

No. 890,725.

PATENTED JUNE 16, 1908.

B. A. SWENSON.
VALVE REMOVER.

APPLICATION FILED FEB. 24, 1908.

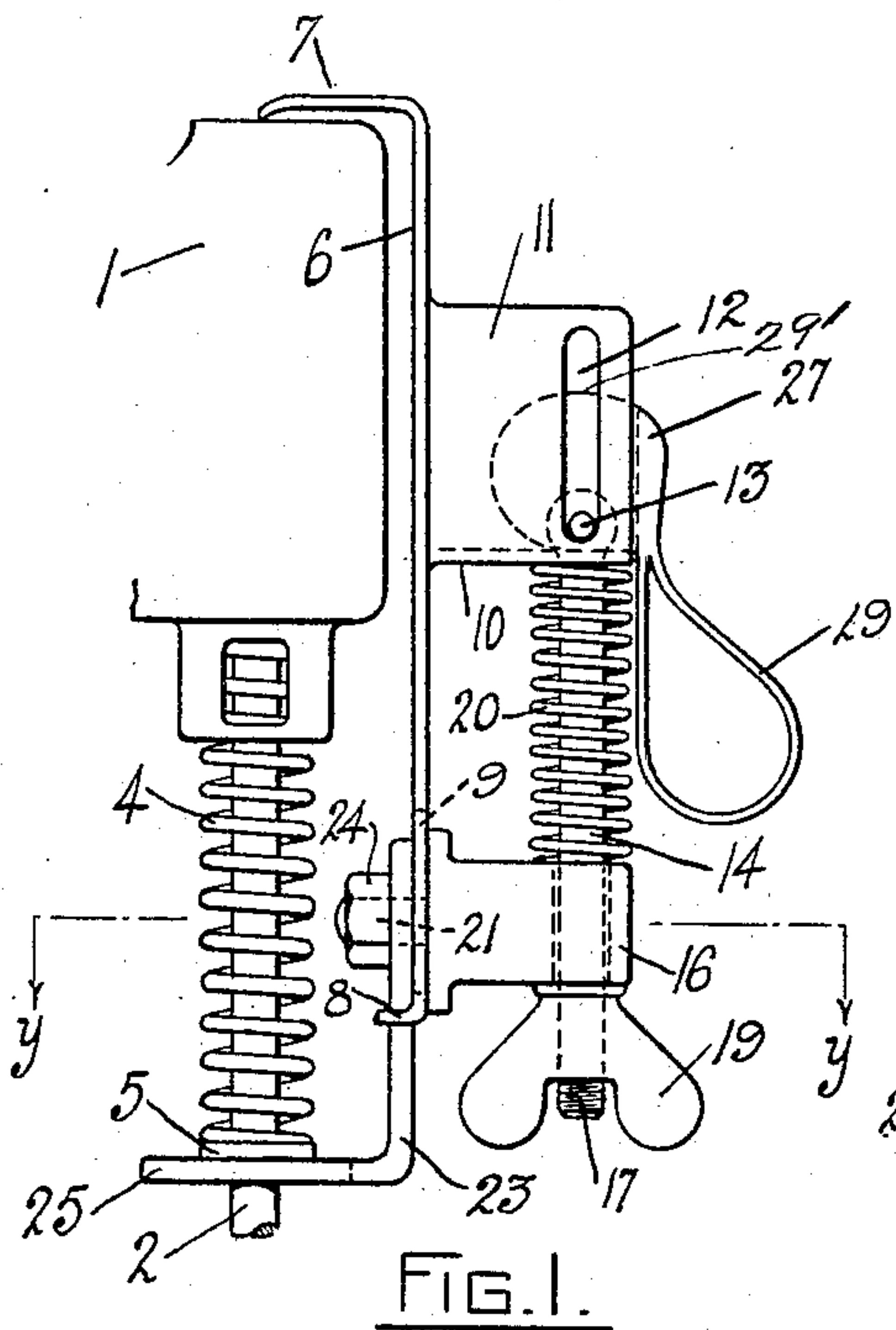


FIG. 1.

