E. M. WALKER.

DOUBLE SWIVEL VISE.

APPLICATION FILED APR. 24, 1908..

903,345.

Patented Nov. 10, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

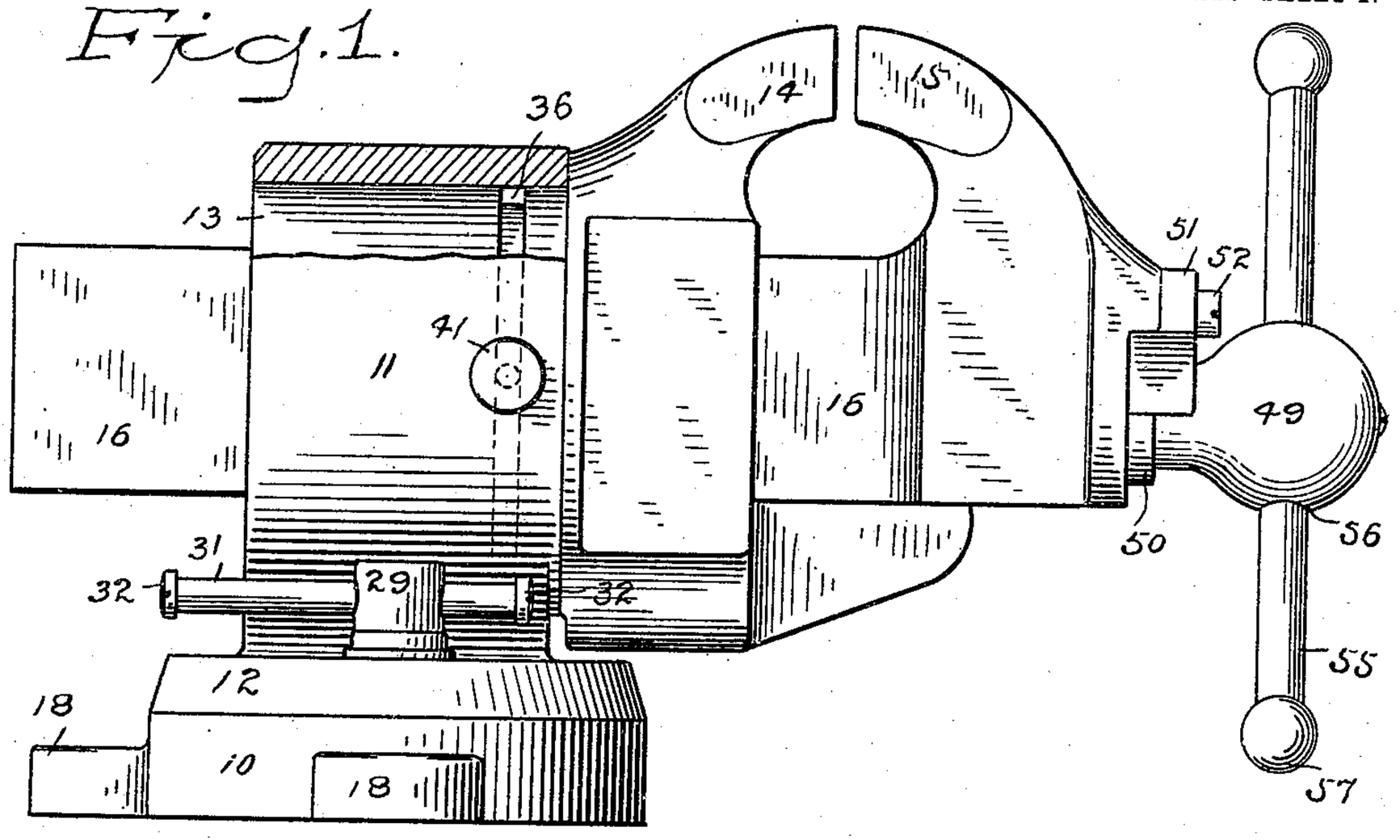

Fig. 2.

