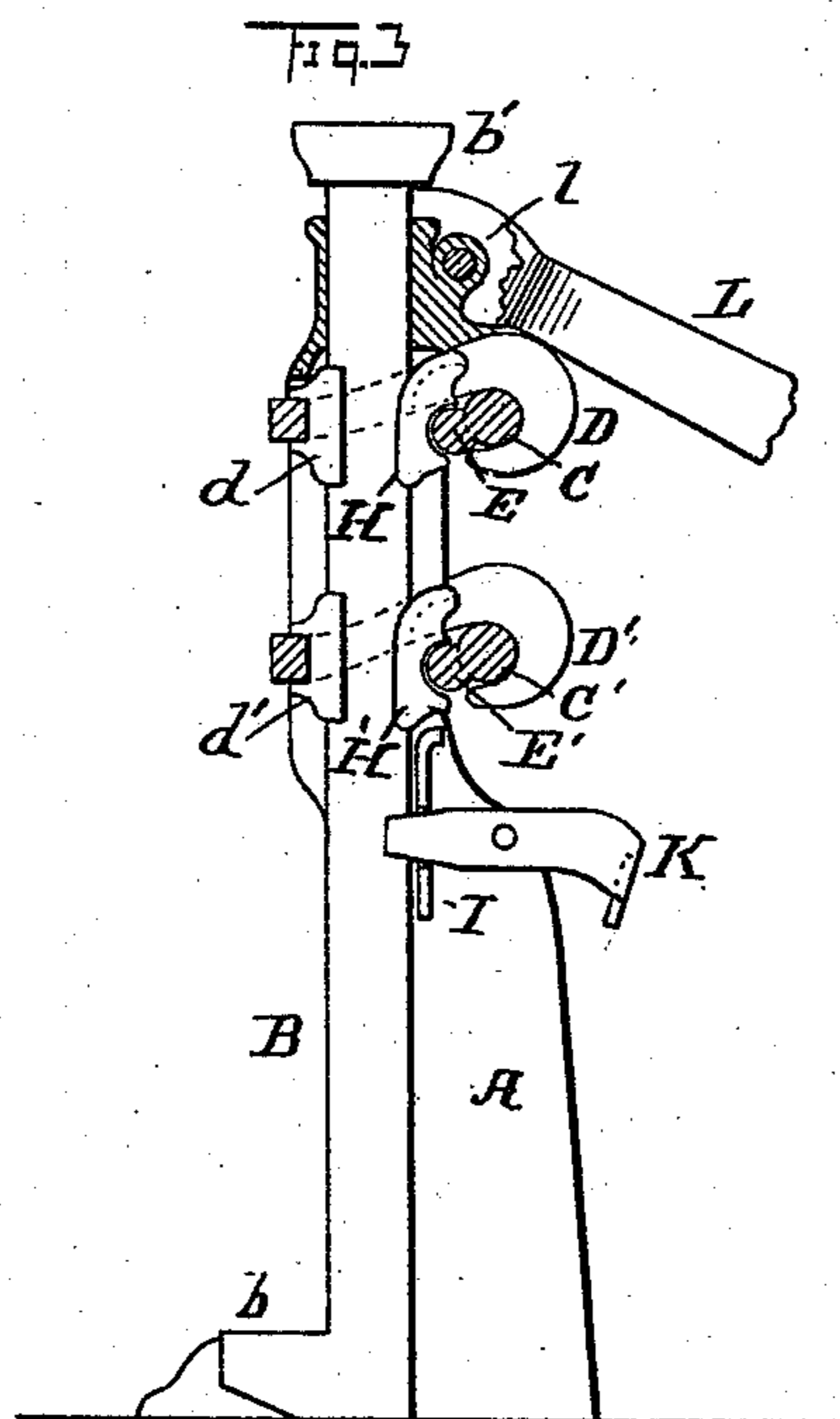
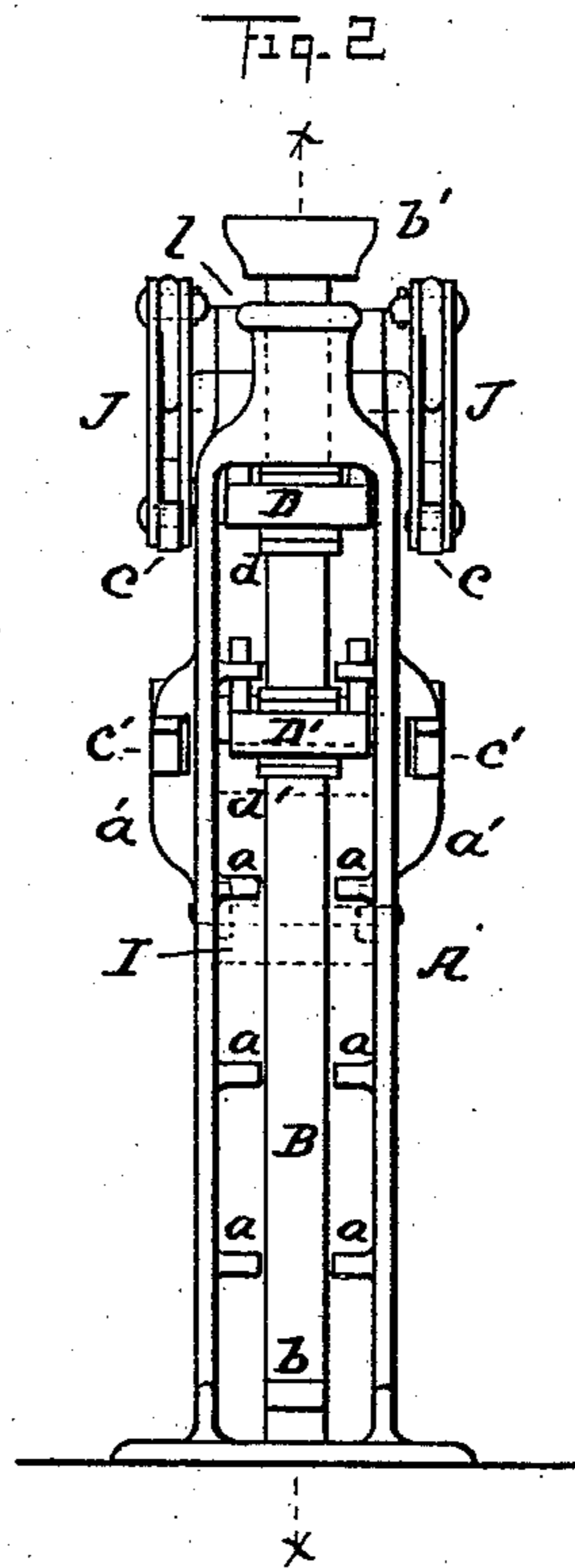
