

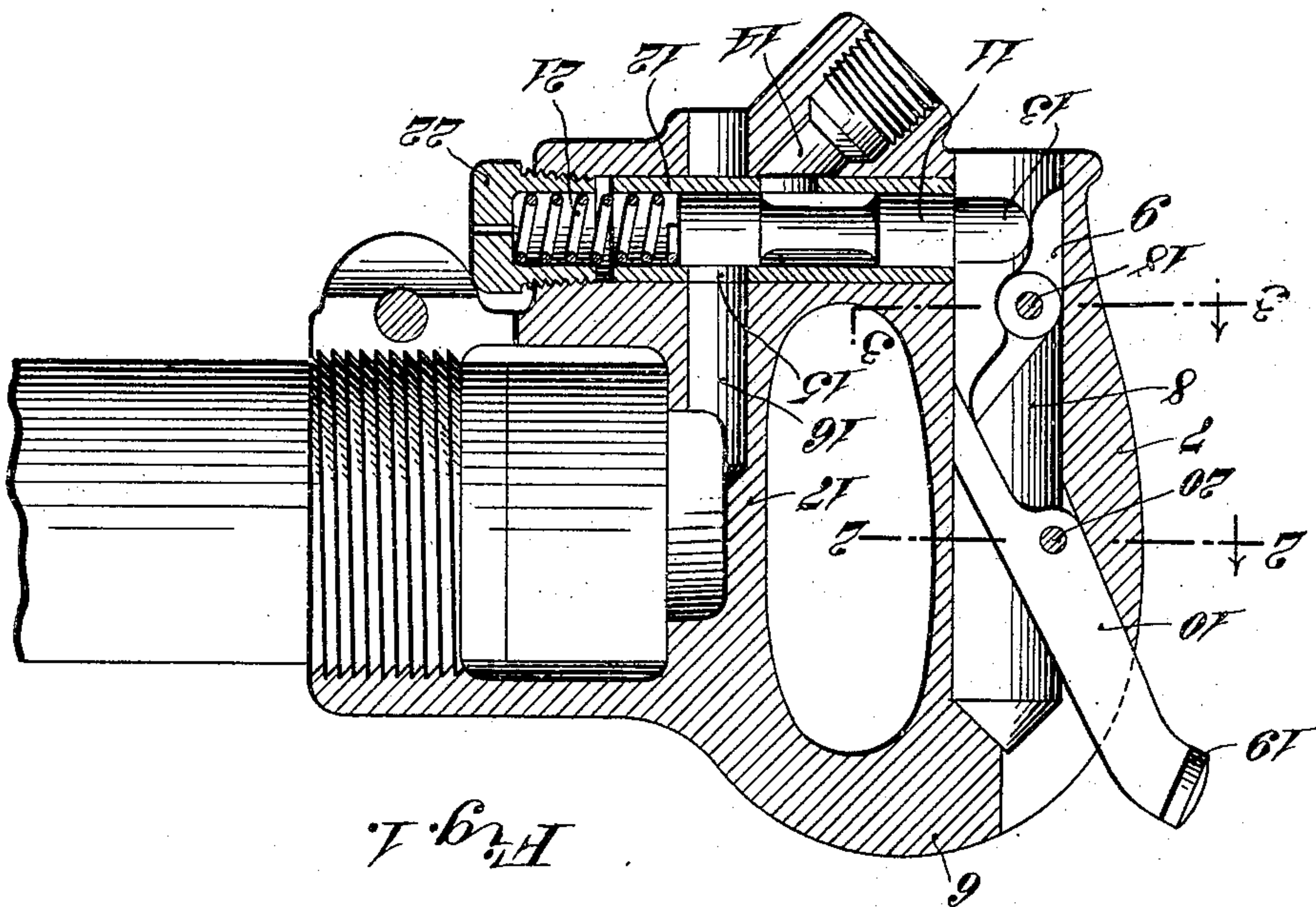
920,631.

THROTTLE VALVE MECHANISM,
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Patented May 4, 1909.