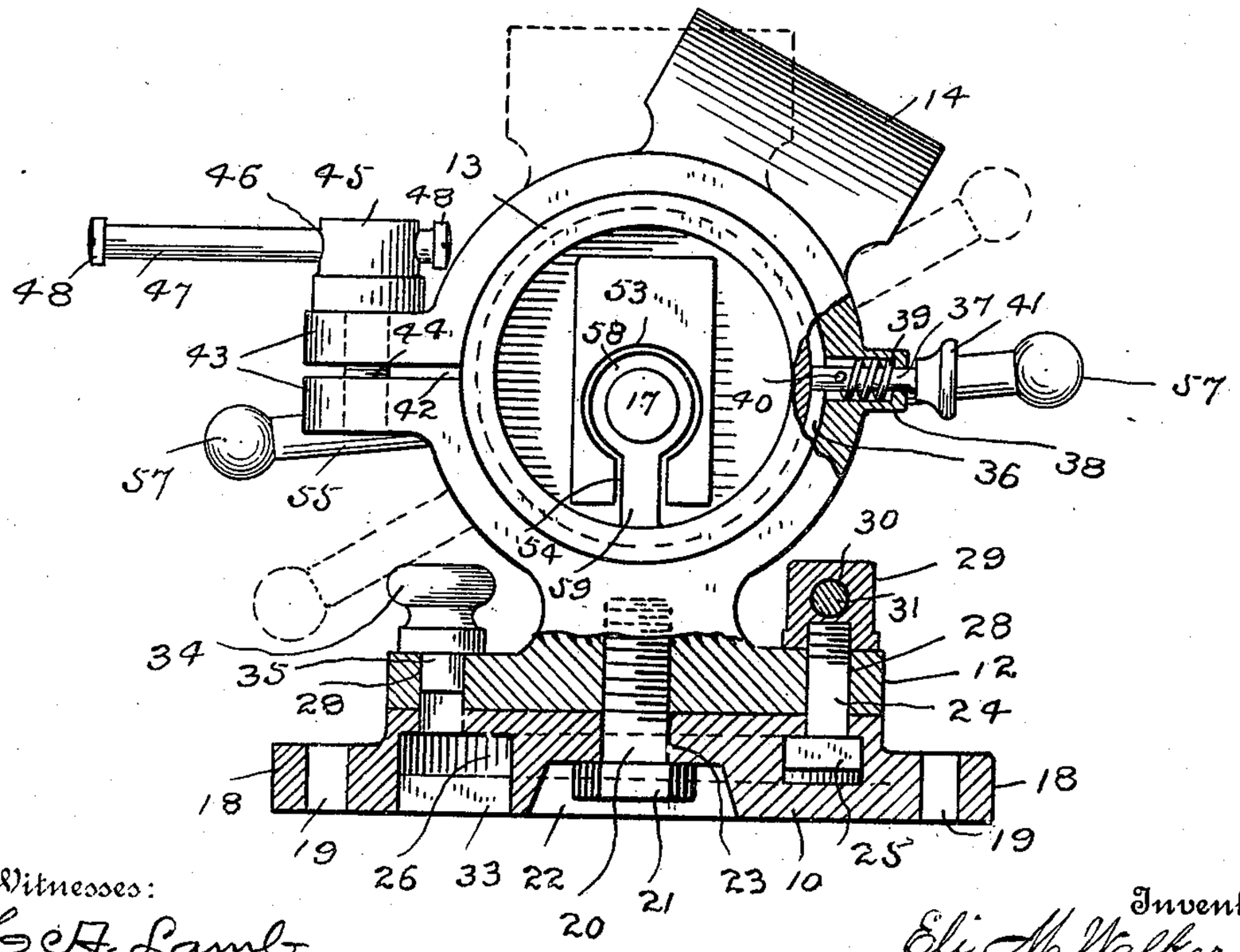

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Fig. 3.

