

S. D. RUTH.
BLACKSMITH'S VISE.
APPLICATION FILED MAY 25, 1908.

930,889.

Patented Aug. 10, 1909.

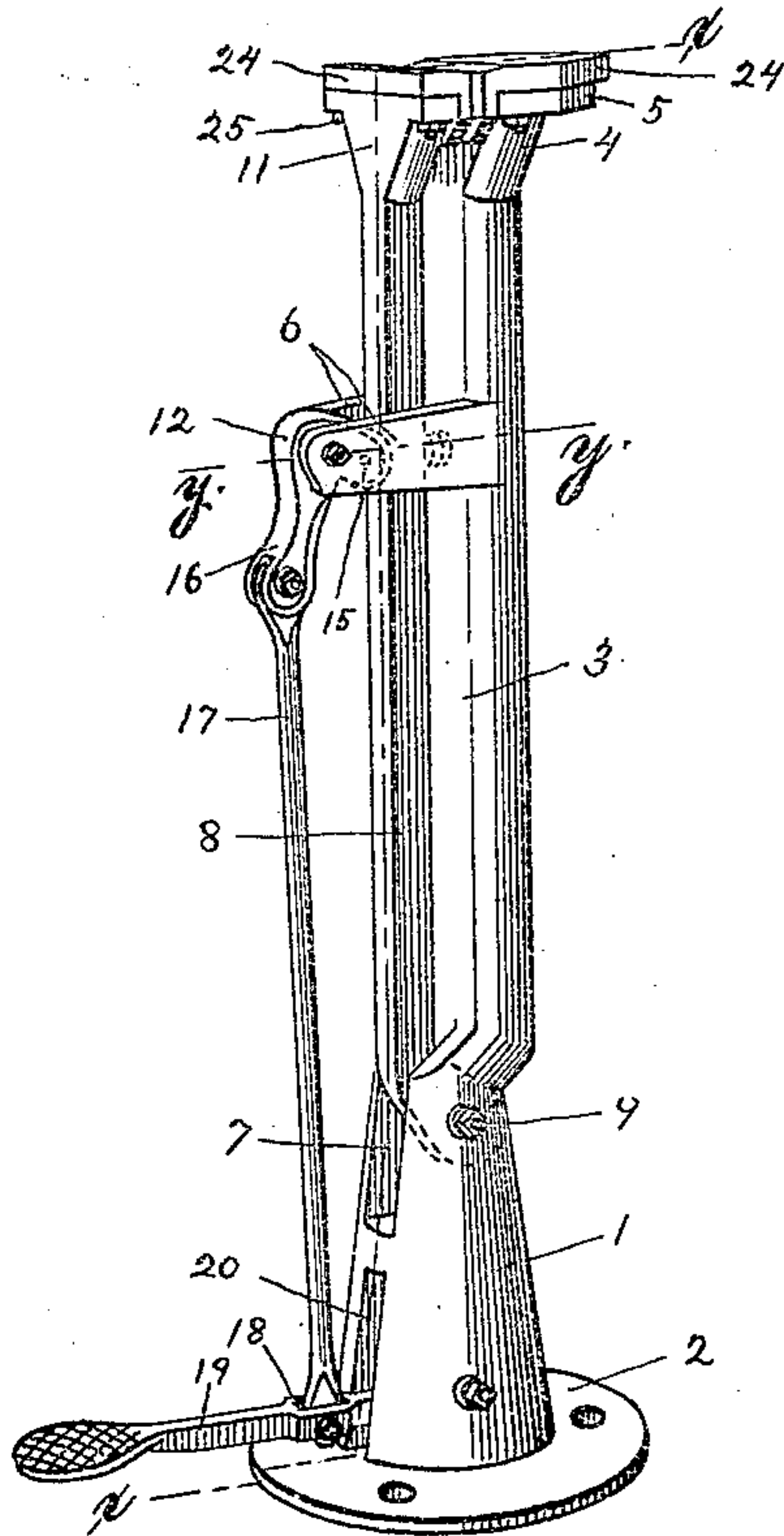


Fig. 1.