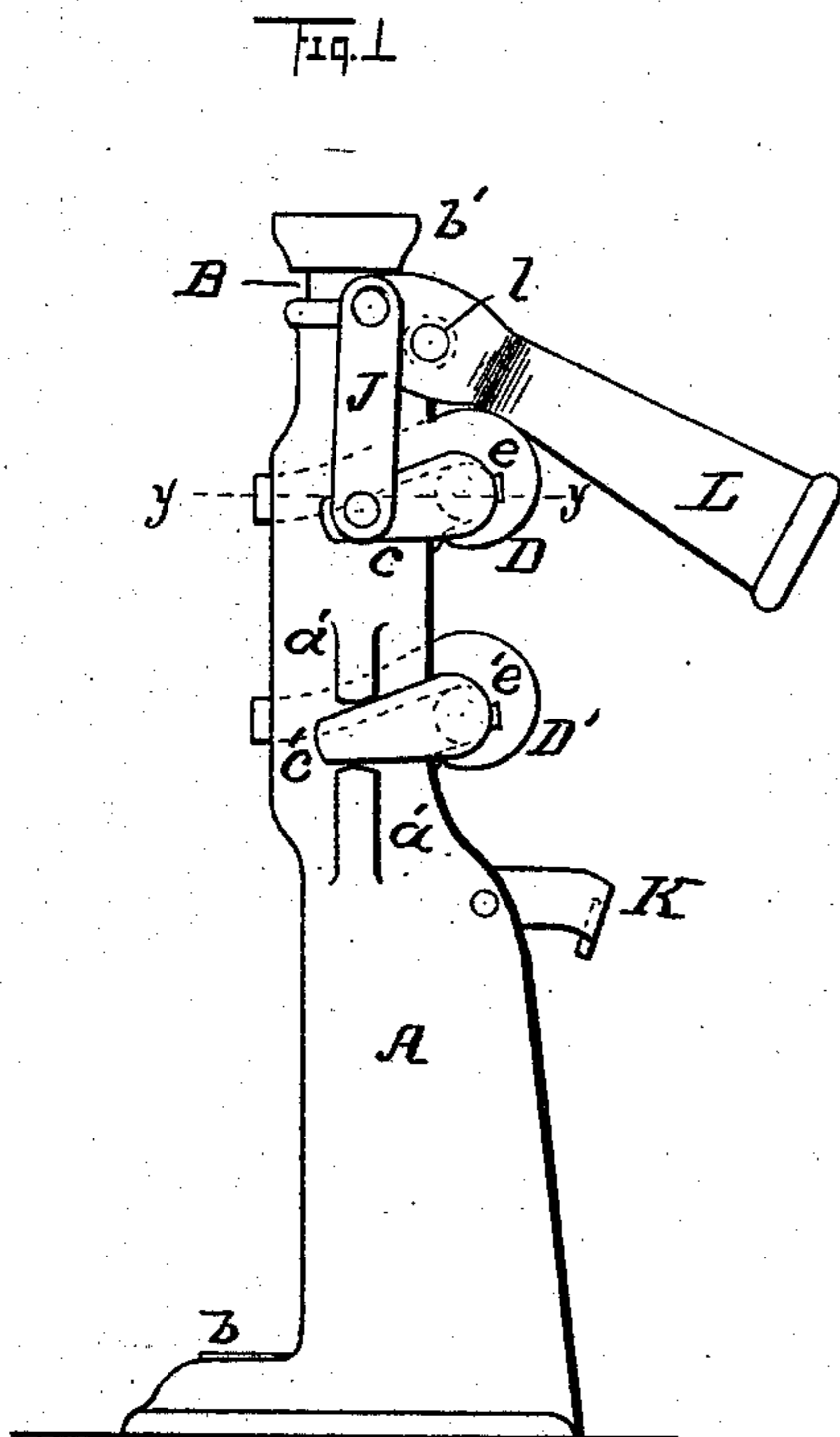
(No Model.)