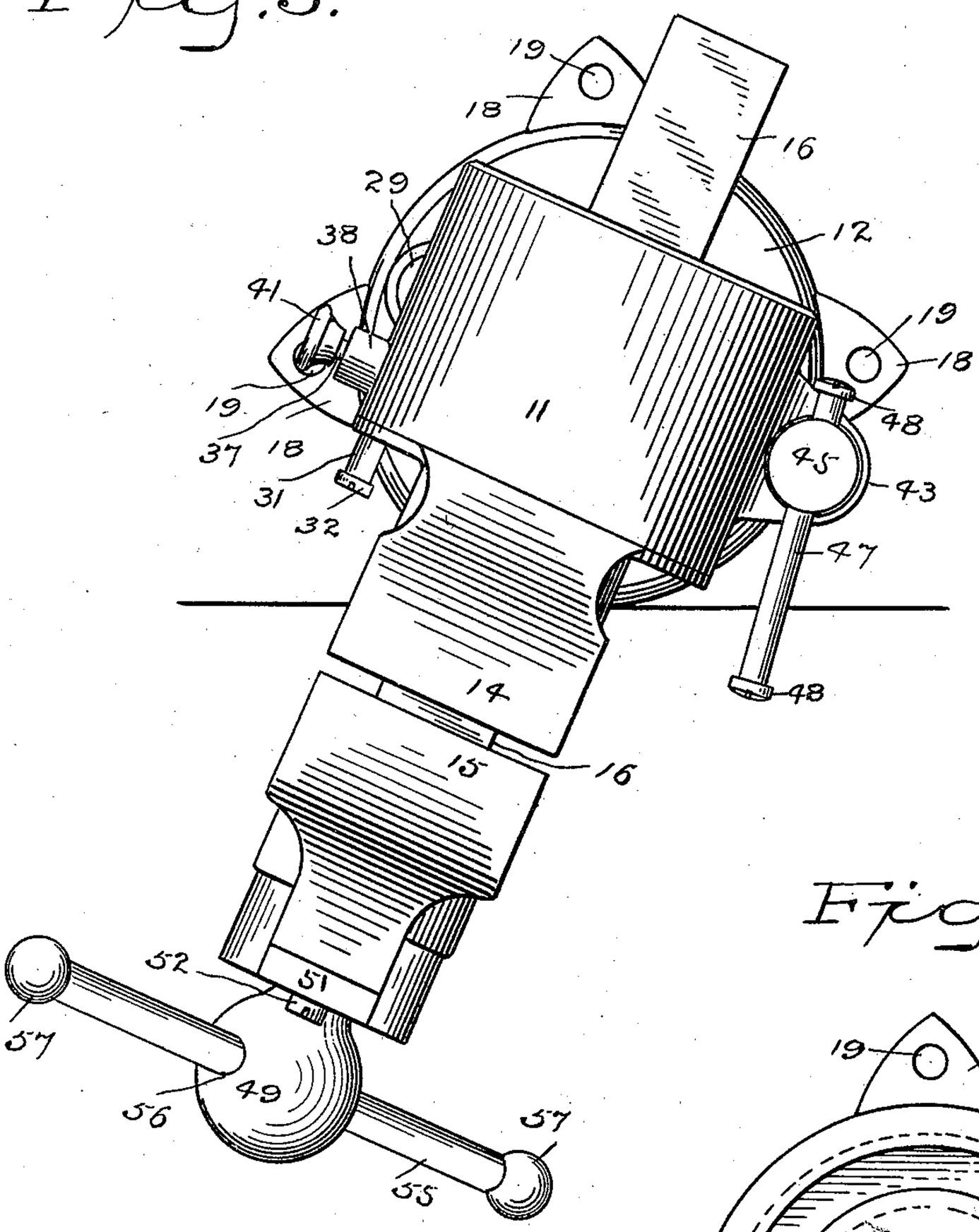
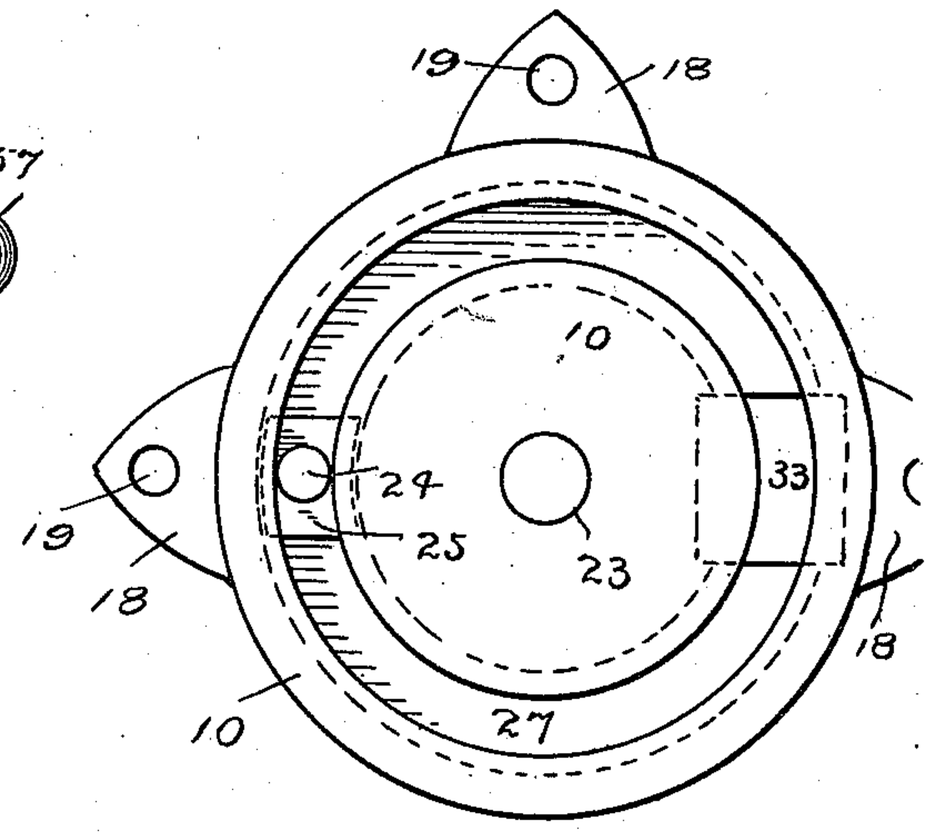


