

J. H. BURKHOLDER.
LIFTING JACK.
APPLICATION FILED FEB. 19, 1910.

963,206.

Patented July 5, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

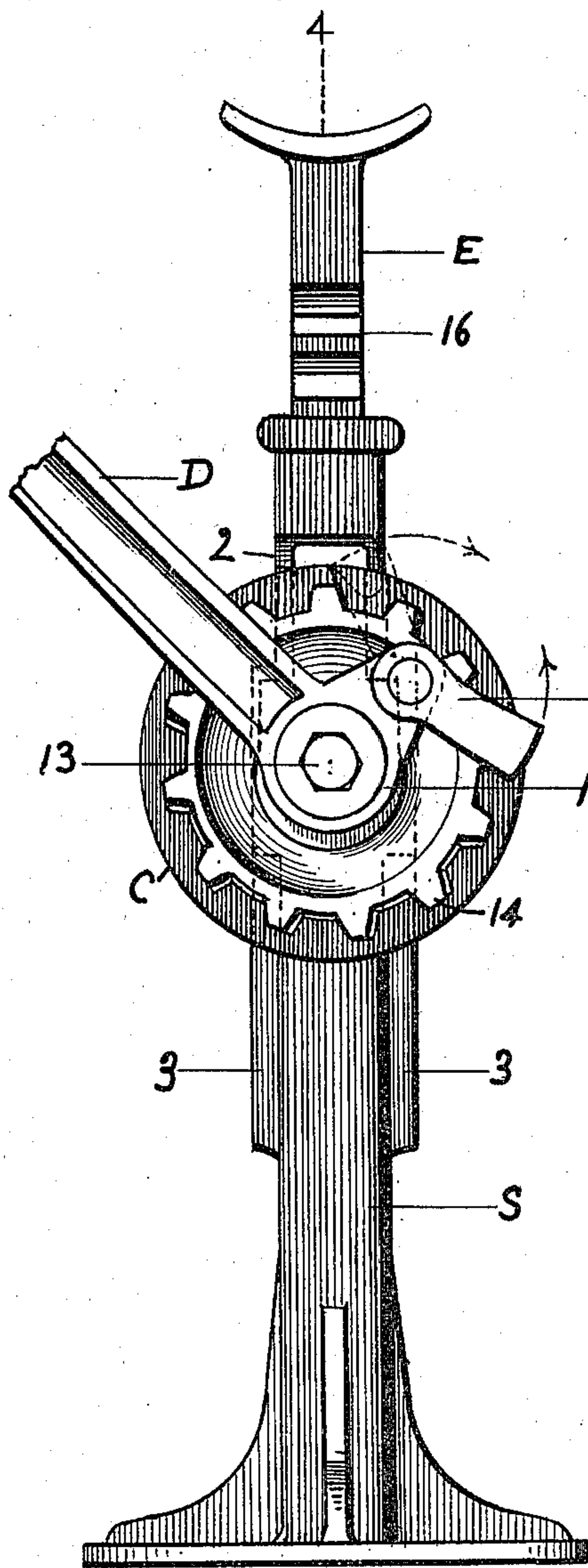
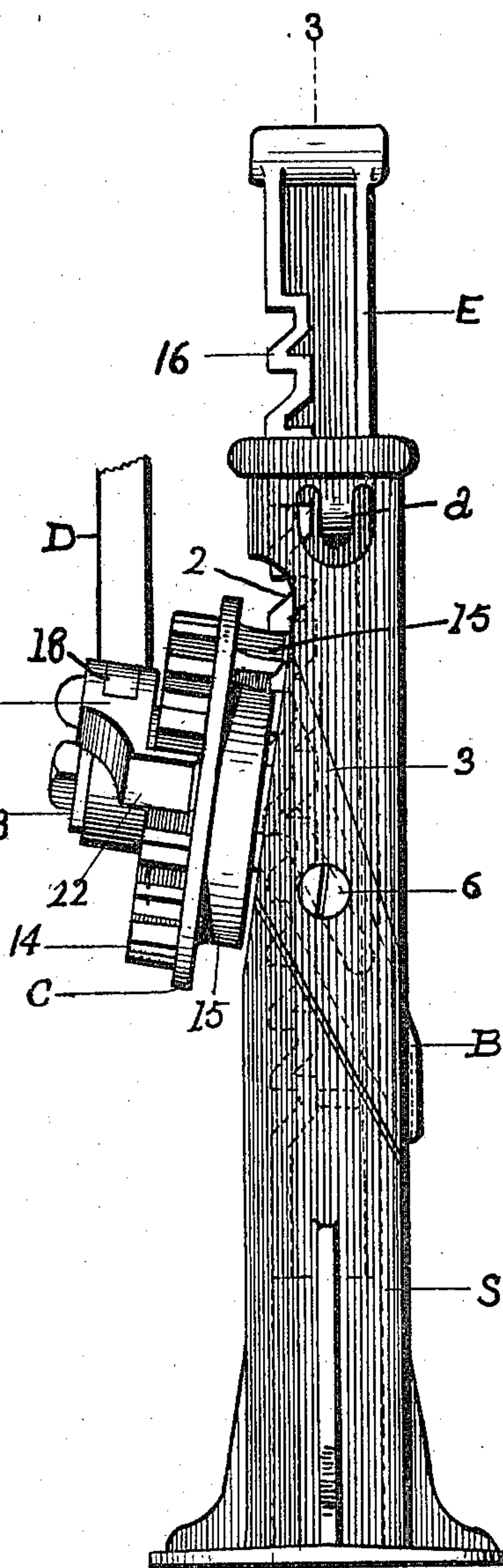