2 Sheets—Sheet 1.

J. W. HAWKINS.
LIFTING JACK.

No. 413,663.

Patented Oct. 29, 1889.



Witnesses.

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C. E. Humphrey.

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Inventor

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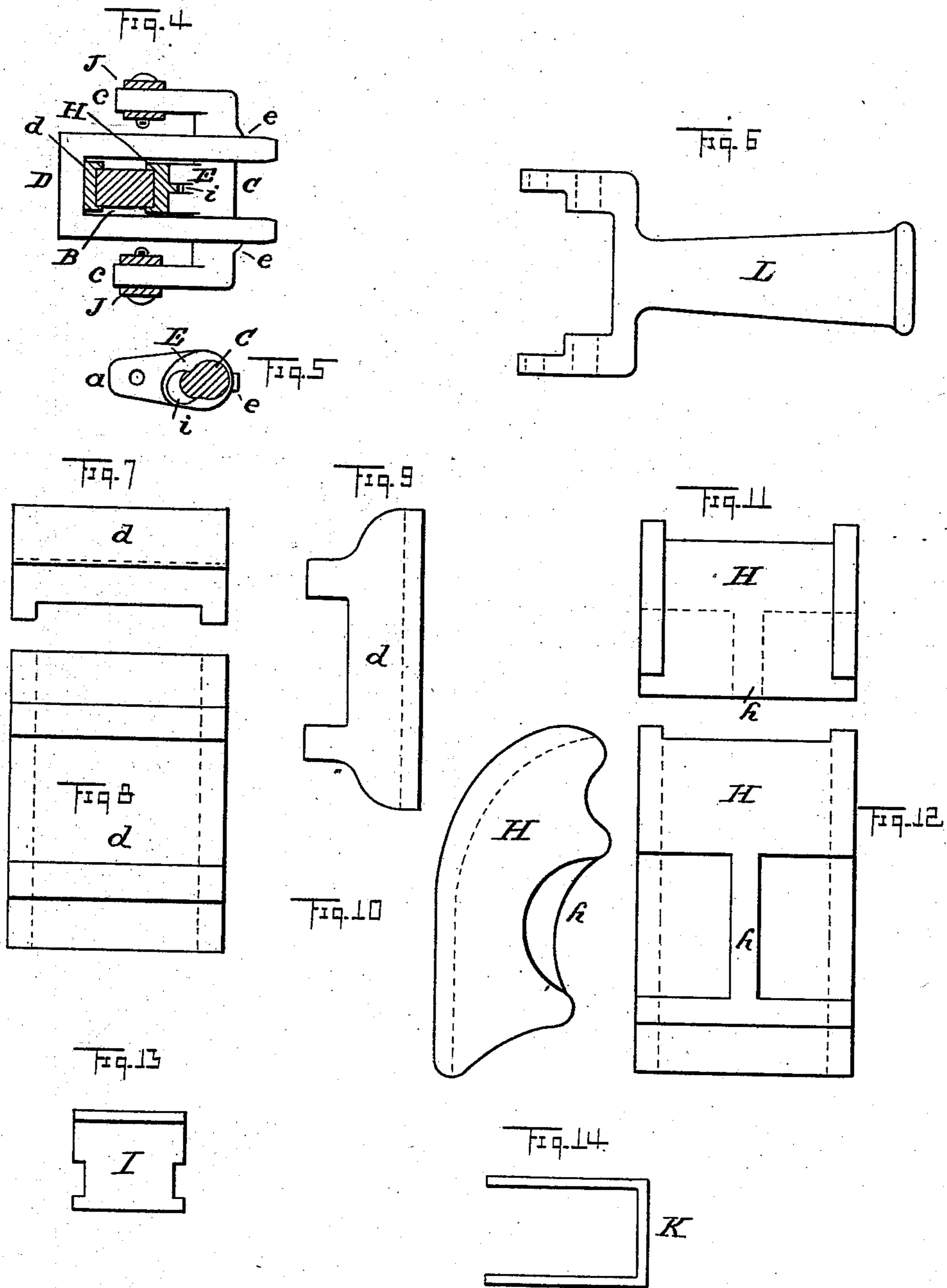
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J. W. HAWKINS.
LIFTING JACK.