Fig. 4.



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UNITED STATES PATENT OFFICE.

ELI M. WALKER, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE CHARLES PARKER COMPANY, OF MERIDEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

DOUBLE-SWIVEL VISE.

No. 903,345. Specification of Letters Patent. Patented Nov. 10, 1908.

Application filed April 24, 1908. Serial No. 428,954.

To all whom it may concern:

Be it known that I, ELI M. WALKER, a citizen of the United States, residing at Meriden, county of New Haven, State of Connecticut, have invented a new and useful Double-Swivel Vise, of which the following is a specification.

This invention relates to double swivel vises and has for its object to provide a vise whose jaws may be oscillated in both the vertical and horizontal planes and which shall be provided with wholly independent means for locking the jaws in position after either adjustment. By that I mean that my novel vise is so constructed that after having placed the jaws at any required adjustment in the horizontal plane and locked them there, the adjustment in the vertical plane may be changed at the will of the operator and the jaws locked in any required position without affecting the lock upon the horizontal adjustment, and that having placed the jaws at any required vertical adjustment and locked them there, the horizontal adjustment may be changed without disturbing the vertical adjustment. I also provide that the locking means for the horizontal adjustment may be placed upon either side of the base to suit the requirements of special work or the convenience of right or left-handed operators and also means for detachably securing the hub to the barrel.

With these and other objects in view I have devised the simple and novel vise of which the following description in connection with the accompanying drawings is a specification, reference characters being used to indicate the several parts.

Figure 1 is a side elevation partly broken away of my novel vise complete; Fig. 2 an end elevation partly in transverse section as seen from the left in Fig. 1; Fig. 3 a plan view of the vise complete; and Fig. 4 is a plan view of the base with the operative parts removed.

10 denotes the base, 11 the barrel, 12 the flange of the barrel, 13 the hub which lies partly within the barrel, 14 the back jaw which is formed upon the hub, 16 the slide bar, 15 the movable jaw which is formed upon the slide bar and 17 the screw which extends longitudinally of the slide bar and engages a nut within the hub in the usual manner.

The base is provided with lugs 18 having holes 19 to receive bolts by which the vise is secured in place upon a bench or elsewhere. The barrel is secured to the base by means of a bolt 20 whose head 21 lies in a recess 22 in the under side of the base. This bolt passes freely through a hole 23 in the base and engages the barrel, thereby retaining the barrel in place but permitting free rotation of the barrel and flange on the base.