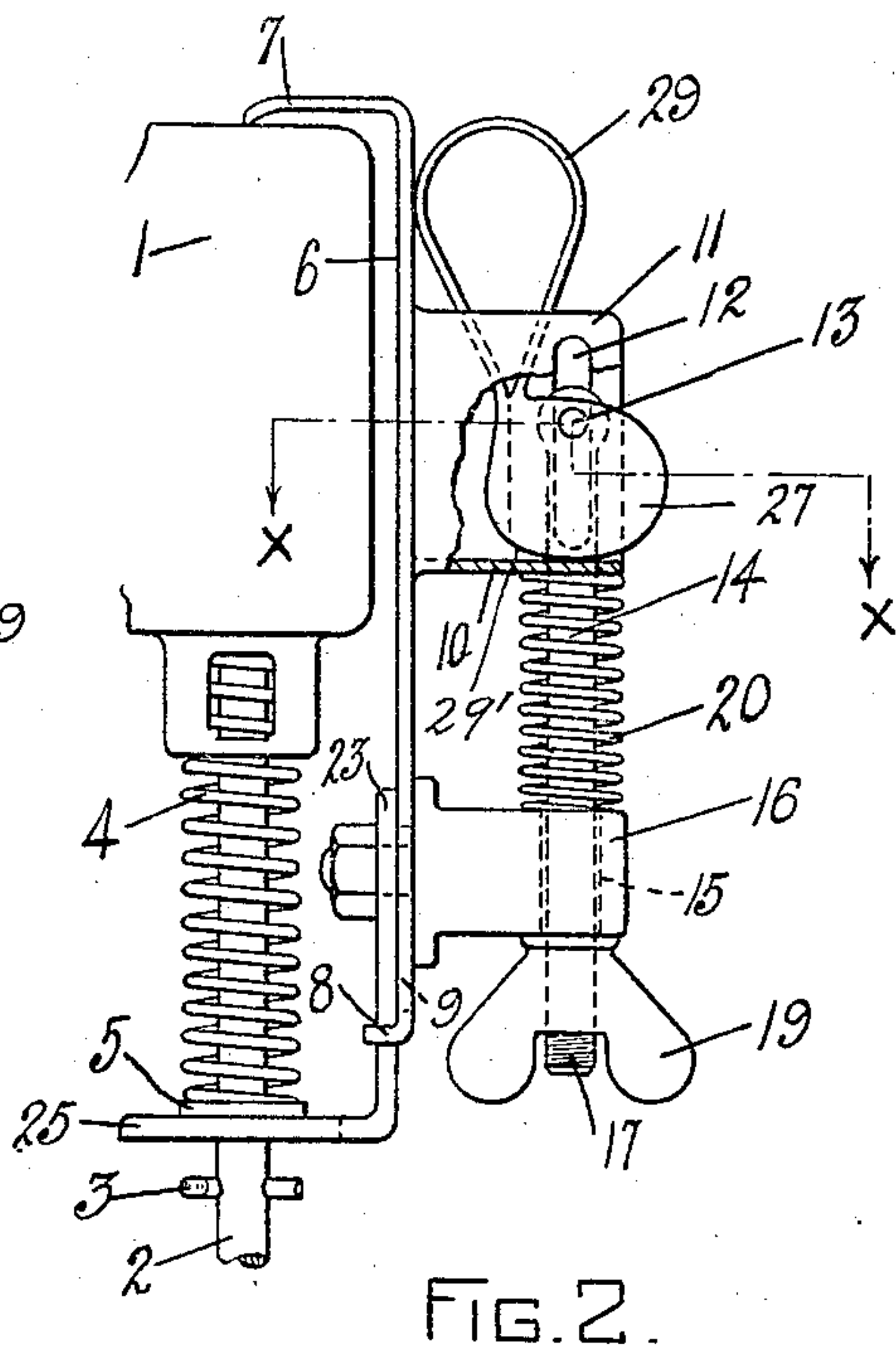


FIG. 2.

