To all whom it may concern:

Be it known that I, PHILIP H. LECKINGER, a citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Riveting-Machines or Hammers, of which the following is a specification.

The present invention relates to riveting machines or hammers, and more particularly to the type shown in U. S. Letters Patent No. 1,173,525, granted to me on February 29, 1916, in which a rotary and reciprocating tool or hammer is operated by a power-driven helve, an object of this invention being to improve the parts of the machine shown in the aforesaid patent so as to obtain greater durability and strength.

To this and other ends, the invention consists of certain parts and combinations of parts all of which will be hereinafter described, the novel features being pointed out in the appended claims.

In the drawings:

Figure 1 is a side view of a riveting machine constructed in accordance with the present invention;

Fig. 2 shows the helve, pitman and hammer, together with the connections between these parts, in side elevation as separated from the remaining portion of the machine;

Fig. 3 is another view of the connection between the pitman and the helve;

Fig. 4 is a section on the line 4—4, Fig. 2; and

Fig. 5 is a section on the line 5—5, Fig. 3.

Referring more particularly to the drawings, 1 indicates the base of the machine which supports the anvil 2 and the arm 3 which overhangs the anvil and has the hammer 4 guided therein for vertical movement, the hammer, as in the before mentioned patent, being guided through a worm wheel 5 which in turn is driven by a worm 6, the latter having a bell connection 7 with a pulley, not shown, on the drive shaft of the machine. The overhanging arm 3 also acts as a support for the helve which, in this instance, comprises a rocker portion 8 formed by a casting and a wooden portion 9 bolted to the casting or rocker portion 8, the rocker portion being pivoted at 10 on the overhanging arm 3.

A feature of this invention is an improvement in the connection between the hammer 4 and the helve. This improvement embodies a cushion 11 having an opening 12 therein, in which the upper end of the hammer 4 is fitted. The hammer preferably is reduced at 13 to fit within the opening 12, and is provided with an annular flange 14 on which the cushion 11 rests. Below the flange 14 a ring or collar 15 is provided, formed from compressed leather board or other suitable material. About the helve 9 a leather strap or other yoke 16, preferably of flexible material, is passed, the ends being secured together by a lacing 17. This strap has an opening 18 through which the hammer 4 passes so that the collar 15 may be engaged by the strap to support the collar and, through the flange 14, support the hammer 4, while at the same time permitting such hammer to rotate under the action of its rotating mechanism. The collar 15 takes up wear between the flange 14 and the strap 16. By connecting the cushion member 11 to the upper end of the hammer, the cushion is positively held in place against displacement, and the flexible or leather strap 16, while serving as a yoke to hold the hammer to the helve, also acts to take up shocks due to the rapid oscillation of the helve. The helve is vibrated from the main drive shaft by means of a pitman which, by a collar 19, is connected to the main drive shaft.

Another feature of this invention is the connection between the pitman and the helve. The pitman in this instance embodies a rod 20 having its opposite ends screw threaded, with one end connected to the collar 19. On this rod two fixed cushion abutments 21 and 22 are provided, respectively, for the cushions 23 and 24. These cushions also have movable abutments which are, respectively, indicated at 25 and 26 and which are situated on opposite sides of the rocking member 8 of the helve. The rod 20 extends loosely through an opening 27 in the rocking member 8, and the opposite faces of the rocking member adjacent said opening 27 are provided with semicylindrical bearings 28, said bearings being disposed in opposite directions. With these cylindrical bearings 28 concave bearing faces 29 on the movable abutments 25 and 26 cooperate. By this arrangement, the motion of the drive shaft is, through the pitman 20, communicated to
the helve, the movable abutments 25 and 26 of the cushion devices acting to transmit such motion, and at the same time yielding to absorb any shocks and jars, and also rocking with reference to the helve to accommodate for the relative movement of the pitman and the helve.

The general operation of the invention is the same as that described in my former patent, and it will be unnecessary to illustrate and describe the same further. The present invention provides for securing the cushion between the helve and the hammer in such a manner that such cushion is not liable to separate from the machine. The hammer is also secured to the helve so that a fewer number of parts is required, and at the same time so that an easier action is obtained. The connection between the pitman and the helve has been improved to reduce the number of parts and to strengthen such parts. The two cushion devices are each provided with movable abutments which bear directly upon the helve, and all bolts and nuts for securing the pitman to the helve are eliminated.

What I claim as my invention and desire to secure by Letters Patent is:

1. A riveting machine comprising a hammer, a helve, a member to which the helve is secured having bearings on opposite sides thereof, a pitman extending loosely through said member, cushions carried by the pitman on opposite sides of the member, and movable abutments for the cushions formed with bearings cooperating with the bearings of the member.

2. A riveting machine comprising a helve, a hammer having a surrounding flange, a cushion interposed between said hammer and the helve, and a flexible strap having an opening through which the hammer extends, said strap being passed about the helve and under the flange.

3. A riveting machine according to claim 2, combined with a washer surrounding the hammer between the flange and the strap.

PHILIP H. LECKINGER.