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PATENTED JUNE 6, 1905.

E. S. WILLIAMSON.

BENCH VISE.

APPLICATION FILED APR. 12, 1904.

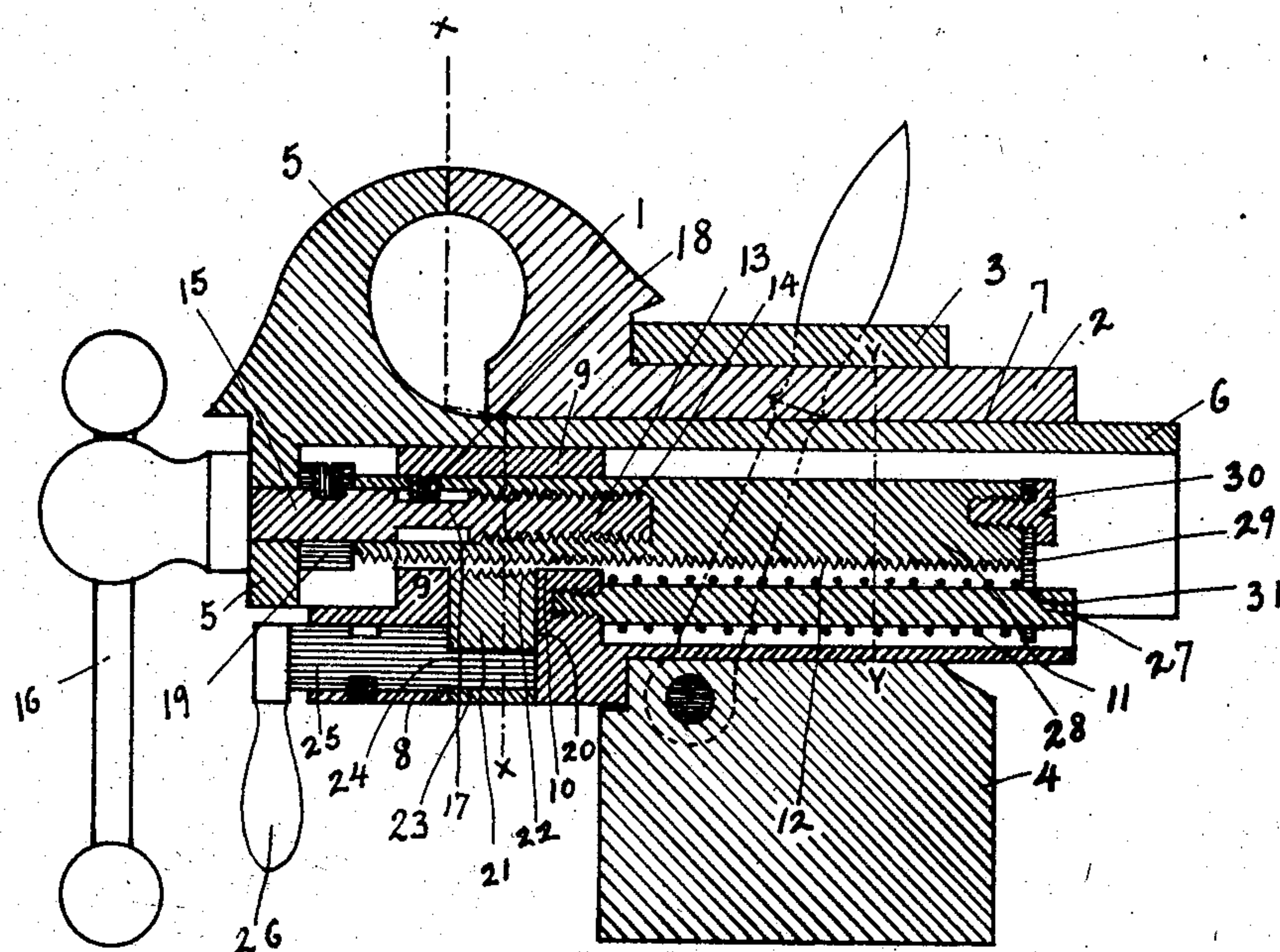


FIG. 1

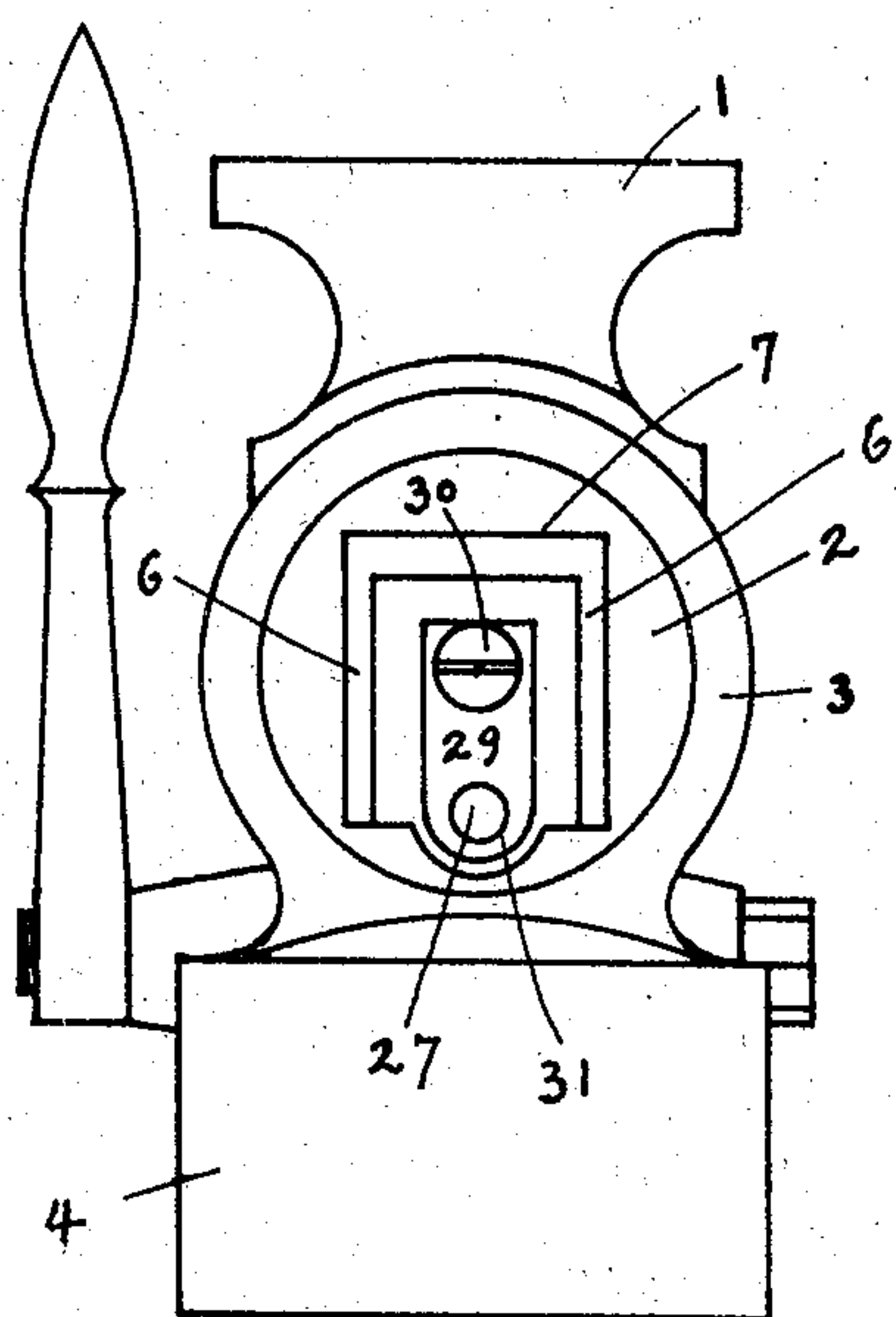


FIG. 2

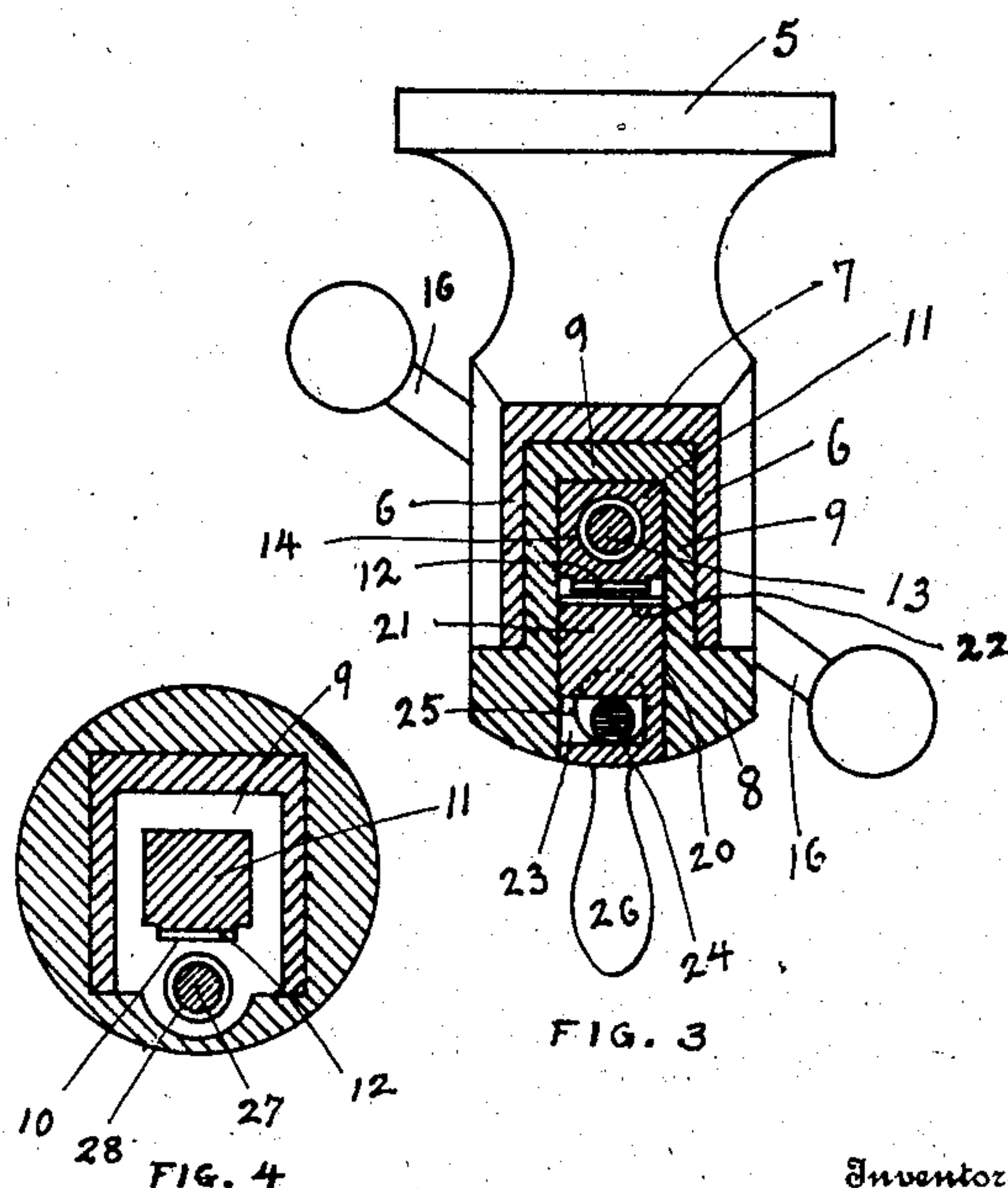


FIG. 3

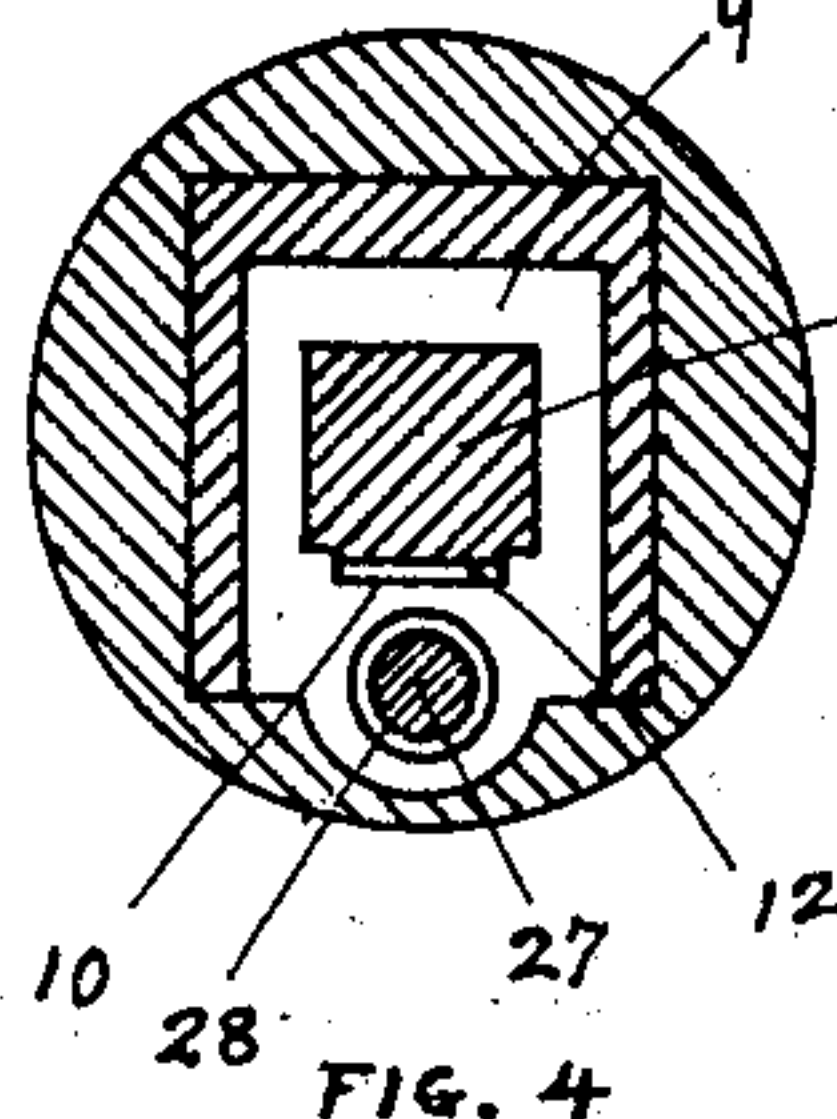


FIG. 4

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BENCH-VISE.

SPECIFICATION forming part of Letters Patent No. 791,741, dated June 6, 1905.

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To all whom it may concern:

Be it known that I, ELI S. WILLIAMSON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Bench-Vises; 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.

My invention relates to improvements in bench-vises, its object being to materially quicken the operation of adjusting the relative position of the jaws preparatory to gripping the object between the same.

Heretofore the movable jaw has been manipulated to and from the fixed jaw by the usual screw-thread movement, which necessarily requires time in its accomplishment, which may be advantageously avoided.

The object, therefore, of my present invention is to provide improved quick-acting means whereby the movable jaw can be quickly adjusted to and from the fixed jaw independently of the screw movement and subsequently thrown into operative engagement with the screw movement to effect the final gripping of the jaws against the object to be held thereby.

To these ends my invention consists of certain details of construction, all of which will be fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation, partly in section, of my improved vise. Fig. 2 is an end elevation of the same. Fig. 3 is a vertical transverse section of Fig. 1, taken in the line $x x$; and Fig. 4 is a similar section taken in the line $y y$.

Referring to the drawings, 1 is the fixed jaw, having the cylindrical shank 2, adjustable in a vertical plane in the horizontal cylindrical socket 3, rigid with the base 4.

5 is the movable jaw, provided with the inverted channel-shaped shank 6, movable in the rectangular socket 7 in the shank 2 of the fixed jaw 1.