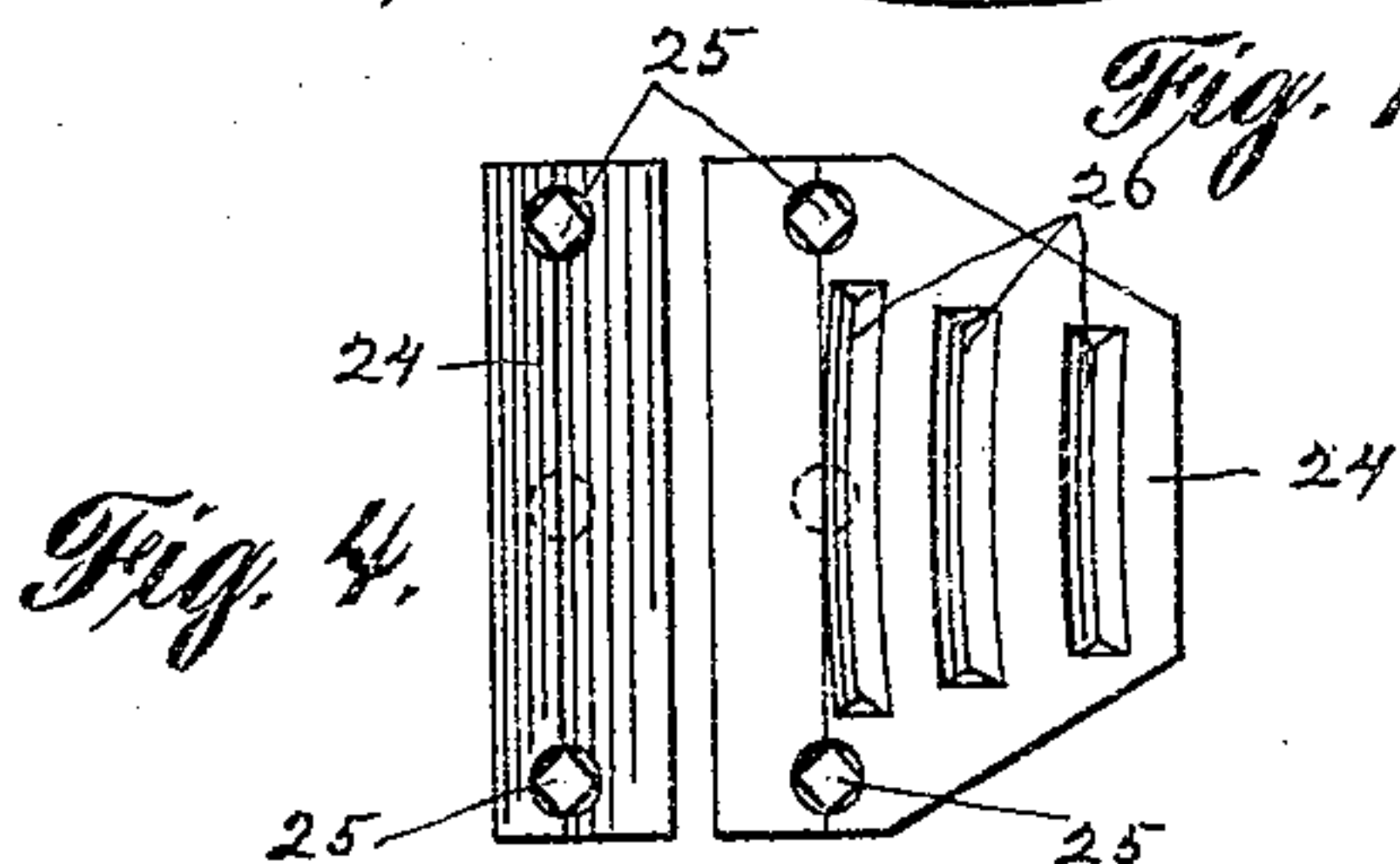


Fig. 4.