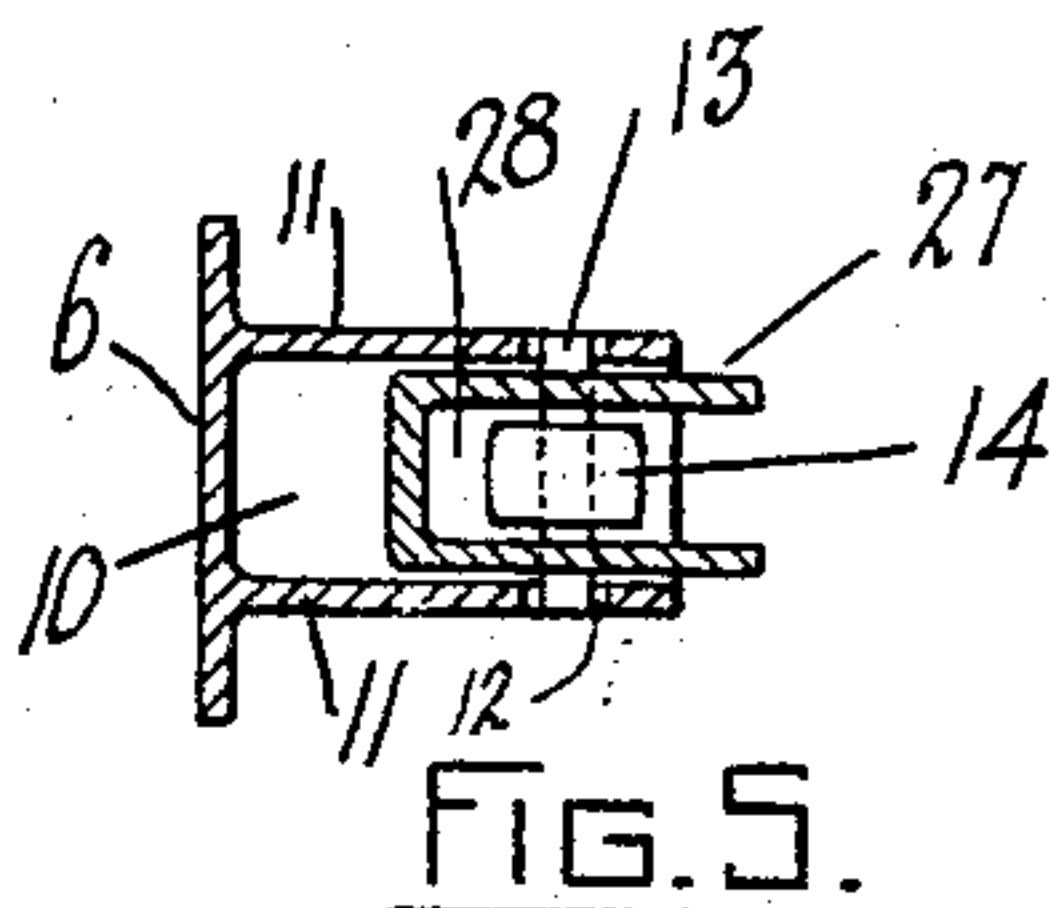


FIG. 5.