2 Sheets—Sheet 2.

No. 413,663.

Patented Oct. 29, 1889.



Witnesses

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UNITED STATES PATENT OFFICE.

J. WESLEY HAWKINS, OF KENT, OHIO.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 413,663, dated October 29, 1889.

Application filed August 12, 1889. Serial No. 320,551. (No model.)

To all whom it may concern:

Be it known that I, J. WESLEY HAWKINS, a citizen of the United States, residing at Kent, in the county of Portage and State of Ohio, have invented a certain new and useful Lifting-Jack, of which the following is a specification.

My invention has relation to improvements in lifting-jacks in which a lifting-bar sliding vertically in a standard is raised by clutch mechanism connected with the operating-lever and retained by similar mechanism connected with the standard.

The objects of my invention are to simplify the construction, to reduce the number of parts, to lessen the number of bolts and rivets by making the parts self-connecting, to provide a simple and effective releasing device, and to construct an effective clutch mechanism for the lifting-bar.

To these objects my invention consists in the peculiar construction and arrangement of the several parts hereinafter described, and specifically pointed out in the claims, reference being had to the accompanying drawings, forming a part of this specification.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a side elevation of my improved jack; Fig. 2, a front elevation of the same; Fig. 3, a vertical section of Fig. 1 at the line *xx* of Fig. 2; Fig. 4, a horizontal section of Fig. 1 at the line *yy*, and Figs. 5 to 14 details of the operative parts hereinafter described.

The standard A, composed of a single piece or casting, consists of two side walls of the form shown, united at the top by front and back connections to constitute a guide for the lifting-bar and at the bottom with a plate which forms a base for the jack. Projecting inwardly from each wall are lugs or webs *a*, which serve as guides for the body of the lifting-bar, and at the back of the upper end is a bearing *l*, to support the bolt of the lifting-lever L, hereinafter described.

The lifting-bar B, preferably rectangular in cross-section, fits and slides vertically in the standard A, and has at the bottom a toe *b* and at the top a head *b'* for engaging the part to be raised. On the outside of each side wall of the standard A are lugs *a'*, having an intermediate opening for the lower arms of a part

of the retaining clutch mechanism, to be hereinafter described, to rest in.

The mechanism of both the lifting and retaining clutches is similar in its general features of construction, and a description of one and its mode of operation will explain the other, except as to their respective operations.

Referring to the upper or lifting clutch, D is a bar bent to form three sides of a rectangle and inclose the front and sides of the bar B, and terminating at each end in downwardly-turned hooks, which are in horizontal alignment, and which bar D for convenience of reference will hereinafter be referred to as the "yoke." Interposed between this yoke and the front of the bar B is a shoe *d* (shown in plan, front, and side elevation in detail in Figs. 7, 8, and 9) and channels in the front and rear to receive the yoke and bar B, respectively. The hooks of the yoke D fit and receive a short shaft C at the back of the standard, which shaft has at each end short crank-arms *c c*, which when in position project forward along the side of the frame, a plan of which shaft is shown in Fig. 4 and in vertical central transverse section in Fig. 5. At the back of this shaft and immediately outside of the hooks of the yoke D are two small lugs *e e*, which serve to retain the hooks from lateral motion toward the ends of the shaft. Projecting from the front of the shaft between the hook of the yoke is a cam E, eccentric to the shaft, turned at a slight angle downward from the line of the arms *a*, (see Fig. 5,) and having in its center a shallow concentric groove *i*. Interposed between the lifting-bar B and the cam E is a shoe H, (views of which are shown in Figs. 11, 10, and 12, which represent, respectively, a plan and side and back elevations,) the inner face of which fits the bar B and is retained thereon by side ledges, and toward the top curves rapidly outward. In the back of this shoe is a concave recess to receive the cam E, in the center of which is a narrow web *h*, which enters the groove *i*. The lifting-lever L (shown in enlarged detail in Fig. 6) is pivoted in the bearing *l* by a bolt or pin, and its inner ends are each connected with one of the arms *c* by duplicate pivotally-connected links J J.