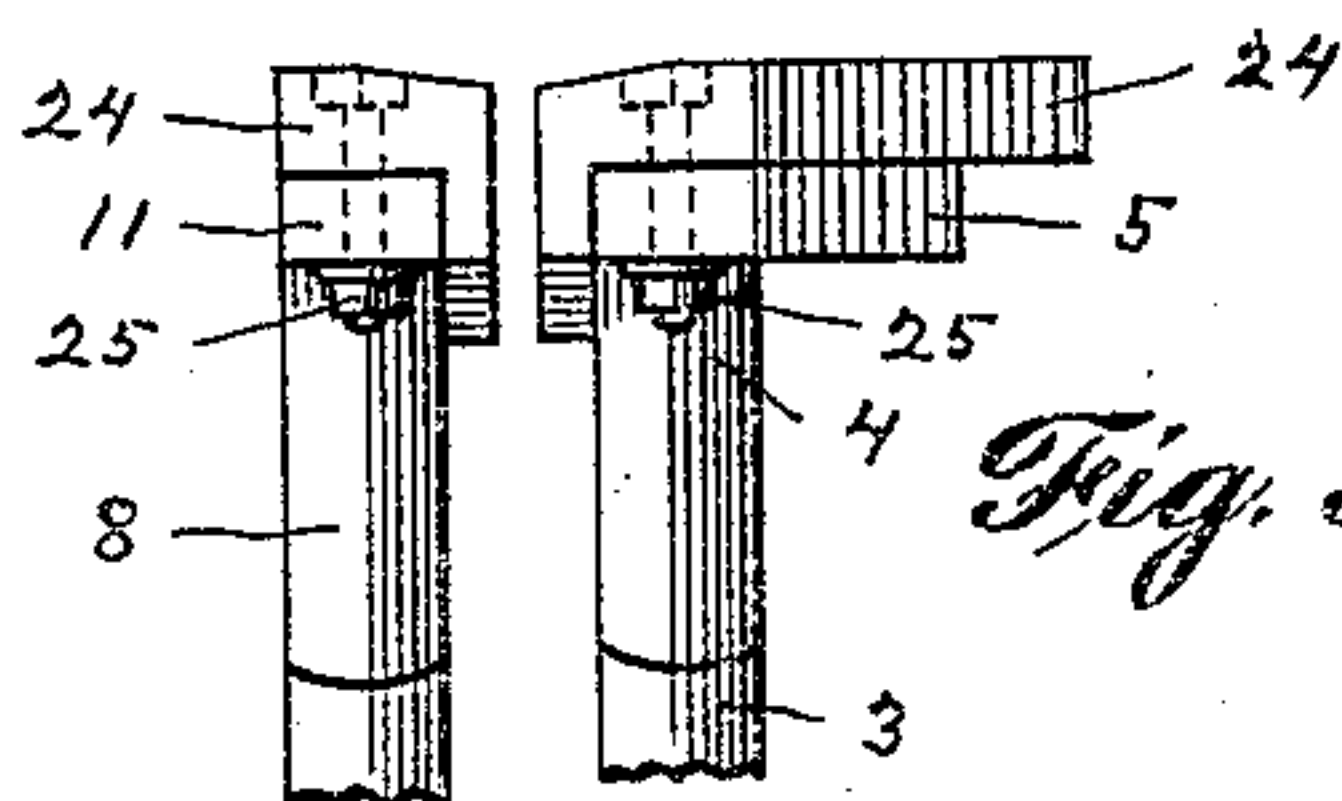


Fig. 5.