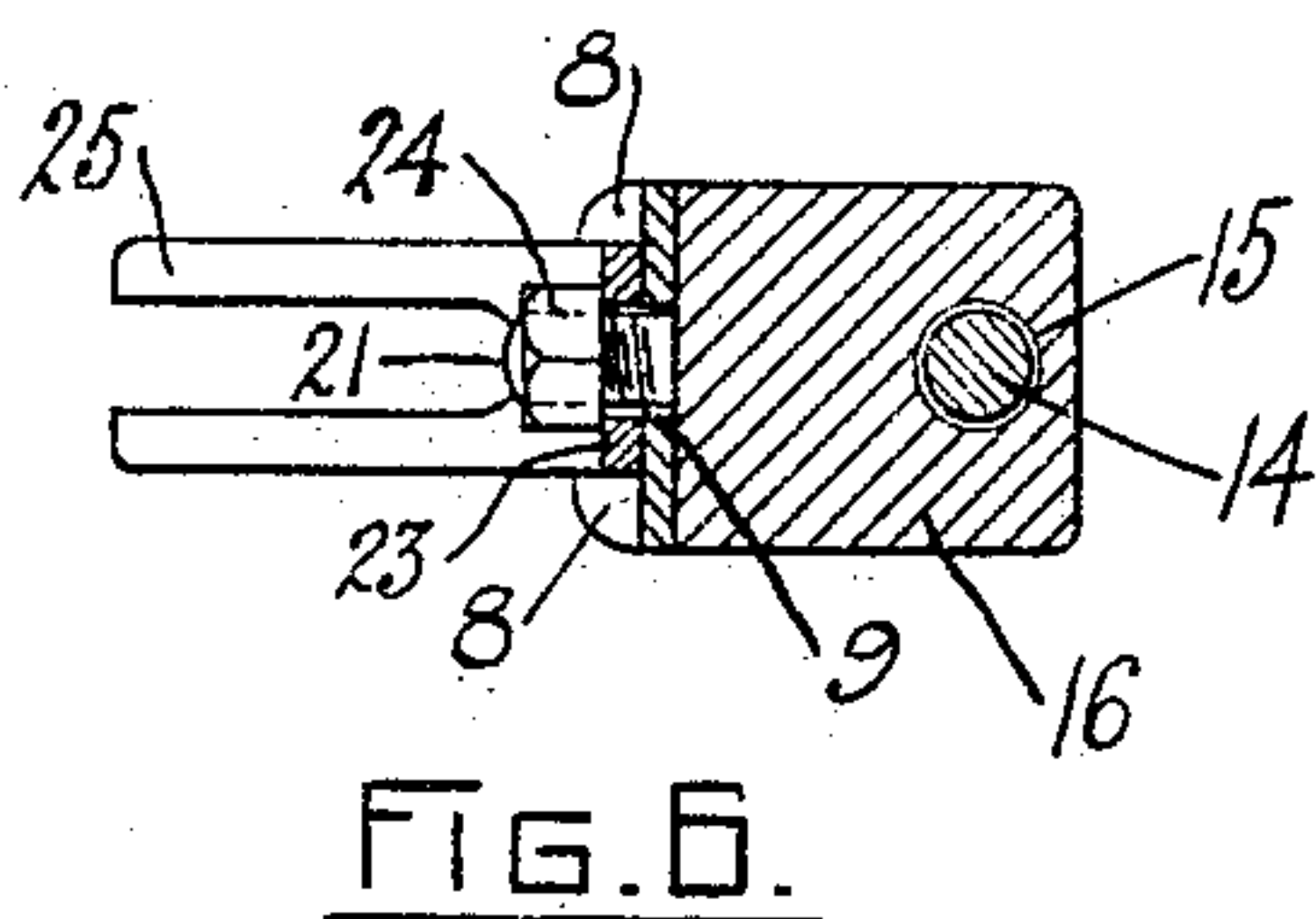


FIG. 6.