Fig. 2.



ATTEST
E. M. Fisher
J. C. Mussum.

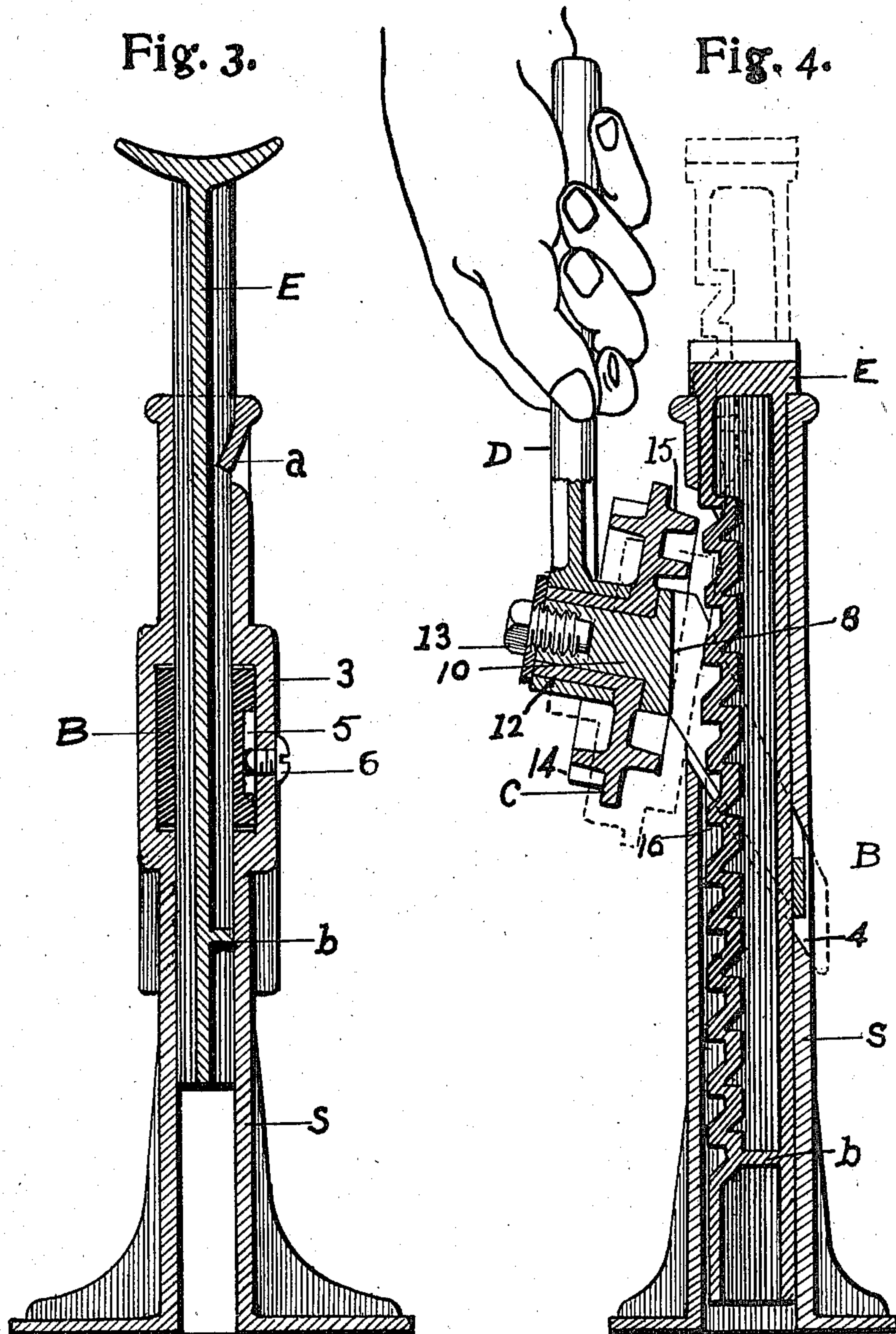
INVENTOR
John H. Burkholder
By Fisher & Mussum ATTYS.