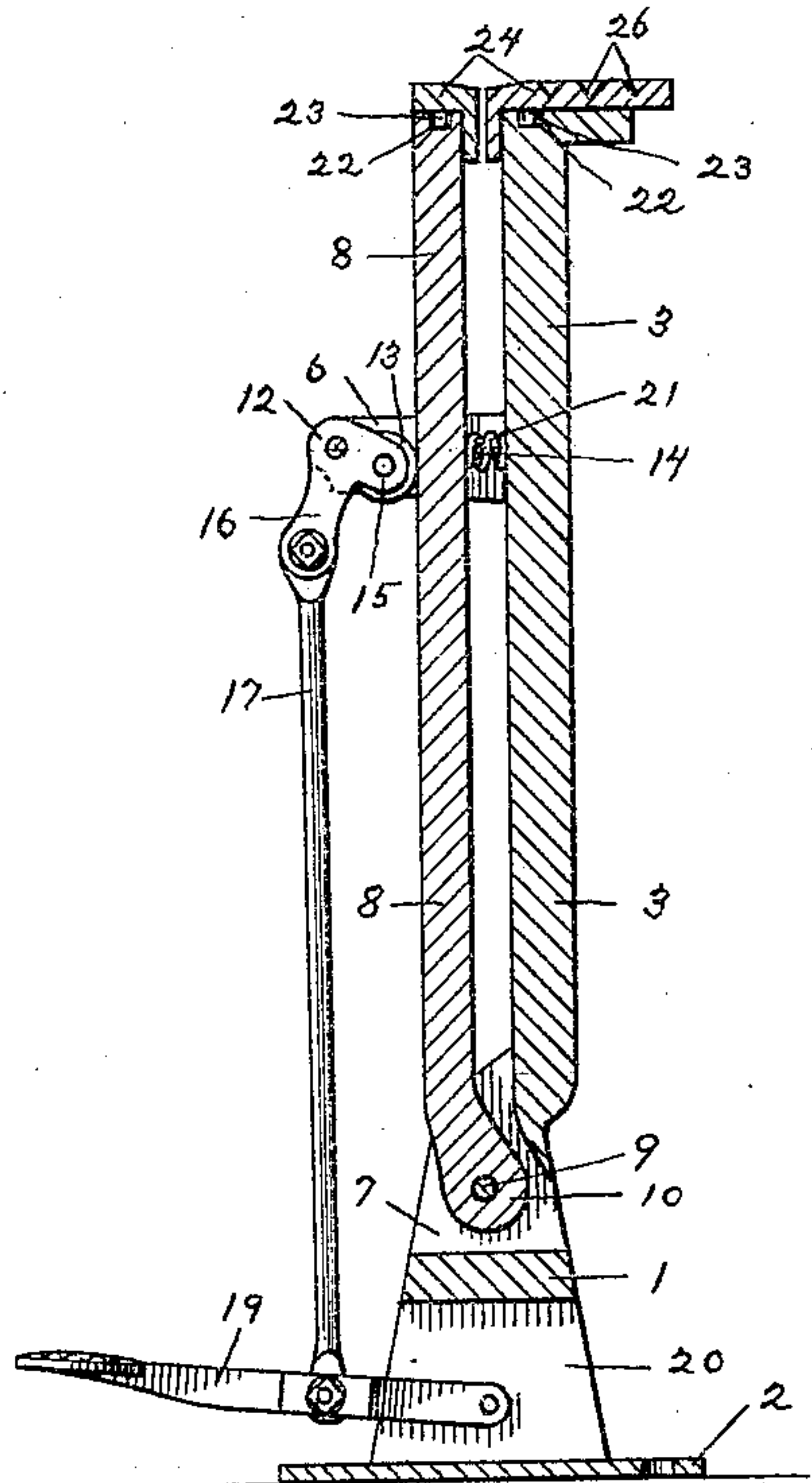


Fig. 2.