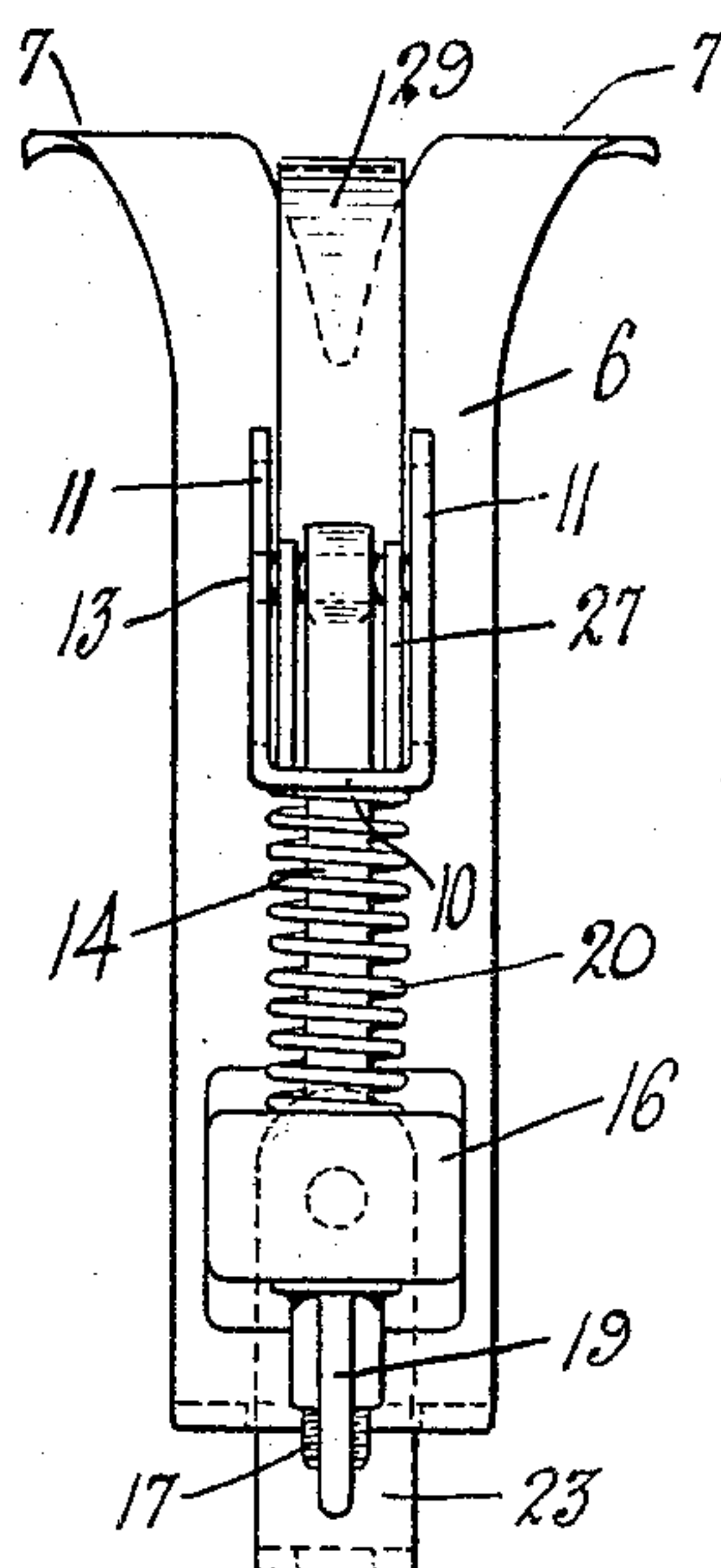


FIG. 3.