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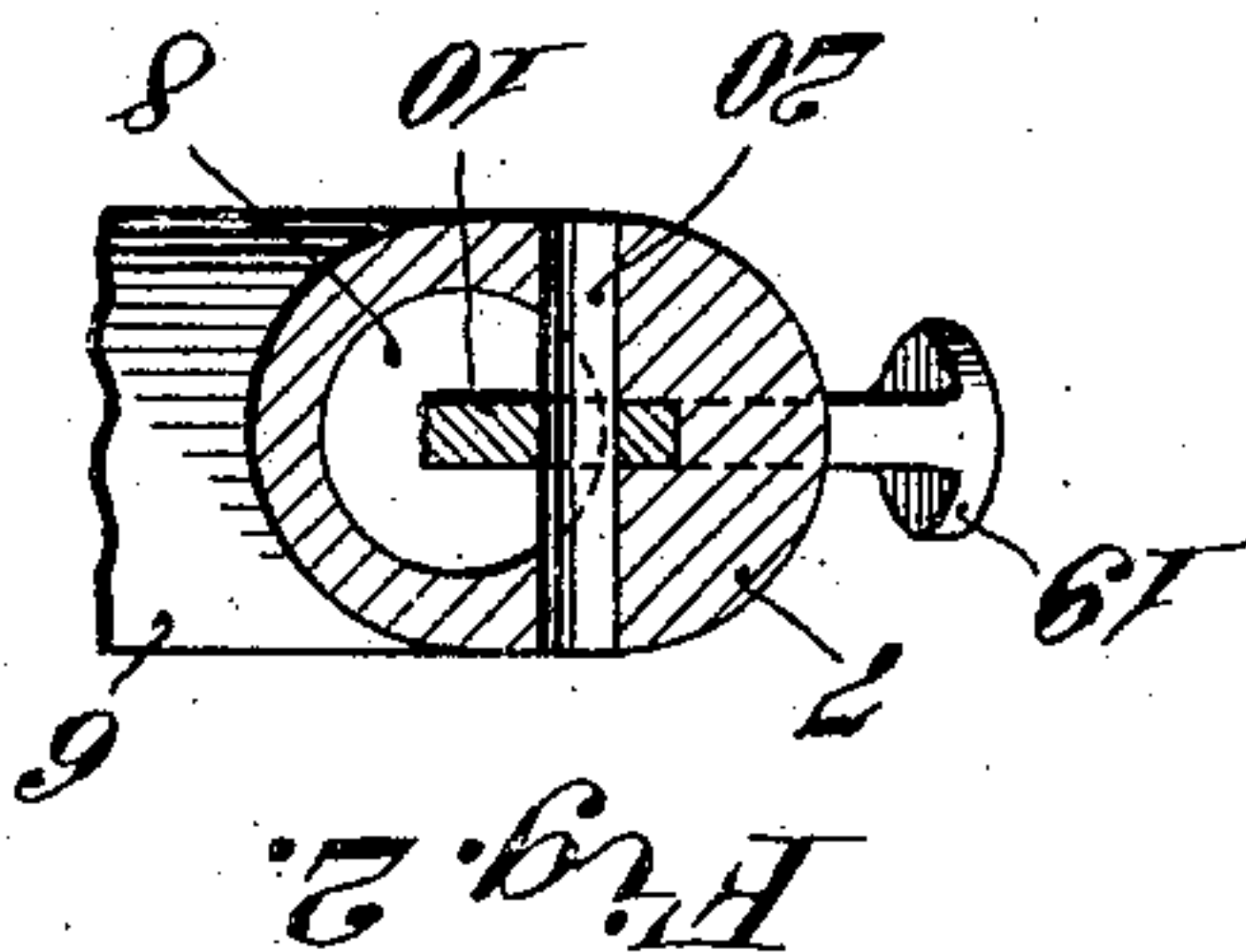
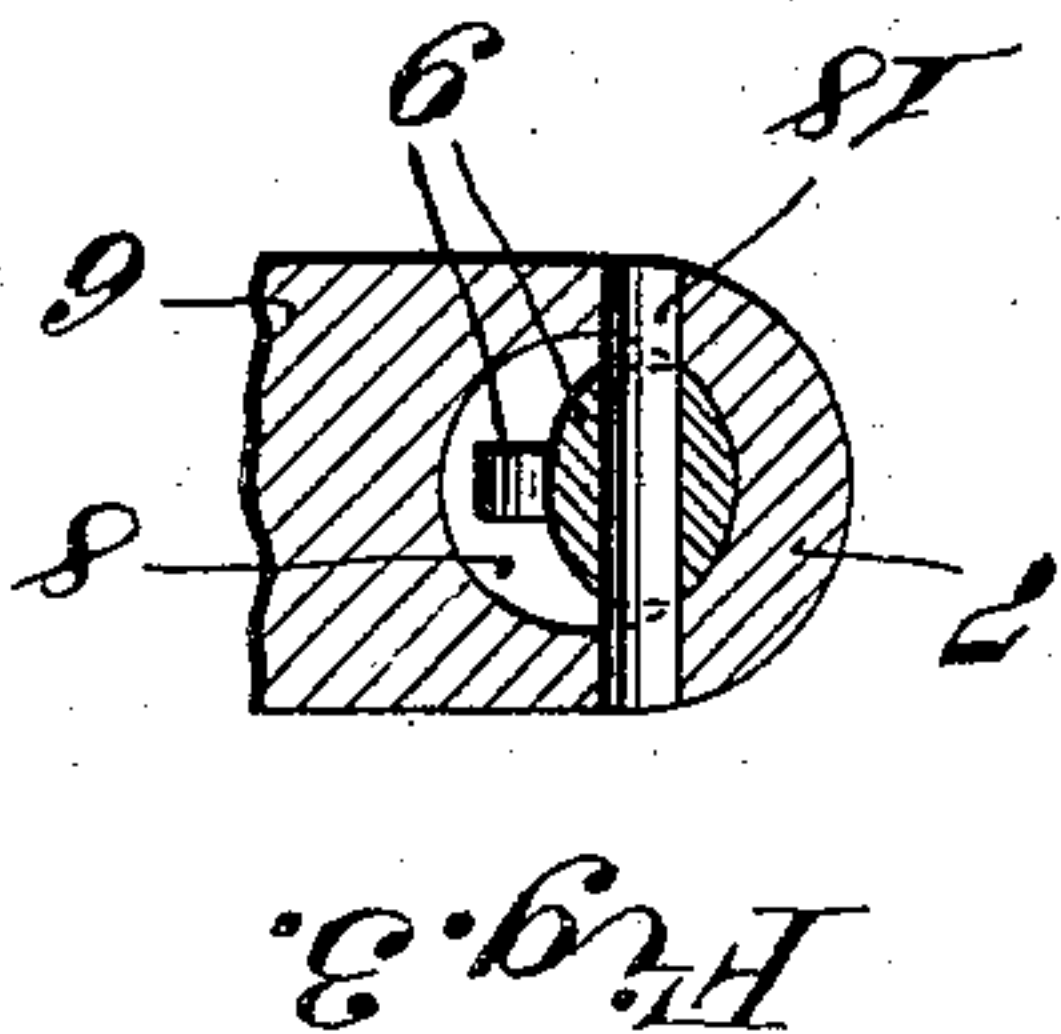