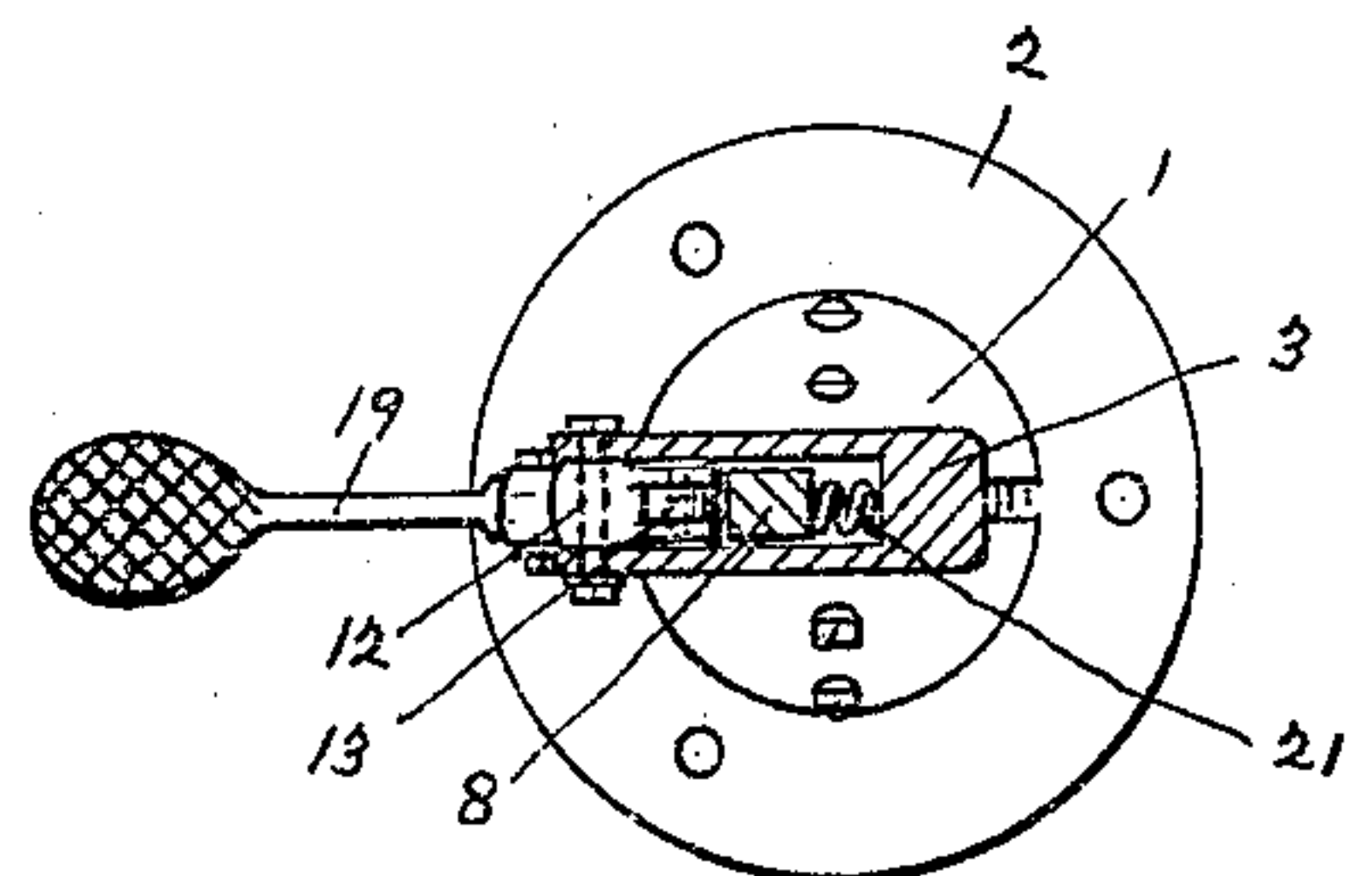


Fig. 3.

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BLACKSMITH'S VISE.

No. 930,889.

Specification of Letters Patent.

Patented Aug. 10, 1909.

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To all whom it may concern:

Be it known that I, SIMPSON D. RUTH, a citizen of the United States, residing at Terre Hill, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Blacksmiths' Vises, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to vises of that class which are operated by foot power and more especially to that type of vises used by blacksmiths and which are specially designed for the forming and calking of horseshoes and the holding of metal for various purposes.

The objects of the invention are to provide a simple, strong and quick acting vise of this class, and capable of powerful leverage and grip, and which may be operated by little exertion on the part of the operator.

Another feature of my invention is to provide detachable jaws, so that jaws of different styles, sizes and material may be used for different operations, or kinds of work, and also that the jaws may be readily replaced as they become worn.

With these and other objects in view the invention consists in the construction and combination of parts as hereinafter more fully illustrated and described, but it is fully understood that I do not confine myself to the exact construction as herewith shown, as slight changes may be made in the device without departing from the spirit of the invention.

Like reference characters indicate corresponding parts in all the figures of the drawings.