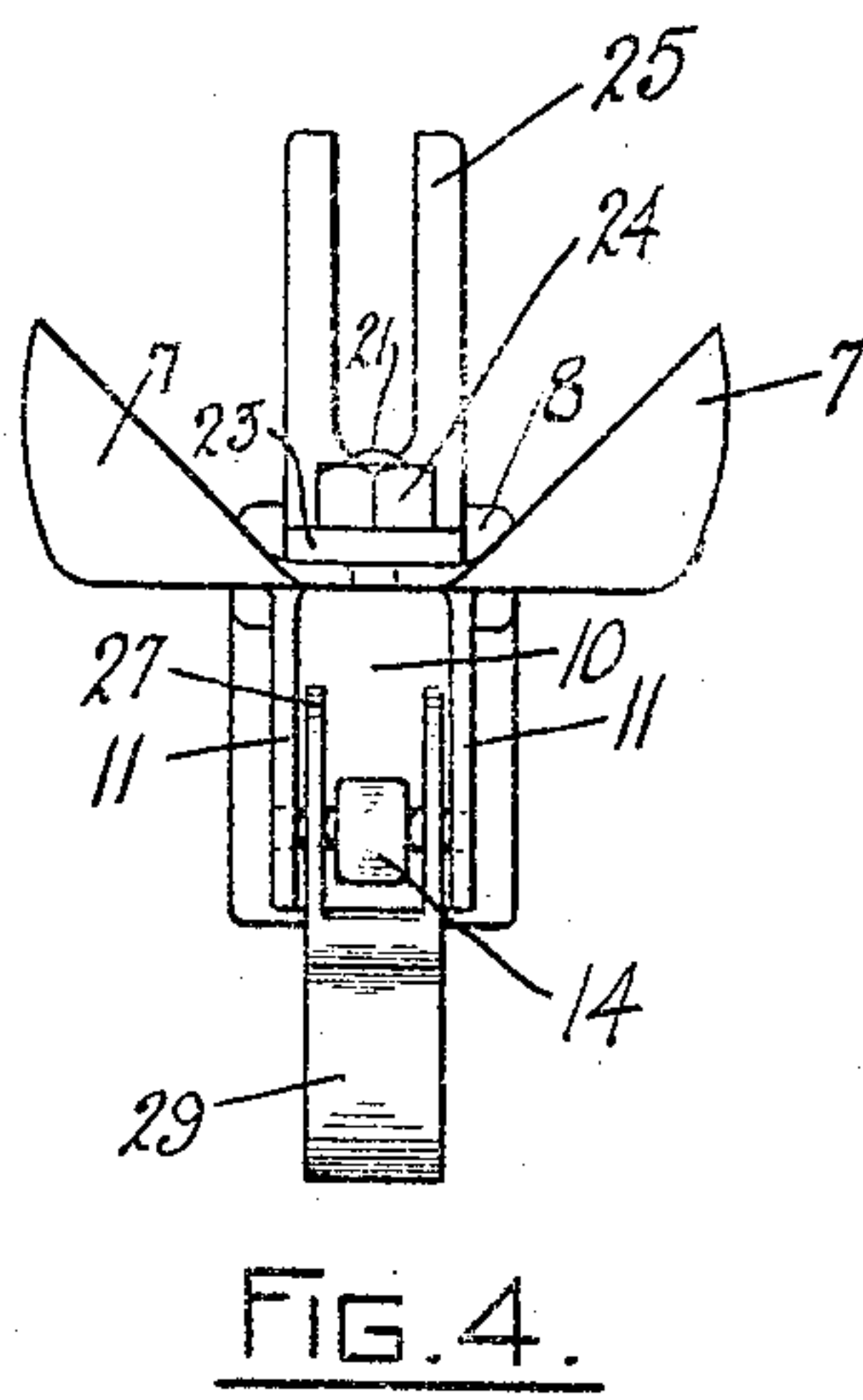


FIG. 4.

WITNESSES.

Albert G. Piegentkowski.
Robert E. Canphear.

INVENTOR.

Brendt A. Swenson
By Horatio E. Bellows
ATTORNEY.

UNITED STATES PATENT OFFICE.

BERNDT A. SWENSON, OF PROVIDENCE, RHODE ISLAND.

VALVE-REMOVER.

No. 890,725.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed February 24, 1908. Serial No. 417,260.

To all whom it may concern:

Be it known that I, BERNDT A. SWENSON, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Valve-Removers, of which the following is a specification.

My invention relates to devices intended to facilitate the removal, disassembling and assembling of the exhaust valve, cotter pin, and adjacent parts of motors, and is particularly adapted for shop use. Its objects are those usually sought in this class of devices; and the invention consists in the novel construction and combination of parts hereinafter described, and illustrated in the accompanying drawings, wherein

Figure 1 is a side elevation of device in operative position. Fig. 2, a like elevation in operative position. Figs. 3 and 4, rear and plan elevations respectively of the same, and Figs. 5 and 6, sections on lines *xx* and *yy* respectively of Figs. 2 and 1.

Like reference characters indicate like parts throughout the views.

My device is shown in conjunction with the usual motor parts, 1, the exhaust chamber, 2, the exhaust valve stem, 3, the cotter pin or key, 4, the valve spring, and 5 the spring washer.