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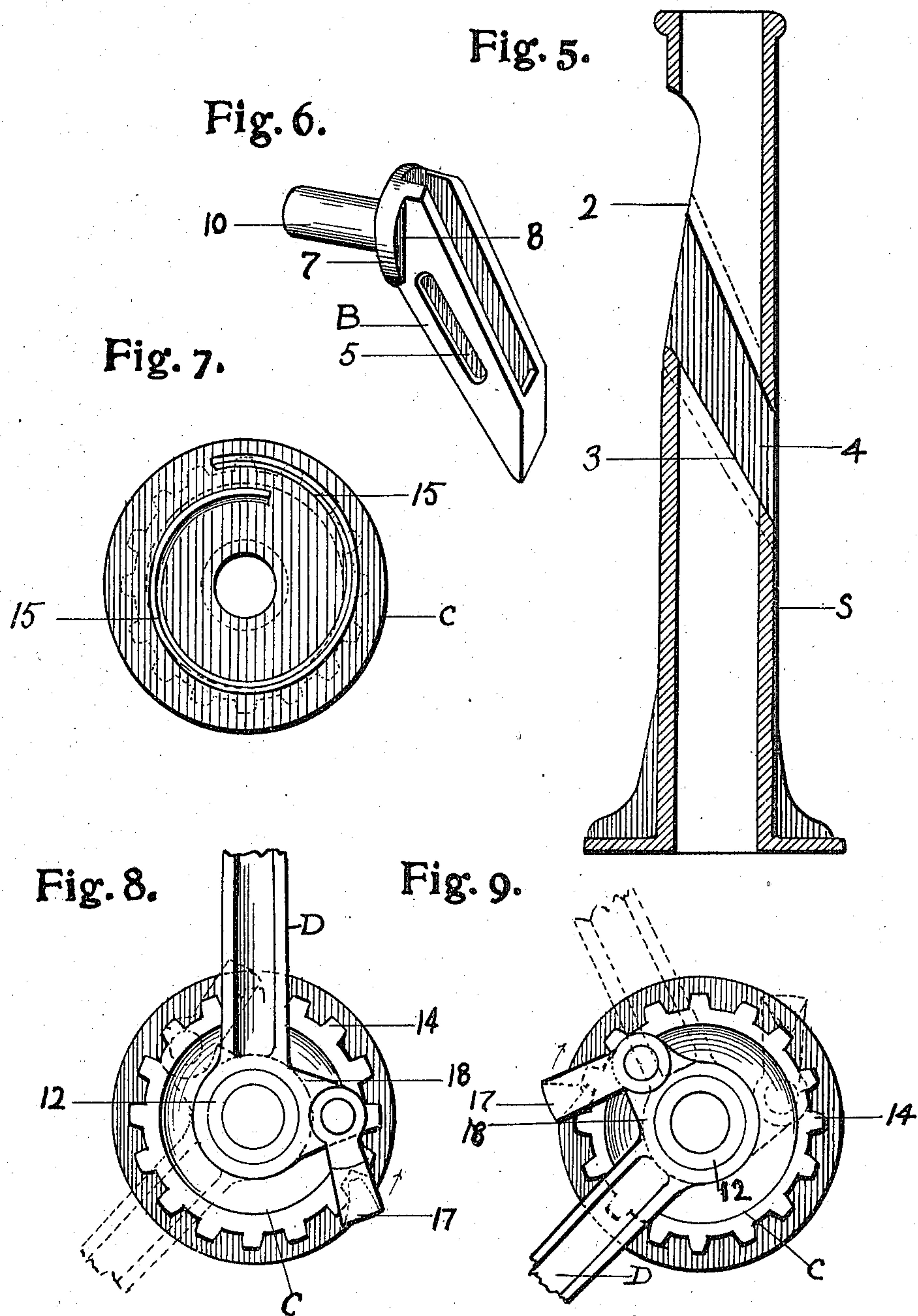
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UNITED STATES PATENT OFFICE.