Upon a table 8, rigid with jaw 1, rises a rigid rectangular cage 9, having upon its floor the centrally-arranged depressed channel 10. In this cage 9 is slidably engaged the rectangular bar 11, having upon its under face the spaced transverse serrations 12, narrower than the width of the bar 11 and adapted to slide within the depressed channel 10 in the cage 9.

13 is the operating-screw in adjustable engagement with the screw-threaded socket 14 in the bar 11. The shank 15 of this screw 13 extends outside the outer end of the movable jaw 5 and carries the turning-lever 16. The shank 15 has a reduced section 17, into which projects the screw 18, which limits the play of the movable jaw under the action of its operating-screw 13. A collar 19, rigidly secured to shank 15, holds such shank 15 against withdrawal from the movable jaw 5.

In the table 8 is a vertical recess 20, in which plays the locking-block 21, having on its upper face the serrations 22, adapted for engagement with the serrations 12 on the bar 11. In the lower end of this block 21 is the open recess 23, adapted for the reception of the eccentric-pin 24 on the inner end of the shank 25, seated in the table 8 and having on its outer end the lever 26.

27 is a rod in screw-threaded engagement with the cage 9, around which the spiral spring 28 loosely rests.

29 is a plate attached to the end of the bar 11 by the screw 30. This plate extends down below the rod 27, which passes loosely through the orifice 31 in the lower end of the plate 29.

In operating the device the lever 26 is allowed to hang down vertically, in which position the locking-block is out of engagement with the serrated bar 11. The movable jaw is thus free to be pulled out to the distance required, where by turning the lever 26 up in either direction the eccentric-pin forces up the locking-block 21 until its serrations engage with the serrations on the bar 11. Then by turning the lever 16 of the vise the jaws 1 and 5 can be gripped tightly upon the object placed between them. The limited play of the operating-screw 13 is all

that is necessary for the final gripping action of the jaws. When the movable jaw 5 is pulled out, the spiral spring 28 is compressed between the plate 29 and cage 9, so that when the jaws are moved apart by the lever 16 to release the object and the lever 26 is dropped down to its vertical position, thus releasing the locking-block 21 from engagement with the bar 11, the jaws 1 and 5 are caused to spring together.

It is apparent from the foregoing description that with my improved arrangement much valuable time is saved by the quick-acting adjustment of the jaws prior to the final gripping action, the two adjustments being rapidly and easily thrown in and out of engagement by the lever 26 actuating the locking-block 21.

I claim—

1. A bench-vise, comprising a fixed jaw having a cylindrical shank and an integral table formed therewith in advance of the shank, a cage formed integrally with and upon the table, a movable jaw having an inverted channel-shaped shank fitting in the shank of the fixed jaw and having a depending portion at its forward end, a slidable locking-bar arranged for longitudinal movement within the cage, the bar having a screw-threaded bore in its forward end and a serrated under surface, a rod connected with the cage and extending rearwardly thereof beneath said bar, a connection between the bar and rod at the rear end thereof, a coil-spring associated with the rod between the rear end of the cage and the said connection, a slidable locking-block arranged for vertical movement within the cage, the upper face of

the latter being serrated to cooperate with the serrations in the under face of the aforesaid bar, a cam-lever associated with the vertically-movable locking-block for raising and lowering the latter, and a turning-lever piercing the depending portion of the movable jaw and having screw-threaded engagement in the aforesaid bore of the locking-bar.

2. A bench-vise, comprising a fixed jaw having a cylindrical shank and an integral table formed therewith in advance of the shank, a cage formed integral with and upon the table, a movable jaw having an inverted channel-shaped shank fitted in the shank of the fixed jaw and having a depending portion at its forward end, a slidable locking-bar arranged for longitudinal movement within the cage, the bar having a screw-threaded bore in its forward end and a serrated under surface, a slidable locking-block arranged for vertical movement within the cage, the upper face of the latter being serrated to cooperate with the serrations in the under face of the aforesaid bar, a cam-lever associated with the vertically-movable locking-block for raising and lowering the latter, and a turning-lever piercing the depending portion of the movable jaw and having screw-threaded engagement in the aforesaid bore of the locking-bar.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

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Witnesses:

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