No. 816,540. PATENTED MAR. 27, 1906.

H. B. DOUGLAS.

MAGNETIC RIVET HOLDER.

APPLICATION FILED MAY 18, 1905.

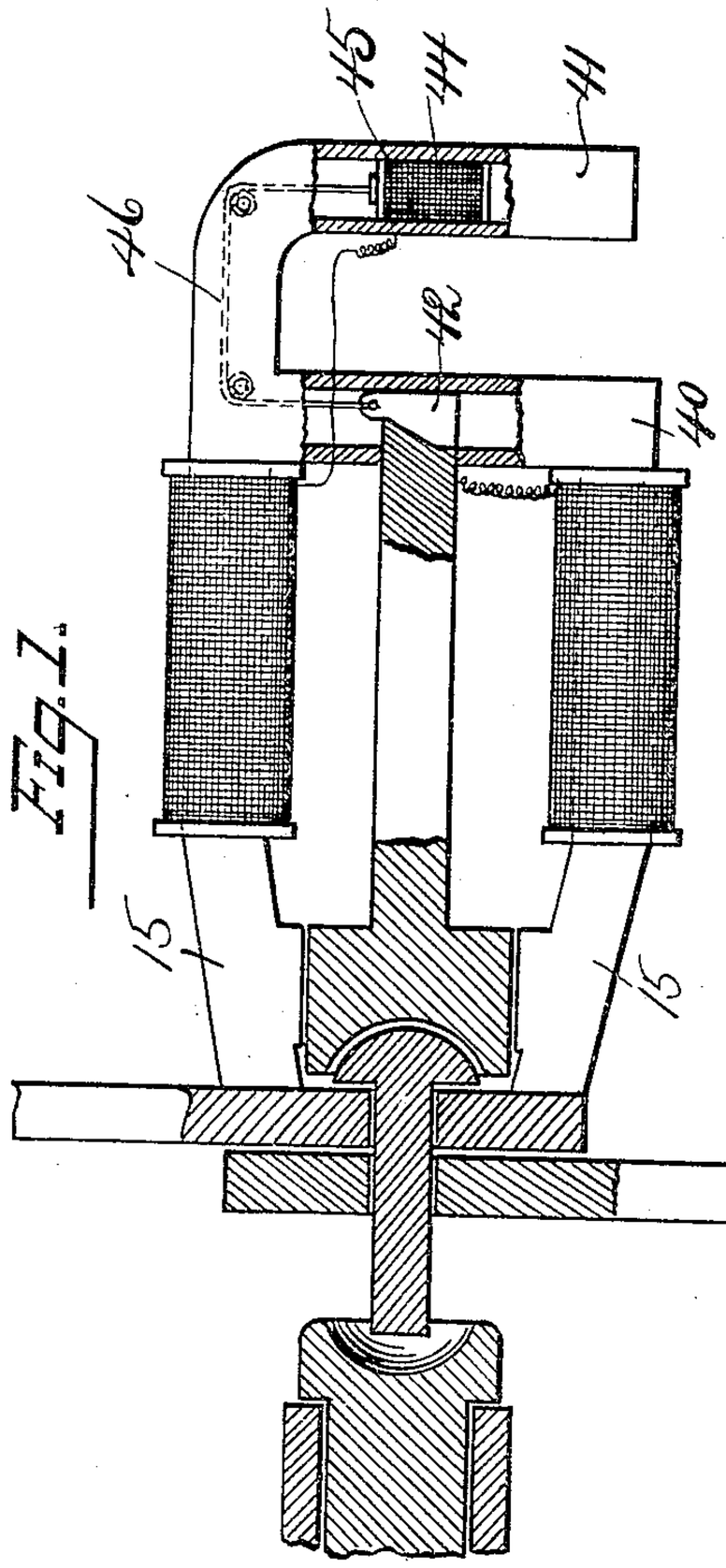

Fig. 1.