The lower or retaining clutch mechanism is, as hereinbefore stated, identical in construction

tion with that of the lifting mechanism, and hence no detailed description is given, the several parts being identified by the same letters of reference accompanied by prime-
 5 marks. The arms c' rest in the intermediate openings in the lugs a' , and thus sustain the clutch mechanism, and also serve to actuate it, as hereinafter described. Below the shoe H' is a plate I, which fits and slides in vertical
 10 ways in the frame, the top of which is curved outward to engage the lower part of the shoe H' , and having at each side near the bottom rectangular notches.

Pivoted in the frame A is the foot-piece K,
 15 (shown in enlarged detail in Fig. 14,) which consists of a strap of iron to form three sides of a rectangle, the ends of which slightly taper and rest in the side notches of the plate I.

The operation of the jack is as follows: The
 20 parts being in the position shown in Figs. 1, 2, and 3, which represents the position after one movement of the bar B upward, the lever L is swung upward. This by means of the links J swings the arms c downward and
 25 swings the cam E slightly back from the shoe II to relieve the latter from pressure against and permit it to slide down the bar B. By reversing the motion of the lever the cam is again thrown against the shoe H, and simultaneously by means of the yoke draws
 30 the shoe d against the opposite face, thereby firmly grasping the bar between them, which is then raised the balance of the stroke of the lever. As the bar is released by the lifting-
 35 clutch, its friction on the shoe H' swings the near end of the releasing-clutch down; but the arm c' being retained by the lugs a' causes a slight revolution of the shaft C' , thereby causing the cam E' to actuate the
 40 shoes $d' H'$ to grasp the bar, as in the lifting-clutch. To lower the bar B when raised, the foot-piece is pressed down, which forces the plate I against the shoe H' and raises and releases it from pressure against the bar B.

45 Having thus described my invention, I claim—

1. In a lifting-jack of the class designated, a clutch mechanism consisting of a bar bent to surround three sides of the lifting-bar and

having hooked ends, a shaft resting in said 50 hooked ends having crank-arms and bearing a cam, two shoes—one disposed between the lifting-bar and bent bar and the other between the lifting-bar and cam—and mechanism for
 55 moving said crank-arms to cause the shoes to clasp and release the lifting-bar, substantially as shown and described.

2. The combination, with the standard A and lifting-bar B sliding therein, of the clutch mechanism consisting of the yoke D, shaft C, 60 cam E, arms c , and shoes $d H$, and the pivoted lever L, and links J for raising said bar, all constructed and arranged substantially as shown and described.

3. The combination, with the standard and 65 the lifting-bar arranged to slide therein, of the lifting-clutch consisting of the yoke D, shaft C, cam E, shoes $d H$, and arms c , united with the pivoted lever L by links J, and the retaining-clutch consisting of like parts, with 70 the arms c' resting in the opening in the lugs a' , all constructed and arranged substantially as shown, and for the purpose specified.

4. The combination, with the standard, the 75 lifting-bar mounted therein, and the retaining-clutch consisting of the yoke D' , shaft C' , cam E' , shoes $d' H'$, and arms c' , of the sliding plate I, to engage and raise the shoe H' , and the pivoted foot-piece K; to actuate said plate, all constructed and arranged as 80 shown.

5. In combination with the standard and the lifting-bar mounted therein, a pivoted lever, lifting and retaining clutches, each consisting of a yoke, a shaft-bearing, a cam, and 85 end arms, shoes interposed between the lifting-bar and cams and yokes, respectively, a sliding plate to engage and raise one shoe of the retaining-clutch, and a pivoted lever to actuate said plate, all constructed and arranged substantially as shown and described. 90

In testimony that I claim the above I hereunto set my hand.

J. WESLEY HAWKINS.

In presence of—

C. P. HUMPHREY,
 C. E. HUMPHREY.