In the drawings:—Figure 1, is a perspective view of my improved vise. Fig. 2, is a vertical sectional view on the line $x x$ of Fig. 1. Fig. 3, is a cross sectional view taken on the line $y y$ of Fig. 1. Fig. 4, is a top plan view of one style of detachable jaws. Fig. 5, is a side elevation of the same detachable jaws, showing the method of attaching them to the heads.

In the drawings 1, indicates a floor stand formed with a flanged bottom 2, for securing it to the floor; extending upwardly from said stand 1, and integral therewith is the arm 3, terminating at its top in the head 4, formed with the flange 5, projecting from its sides and rear, while at a suitable distance below said head, the arm 3, is provided with the parallel guide arms 6, extending for-

wardly at right angles to said arm. Near the top of said base 1, and below the bottom of said arm 3, is formed the orifice 7, within which is pivotally mounted the lower end of the movable arm 8, by the bolt or pin 9. Said movable arm 8, is formed with the lower socket end 10, and the upper headed end 11, and is mounted with its lower end 10, pivoted within the base 1, as described, and has its body embraced and guided at a point near its head between the guide arms 6, of the arm 3. Between the inner faces of the guide arms 6, near the ends thereof, is pivoted the bell-crank arm 12, which is formed with its short arm 15, bifurcated, and within said bifurcation is rotatably mounted the roller 13, which is designed to roll against the outer face of the movable arm 8, and impart to said arm 8, a lateral motion as said bell-crank is rocked. To provide for automatically opening the jaw of the vise when released by said bell-crank, I provide at a point near said guide arms 6, a spiral spring 21, secured between said arms by the bosses 14, in such a way as to exert a tendency to force said arms apart.

To the longer arm 16, of the bell-crank 12, is pivoted one end of a connecting rod 17, while the other end of said rod 17, is pivotally mounted within the slot 18, which is formed within the treadle-lever 19. Said treadle-lever 19, is pivoted at its inner end within the orifice 20, which is formed within the stand 1, in such a manner that said lever has a free vertical motion, and when depressed by the foot it will operate the connecting rod 17, and the bell-crank 12, and thus force the jaws together, while upon releasing the pressure upon said treadle-lever 19, the action of the spring 21, will force the jaws apart and raise the rod 17, by the action of the bell-crank 12, as the center of the roller 13, when the jaws are closed, is below the center of the pivot point of said bell-crank, so that said bell-crank can never become locked upon a dead center.

The upper surfaces of the heads 4, and 11, are provided with the sockets 22, designed for the reception of the bosses 23, which are formed upon the bottom of the removable jaws 24, and which are secured to said heads by the bolts 25. Said removable jaws may be made of any desired style, shape or material, but are here shown as in Figs. 4, and 5, the rear jaw being provided with the grooves 26, to receive the calks of the shoe

so that it may lie flat upon the surface of said jaws.

Having thus described my invention what I claim as new and desire to secure by Letters

5 Patent is:—

1. In a vise of the class described, comprising a stationary vertical jaw-arm formed with a base and provided near its upper end with parallel guide arms at right angles to
10 the body thereof, a movable jaw-arm embraced and guided by said guide arms, and having its lower end pivotally mounted within said base, jaws detachably secured to the upper ends of said jaw-arms, a bell-
15 crank lever formed with a bifurcated end, a roller rotatably mounted in said bifurcation, said bell-crank being pivoted within the ends of said guide arms with said roller in contact with said movable jaw-arm, and
20 means for rocking said bell-crank.

2. In a vise of the class described, comprising a stationary jaw-arm formed with a base and a movable jaw-arm pivoted within

said base, guide arms formed upon said stationary arm for confining the action of
25 said movable arm, a spiral spring mounted between the adjacent sides of said jaw-arms, removable jaws attached to the ends of said jaw-arms, a bell-crank lever pivoted between the ends of said guide arms, a roller
30 mounted in one end of said bell-crank and in rolling contact with said movable jaw-arm, a treadle-lever formed with a vertical slot in the body thereof, and terminating at
35 one end in a foot-treadle and pivoted at its other end within said base, and a connecting rod secured at one end to said bell-crank lever and at its other end to said treadle-lever.

In testimony whereof I affix my signature 40 in presence of two witnesses.

SIMPSON D. RUTH.

Witnesses:

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