JOHN H. BURKHOLDER, OF ASHLAND, OHIO, ASSIGNOR TO THE ELITE MANUFACTURING COMPANY, OF ASHLAND, OHIO, A CORPORATION.

LIFTING-JACK.

REISSUED

963,206.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed February 19, 1910. Serial No. 544,917.

To all whom it may concern:

Be it known that I, JOHN H. BURKHOLDER, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Lifting-Jacks, of which the following is a specification.

My invention relates to lifting jacks, and the invention consists in a jack having a gravity return as well as certain novel operating and controlling parts combined therewith, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings Figure 1 is a front elevation of the jack, and Fig. 2 is a side elevation thereof at right angles to Fig. 1. Fig. 3 is a central sectional elevation on a line corresponding to 3—3, Fig. 2, looking to the rear or right, and Fig. 4 is a sectional elevation at right angles to Fig. 3 and corresponding to 4—4, Fig. 1. Fig. 5 is a vertical sectional elevation of the standard alone. Fig. 6 is a perspective view of the so-called yoke. Fig. 7 is a side elevation of the ratchet wheel, and Figs. 8 and 9 are side elevations of said wheel and of the controlling lever and pivoted dog or pawl as hereinafter fully described.

The construction thus shown comprises several separate and distinct elements operatively related and begins with the standard S as a support for all the others. The said standard is tubular and provided with a suitable base and a scarf or cutaway portion 2 at its side and top deepest at its top and outwardly inclined downward and adapted to receive the yoke B. To this end the said standard is also provided with enlargements 3 at its sides forming inside guideways for said yoke and inclined at an acute angle to the axis of the standard downward and ending in an open slot 4 at the rear of said standard.

The yoke B has an open or skeleton body with parallel flat sides tapered slightly between its ends as to top and bottom to seat in the correspondingly tapered guideways 3 and has a channel or groove 5 lengthwise in one side adapted to be engaged by a screw 6 through the side of the standard and retain the yoke in place. The said yoke also has a head 7 with shoulders 8 at its side adapted to rest against the inclined edges

2 of the standard, and a spindle 10 projecting outward from said head upon which the operating parts are mounted. The said operating parts comprise the wheel C and the lever or arm D, and said wheel has a tubular hub 12 at its outer side and is rotatably confined on said spindle by washer and screw 13. Said lever or handle D is rotatably mounted over said hub and also is confined by said washer.

The wheel C has teeth 14 about its outside next to its periphery and an inside cam 15 adapted to engage teeth or projections 16 on the lift bar or member E. A dog or pawl 17 is pivotally mounted on a right angled projection or extension 18 at the base and edge of lever D opposite its pivot. The dog or pawl 17 is mounted on the extremity of this extension and adapted to be reversed or thrown to either side into engagement with the teeth 14 to operate the wheel C by depressing the lever or by an upward lift thereon.

The yoke B is slidable in its guides within limits fixed by screw 6 at its side and when down in use rests with its head against standard S which brings cam 15 on wheel C into working engagement with teeth 16. The jack is then ready to be operated either up or down. But a novel feature of the invention lies in the construction and arrangement of the said yoke and the parts it carries in respect to the standard and lift bar in this, that by drawing the yoke outward so as to disengage the cam 15 from the teeth 16 the lift bar E is free to be raised or lowered, and if raised will drop by gravity when said parts are withdrawn, as occurs when the handle D is gripped to carry the jack away, Fig. 4. Then the said bar E is free to drop to its limits in the standard, Fig. 4. A tooth *a* on the standard struck in after the parts are assembled is adapted to engage a web *b* on the lift bar and prevent its withdrawal from the standard.

Special importance attaches to the place and manner of attaching dog 17 to lever D, because by having a right angled extension 18 and the said dog pivoted at one end to the end of said extension the dog will automatically swing over or downward to take a new grip when lever D is raised to a vertical position, Fig. 8. In this view the dotted lines of lever and dog show the end of

a down stroke. Then to take a new grip the lever is raised to vertical position and the dog gravitates over the center to full lines in said view and takes a new hold on the wheel. Of course cam 15 holds the lift member at all times and permits the lever to act freely, and also the dog. On the other hand Fig. 9 shows a reverse action of the parts. Herein the lever is designed to act by lifting instead of depressing and the dog and lever are shown in full lines in starting position and in dotted lines at the end of the stroke and before the dog comes to the dead center to drop over as in Fig. 8. The said yoke or supporting member B is open through its center to afford room for lift member E and to enable the yoke to be drawn out more or less to disengage wheel C, and the transverse guideways 3 are preferably placed at about the angle of inclination shown.