Fig. 2.



Fr. g. 3.

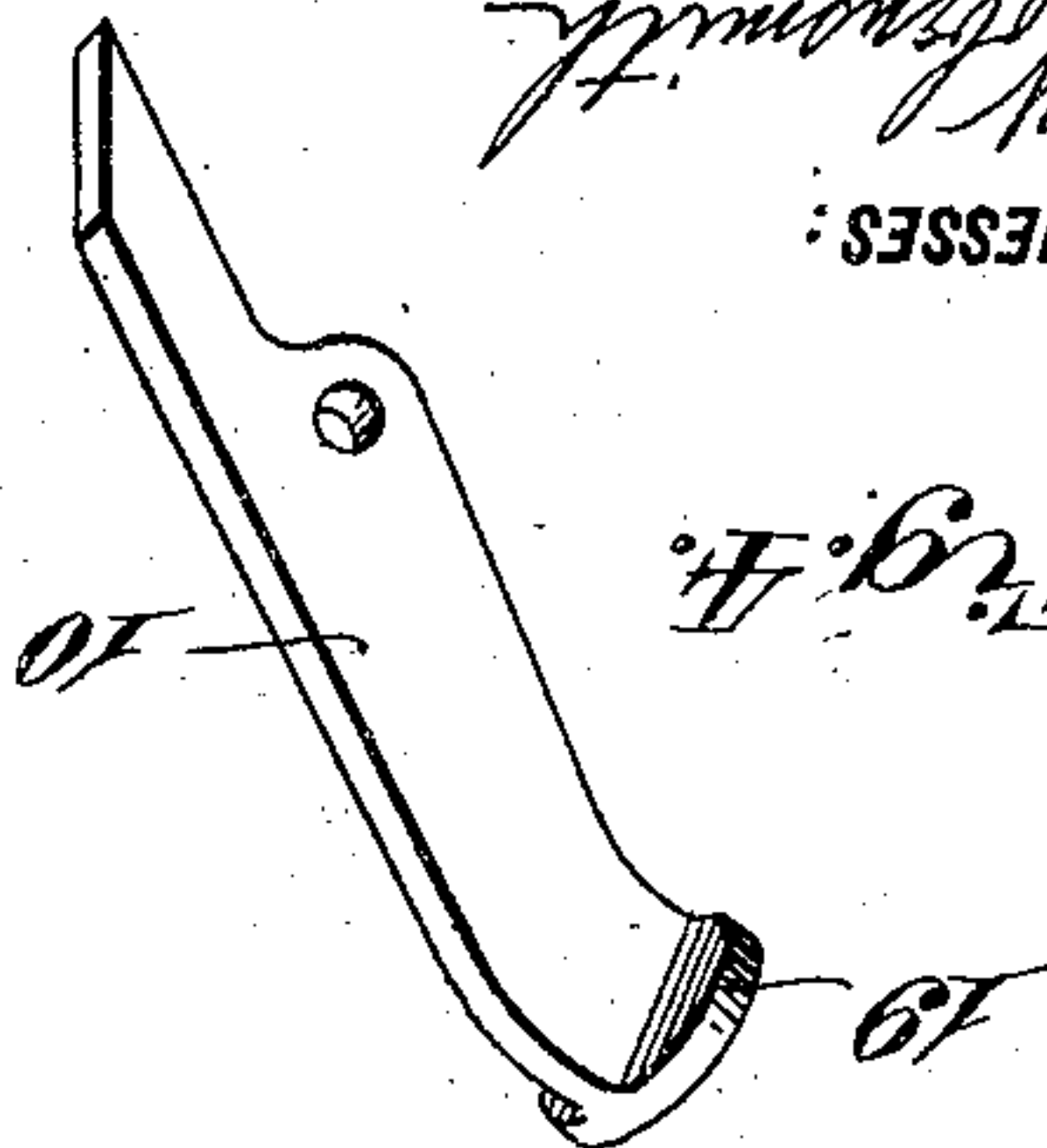


Fig. 7.

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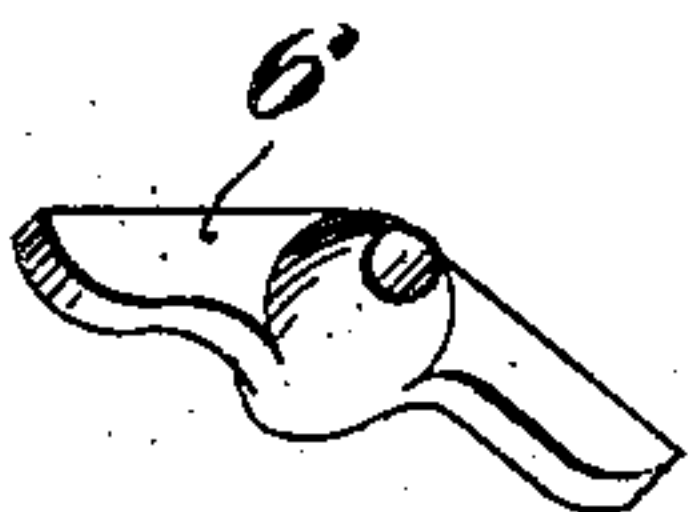
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UNITED STATES PATENT OFFICE.

SAMUEL OLDHAM, OF PHILADELPHIA, PENNSYLVANIA.

THROTTLE-VALVE MECHANISM.

No. 920,631.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed September 28, 1907. Serial No. 395,020.

To all whom it may concern:

Be it known that I, SAMUEL OLDHAM, a citizen of the United States, residing at Frankford, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Throttle-Valve Mechanism for Pneumatic Hammers, of which the following is a specification.

My invention has relation to a throttle valve mechanism for controlling the entrance of live motive fluid to the interior of a pneumatic tool and in such connection it relates more particularly to the construction, arrangement and location of the parts of the throttle mechanism whereby there is secured a mechanism of extreme simplicity which is readily adapted for removal from the handle of the tool for repairs or renewal of parts and which is relatively stronger and more durable than heretofore.

The nature and scope of my invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which:

Figure 1 is a longitudinal sectional view of the handle of a pneumatic hammer illustrating in plan the throttle valve and its operating mechanism. Fig. 2 is a cross-sectional view taken on the line 2—2, of Fig. 1. Fig. 3 is a cross-sectional view taken on the line 3—3, of Fig. 1, and Figs. 4 and 5 are perspective views of the two operating levers for the throttle removed from the handle.