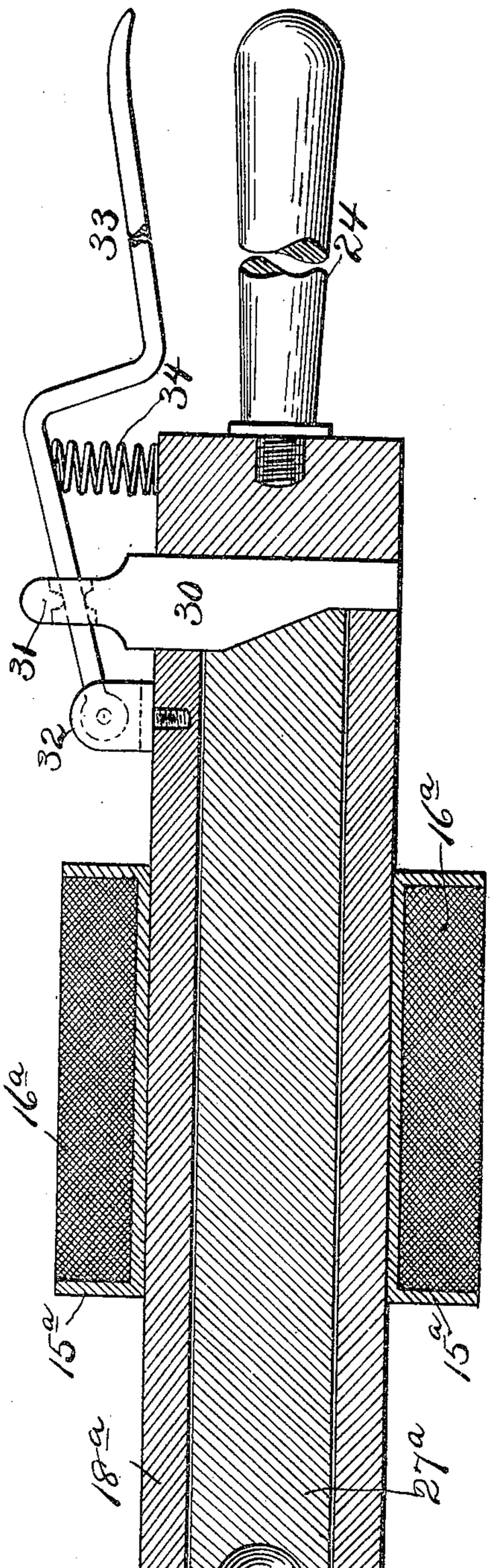

Fig. 2.

Witnesses
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HENDERSON B. DOUGLAS, OF BUTLER, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN S. DOUGLAS, OF BUTLER, PENNSYLVANIA.

MAGNETIC RIVET-HOLDER.

No. 816,540. Specification of Letters Patent. Patented March 27, 1906.

Original application filed December 2, 1904, Serial No. 235,203. Divided and this application filed May 18, 1905. Serial No. 261,022.

To all whom it may concern:

Be it known that I, HENDERSON B. DOUGLAS, a citizen of the United States, residing at Butler, in the county of Butler, State of Pennsylvania, have invented certain new and useful Improvements in Magnetic Rivet-Holders, of which the following is a description, reference being had to the accompanying drawings, and to the figures of reference marked thereon.

This invention relates to devices of that general class employed for holding or "bucking up" rivets during the upsetting or heading operation, and relates principally to improvements in holding-tools which are held in place by electromagnets.

One of the principal objects of the present invention is to provide a construction in which the die or set may be positively adjusted with relation to the holder to accommodate rivets of different size.

A further object of the invention is to provide a device of this class in which a wedge is employed to adjust the die or set and act as a rigid backing therefor and, further, to provide improved means for adjusting the position of said wedge.

With these and other objects in view, as will appear when the invention is more fully disclosed, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a magnetic die-holder constructed in accordance with the invention, and Fig. 2 is a similar view illustrating a slightly-modified construction of the device.

The present application is a division of an application for Letters Patent filed by me on December 2, 1904, Serial No. 235,203, Patent No. 800,994.

The electromagnet in the form shown in Fig. 1 is of the horseshoe type, and the two pole-pieces 15 are united by a cross-bar 40, that is preferably formed integral with a handle 41 of a type now used on pneumatic hammers and similar tools. Between the pole-pieces is guided a die or set of a size and shape corresponding to the work, and the rear end of the shank portion of the set is arranged in a suitable opening formed in the handle, the latter being hollow throughout. The rear end of the shank is inclined, and against it bears a wedge-shaped adjusting-block 42, which acts to hold the set up to the work. In the outer portion of the handle is arranged a wedge-adjusting device, this in the present instance being shown in the form of a solenoid 44, having a movable core 45, that is connected to the wedge by means of a flexible cord or chain 46, passing over suitable guides in the handle. The solenoid may be energized from any source, as by a shunt from the main circuit, in which the holding-magnet is connected; but its strength must of course be much less than the strength of the main magnet in order not to detach the latter. In operation the main magnet is adjusted to proper position relatively to the rivet, and then the solenoid is energized to effect the proper adjustment of the wedge and force the set properly up to the work.

In the construction shown in Fig. 2 the main magnet is of a different type, and the set or die is in the form of a core having an inclined rear face which is engaged by a wedge 30, that is guided in openings formed in the magnet. One end of the wedge is provided with an opening for the passage of a lever 31, pivoted to a bracket 32 on the magnet. The lever terminates in a handle 33, arranged adjacent to the main handle 24, and is normally held outward from the main handle by a compression-spring 34. To force the set or die outward, it is merely necessary to press the two handles together.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination, a magnetic holder, a die or set supported thereby, a wedge-block at the rear of the die or set, and an electromagnet for adjusting the wedge-block; substantially as described.

2. In combination, a magnetic holder, having a hollow handle, a die or set, a wedge-block for adjusting the same, a solenoid carried by the handle, and a solenoid-core having a flexible connection with said wedge-block; substantially as described.

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

HENDERSON B. DOUGLAS.

Witnesses:

JAMES O. CAMPBELL,

W. D. BRANDON.