The lock for the horizontal adjustment consists of a bolt 24 whose head 25 lies in a circular undercut groove 26 in the base and whose shank passes through a circular slot 27 in the base, said slot communicating with the groove, and through either of two opposite holes 28 in the flange. The threaded upper end of this bolt is engaged by a nut 29 which is provided with a transverse hole 30 through which a lever 31 slides freely, the lever being provided with heads 32 which retain the lever in the nut but permit it to slide freely endwise.

33 is an opening in the underside of the base through which bolt 24 and its head are passed in assembling.

34 denotes an ornamental knob whose shank 35 engages the hole 28 in the flange not occupied by bolt 24. This knob has no function other than to fill the hole. The horizontal adjustment is effected by simply loosening nut 29 by means of lever 31 and turning the barrel and with it the hub and jaws to any required position for operation and then locking it there by tightening up the nut, it being understood of course that the shank of bolt 24 will slide freely in slot 27 and the head of said bolt will slide freely in undercut groove 26.

Should it be required to shift bolt 24 from one side to the other, the nut is loosened and the barrel and flange turned around until head 25 of the bolt is in alinement with opening 33 in the base; then nut 29 is removed from the bolt which permits the bolt to drop out; then base and barrel are turned halfway around until the other hole 28 in the flange comes into alinement with opening 33 when the bolt is again inserted and the nut placed thereon, knob 34 being transferred to the hole 28 from which the bolt has just been removed. The hub is provided with a circumferential groove 36 which lies within the barrel and the hub is detachably retained in the barrel by means of a pin 37 socketed in a hub 38 upon the exterior of the barrel and

provided with a head 41 for convenience in operation.

A spring 39, bearing against the base of the hub and against a pin 40 projecting from pin 37, forces pin 37 forward into engagement with the groove, thereby securely retaining the hub in the barrel but permitting rotation of the hub and convenient removal of the hub and jaws from the barrel by simply withdrawing pin 37 against the power of the spring.

The lock for the adjustment of the jaws in the vertical plane is effected by means of the spring of the barrel. The barrel is provided with a slot 42 which is placed opposite to spring pin 37 and with lugs 43 on opposite sides of the slot.

A screw 44 passes freely through the upper lug and engages the lower lug. This screw is provided with a head 45 which bears against the upper lug and is provided with a transverse hole 46 in which a lever 47 slides freely, the lever being provided with heads 48 which prevent its removal from head 45. To effect an adjustment of the jaws in the vertical plane, screw 44 is loosened and the hub and jaws oscillated to the required position for use, after which they are locked in position by tightening up the screw. It is an important feature of the present invention that this lock for the jaws after vertical adjustment is wholly independent of the lock for the horizontal adjustment.

The forward end of screw 17 is provided with a head 49 and a flange 50. A key 51 secured to the outer side of the sliding jaw by a screw 52 engages the flange and retains screw 17 in place while permitting free rotation thereof. This screw engages a nut 58 within the hub, said nut lying in a longitudinal opening 53 in the slide bar and being carried by a shank 59 which extends through a slot 54 in the under side of the slide bar. The screw is rotated to move the slide bar and sliding jaw in or out by means of a lever 55 which slides freely through a hole 56 in head 49 and is itself provided with heads 57 which retain it in the head of the screw.

Having thus described my invention I claim:

1. In a vise, the combination with a base, a barrel rotatable thereon and means for adjustably locking the barrel to the base, of a hub rotatable in the barrel and provided with a circular groove and a spring pin engaging the groove to detachably retain the hub in the barrel.

2. In a vise, the combination with a base, a barrel rotatably secured thereto and provided with a longitudinal slot and lugs on opposite sides thereof and means for locking the barrel to the base, of a hub provided with a circumferential groove lying within the barrel, jaws carried by the hub, a spring pin in the barrel which engages the groove to retain the hub in the barrel and a screw passing through one lug and engaging the other lug whereby the hub is locked at any adjustment in the vertical plane.

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

ELI M. WALKER.

Witnesses:
JAS. R. SLOANE,
WM. R. BAUMISTER.