My novel device comprises flat oblong body plate, 6, having horizontal forwardly directed bearing fingers, 7, upon its upper end and guide projections or lugs, 8, upon its lower end. The body, 6, is also provided with a vertically disposed slot, 9. Integral with the upper rear portion of the body is an extension comprising a horizontal base, 10, and parallel vertical side walls, 11, extending from each side of the base and provided with vertical slots, 12, in which register the ends of a horizontal pivot pin, 13; loose in the upper end of a vertical rod, 14, which passes loosely through an opening, 15, in a block, 16, and which is provided upon its lower portion with threads, 17. A threaded thumb nut, 19, engages the threads, 17, of the rod, 14, and abuts against the block, 16. A spiral spring, 20, surrounds the rod, 14, and abuts against the block, 16, and the extension base, 10. Fixed in the block 16, is a threaded pin or projection, 21, which passes through the slot, 9, and through an opening, 22, in a slide plate, 23, and has upon its end

a retaining nut, 24. The vertical slide, 23, passes between the guides, 8, and has a horizontal forwardly extending bifurcated foot, 25.

Fixed to the trunnion or pivot pin, 13, off center is a cam, 27, in this instance recessed as at 28, as shown in Fig. 5, and provided with a downwardly extending handle, 29. The trunnion is located near the bottom of the cam near the handle. The opposite or top portion of the cam face is slightly flattened as at 29'.

The compression spring, 20, is convenient, but not essential; and the bearing fingers, 7, may be of any desired dimension and outline adapted to the contour of a particular make of exhaust chamber.

To operate my device it is applied, as shown in Fig. 1, with the shoe or fork, 25, beneath the washer, 5, and the bearing members, 7, upon the exhaust chamber, 1. The handle, 29, is then elevated to the position shown in Fig. 2, reversing the cam and bringing the portion, 29', to rest upon the base, 10, whereby the cam is locked in its elevated position. The elevation of the handle, 29, raises the rod, 14, block, 16, plate 23, and forked projection, 25, compressing the valve spring, 4, whereby the cotter pin, 3, may be removed, and the valve parts be disassembled. The distance of the fork, 25, from the fingers, 7, may be increased or diminished by adjusting the nut, 19.

What I claim is,

1. In a valve remover, the combination with the body, of supporting means upon the upper portion of the body, a forked member slidably mounted in the lower portion of the body, and cam means upon the body operatively connected with the forked member for actuating said member.

2. In a valve remover, the combination with the body, of supporting means upon the upper portion of the body, an extension upon the body, an operating cam mounted upon the extension, a slidable block upon the body, operative connections between the cam and the block, and a forked member slidably mounted upon the body and fixed to the block.

3. In a valve remover, the combination with the body, of supporting means upon the upper portion of the body, an extension upon the body, an operating cam mounted upon the extension, a slidable block upon the body,

a rod connecting the cam and block, and a forked member slidably mounted upon the body and fixed to the block.

4. In a valve remover, the combination
5 with the body, of supporting means upon the upper portion of the body, an extension upon the body, an operating cam mounted upon the extension, a slidable block upon the body,
10 means upon the rod for adjusting the block with relation to the extension, and a forked member slidably mounted upon the body and fixed to the block.

5. In a valve remover, the combination
15 with the body, of an engaging flange upon the upper portion of the body, guides upon the lower portion of the body, an extension upon the body comprising a base and side walls provided with slots, an operating cam
20 resting upon said base, a pivot pin in the cam registering in the slots; a slidable block upon the body below the extension provided with an opening, a rod traversing the opening and pivoted at one end to the pivot pin, an

adjusting nut upon the rod adapted to bear 25
against the lower face of the block, a projection upon the block, and a fork member fixed to the projection and movable in the guides.

6. In a valve remover, the combination
with the body, of supporting means upon the 30
upper portion of the body, an extension upon the body comprising a base and side walls provided with slots, an operating cam having its lower face portion resting upon the base, and provided upon its upper face with a flat- 35
tened portion, a pivot pin in the cam off center and registering in the slots, a slidable block upon the body, a rod connecting the pivot pin and block, and a forked member
40 slidably mounted upon the body and fixed to the block.

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

BERNDT A. SWENSON.

Witnesses:

HORATIO E. BELLOWES,
JOSEPH E. BURNS.