Referring to the drawings, 6 represents the handle of a pneumatic tool, the grasping portion 7 of which is drilled out as at 8, and the upper portion of the drilled out hole 8 is in slotted communication with the exterior, as clearly shown in Fig. 1 of the drawings. The throttle valve 11 slides in a cylinder or case 12 inserted in a drilled opening in the handle below the grasping portion 7 thereof, and one extremity of the throttle valve 11 is provided with a knob or projection 13 extending into the opening 8 of the grasping portion 7 of the handle 6. Knob 13, in the inoperative condition of the pneumatic tool, rests against one arm of a lever 9 which is pivotally mounted in the opening 8 on a pin 18 extending through opening 8 between the sides of the grasping portion 7 of the handle. In this position of the apparatus, the rear side of the arm of

lever 9, against which knob 13 rests, is arranged to be seated against and supported by one wall of the opening 8. The other arm of lever 9 occupies a position at an angle to the arm against which knob 13 normally rests, and in the operative condition of the pneumatic tool, when the lever 9 is rocked on its pivot 18 to open the valve 11, then this end of lever 9 will be seated against the wall of opening 8. Lever 9 is actuated by means of a thumb lever 10, which is pivoted on a pin 20 extending through opening 8 between the sides of the grasping portion 7 of the handle; this lever 10 having its lower end engaging the free end of lever 9 and its upper end being provided with a button 19 for the manual control of the operator. In the inoperative condition of the tool, when the parts are in the position shown in Fig. 1 of the drawings, the lower end of lever 10 is seated against and supported by the wall of the opening 8, and its outer finger engaging end bears against and is supported by the end wall of the slot forming the communication between the opening 8 and the exterior of the handle. When the tool is in the operative condition, then the outer finger engaging end of lever 10 will bear against and be supported by the other end wall of the slot which forms the communication between opening 8 and the exterior. A port 14 for live or motive fluid penetrates the valve case 12, and communicates through the opening 15 (when the valve is open) with a port 16 extending in the base 17 of the handle to the interior of the tool. Valve 11 is of the balanced piston type and is held in its normal closed position, as shown in Fig. 1 of the drawings, by means of a spring 21, one end of which bears against the inner end of said valve 11, and the other end of which is seated in an adjustable screw cup 22.

It will be noted that by the foregoing arrangement, the lever 9 particularly, and lever 10 to some extent, are supported intermediate their ends by a solid and substantial part of the handle 7 other than their pivots, so that wear on the pivots resulting from the intense vibration existing in the apparatus during the operation of the same, is to a large extent eliminated. To still further assist in supporting the lever 9 for the purpose as aforesaid, said lever 9 is provided with an enlarged boss

surrounding the pivot aperture, which boss in cross section is curved to conform to the curvature of the opening 8, as clearly shown in Figs. 3 and 5 of the drawings. Furthermore, the levers for controlling the valve are well protected by being almost entirely surrounded on all sides by the grasping portion 7 of the handle.

Having thus described the nature and object of my invention what I claim as new and desire to secure by Letters Patent, is:

1. In a pneumatic tool, a handle having its grasping portion hollowed out to receive the throttle valve operating mechanism, a throttle valve arranged to slide in the handle and to project normally at one end into the hollowed grasping portion thereof, and two levers in operative engagement with each other, each pivoted intermediate its ends in the grasping portion of the handle, one of said levers resting upon the throttle valve and the other projecting beyond the handle, said levers being supported at points other than their pivots intermediate their ends in their limit positions, substantially as and for the purposes set forth.

2. In a pneumatic tool, a handle having its grasping portion hollowed out to receive the throttle valve operating mechanism, a throttle valve arranged to slide in the handle and to project normally at one end into the hollowed grasping portion thereof, and two levers in operative engagement with each other, each pivoted intermediate its ends in the grasping portion of the handle, one arm of one of said levers bearing against the throttle valve on one side and seated against

the solid wall of the grasping portion of the handle on the other side in the inoperative condition of the tool, the other arm of said lever adapted to rest against the solid wall of the grasping portion of the handle in the operative condition of the tool, and the other of said levers projecting beyond the handle for the manual control of the operator.

3. In a pneumatic tool, a handle having its grasping portion hollowed out to receive the throttle valve operating mechanism, a throttle valve arranged to slide in the handle and to project normally at one end into the hollowed grasping portion thereof, and two levers in operative engagement with each other, each pivoted intermediate its ends in the grasping portion of the handle, one of said levers projecting beyond the handle for the manual control of the operator, and one arm of the other of said levers bearing against the throttle valve on one side and seated against the solid wall of the grasping portion of the handle on the other side in the inoperative condition of the tool, the other arm of said lever adapted to rest against the solid wall of the grasping portion of the handle in the operative condition of the tool, said lever having an enlarged boss surrounding the pivot aperture having an exterior contour conforming to the shape of the hollowed out portion of the handle.

In testimony whereof I have hereunto set my hand.

SAMUEL OLDHAM.

Witnesses:

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HENRY E. EVERDING.