By means of the inclined facing 2 at the front of standard S opposite said guideways 3 the teeth 16 on the lift member are brought to the front and exposed for engagement by cam 15 and the slot or opening down through yoke B extends out far enough therein to expose said teeth 3 outside said facing or scarf 2, Fig. 4.

It is to be noted that the dog 17 is provided with a lateral extremity 22 adapted to reach over the sides of teeth 14 on wheel C and engage the same, the shape thereof being seen in dotted outline in Figs. 1 and 8 particularly.

In operation the lift bar E can be raised or lowered by hand to any desired elevation or be dropped entirely down by simply disengaging wheel C therefrom. This of course involves the partial withdrawal of yoke or support B to make such disengagement.

What I claim is:

1. In lifting jacks, a standard and a lift member therein and means operatively engaged with said lift member adapted to be disengaged therewith and permit said member to drop by gravity, said means comprising a yoke and a wheel mounted on said yoke slidably mounted in guideways in said standard.

2. A lifting jack comprising a standard and a lift member and a wheel and a yoke to operate said member, said yoke slidably transversely on said standard to disengage said wheel.

3. In lifting jacks, a standard and a lift member therein having teeth at its edge, in combination with a lift mechanism mounted on said standard and engaged with said teeth, said mechanism comprising a yoke set at an inclination in said standard and slidably therein.

4. A lifting jack comprising a standard and a lift member and means to operate said

member laterally slidable on said standard and having said lift member extending through the body thereof and slidable therein.

5. In lifting jacks, a standard and operating mechanism slidably mounted at an inclination thereon, and a lift member in said standard adapted to be engaged by said operating mechanism in one position and to be disengaged therefrom in another position.

6. In lifting jacks, a standard and a lift member therein, a rotatable wheel adapted to engage said member and a support for said wheel slidable transversely upon said standard.

7. A lifting jack comprising a standard and a lift member therein, in combination with a wheel adapted to engage said member and a support for said wheel slidably mounted at an acute angle in said standard and adapted to move said wheel to and from said lift member.

8. A lifting jack comprising a standard and a lift member therein, in combination with a laterally slidable member set at an inclination in said standard, a rotatable wheel mounted on said slidable member and having a cam operatively engaged with said lift member, a lever and a dog pivoted thereon operatively engaging said wheel.

9. A lifting jack having a tubular standard provided with inclined guideways transversely thereof and a lift member in said standard, in combination with a yoke slidable in said guideways and a rotatable member mounted on said yoke and having operating connection with said lift member.

10. In lifting jacks, a standard having inclined and tapered guideways in its sides and a cutaway facing at the entrance to said guideways, in combination with a lift member in said standard having teeth along its front next to said facing.

11. A lifting jack having a tubular standard with an inclined facing at its front and top open to the inside thereof and having downwardly inclined guideways in its sides from said facing to its rear, in combination with a yoke in said guideways having a spindle at its front, a gear wheel mounted on said spindle, a lift member in said standard operatively engaged by said wheel and a lever and dog to operate said wheel.

12. The standard and a lift member therein, a rotatable part in operative engagement with said lift member, a pivotally mounted lever next to said rotatable part and a reversible dog pivotally mounted on said lever and adapted to engage said rotatable part and an inclined laterally slidable yoke mounted in said standard and carrying said lever and said rotatable part.

13. A standard and a lift member therein and a wheel mounted at the side of said standard and operatively engaged with said

lift member, in combination with a pivoted lever having a lateral extension at its base, a dog pivoted on said extension and engaged with said wheel, and a yoke supported at an inclination in said standard and carrying said wheel and lever and having said lift member extending through the same and slidable therein.

14. In lifting jacks, a standard and lift member and a wheel operatively engaging said member, in combination with a pivoted lever having an extension substantially at right angles thereto at its base and a reversible dog pivoted at the extremity of said extension and in operating relations with said wheel and a yoke mounted at an inclination in said standard and slidable within

limits therein and having a spindle on which said wheel and lever are mounted.

15. In lifting jacks, a hollow standard and a lift member therein having teeth on its side, an engaging and disengaging cam movably mounted upon said standard for said lift member, and an inclined laterally slidable support extending through said standard and having said cam mounted thereon.

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

JOHN H. BURKHOLDER.

Witnesses:

H. A. MY KRANTZ,
J. CAHN.