P. J. HOFFMAN.

METAL PUNCHING MECHANISM FOR ANVILS.

APPLICATION FILED MAR. 4, 1915.

1,158,499.

Patented Nov. 2, 1915.

2 SHEETS—SHEET 1.

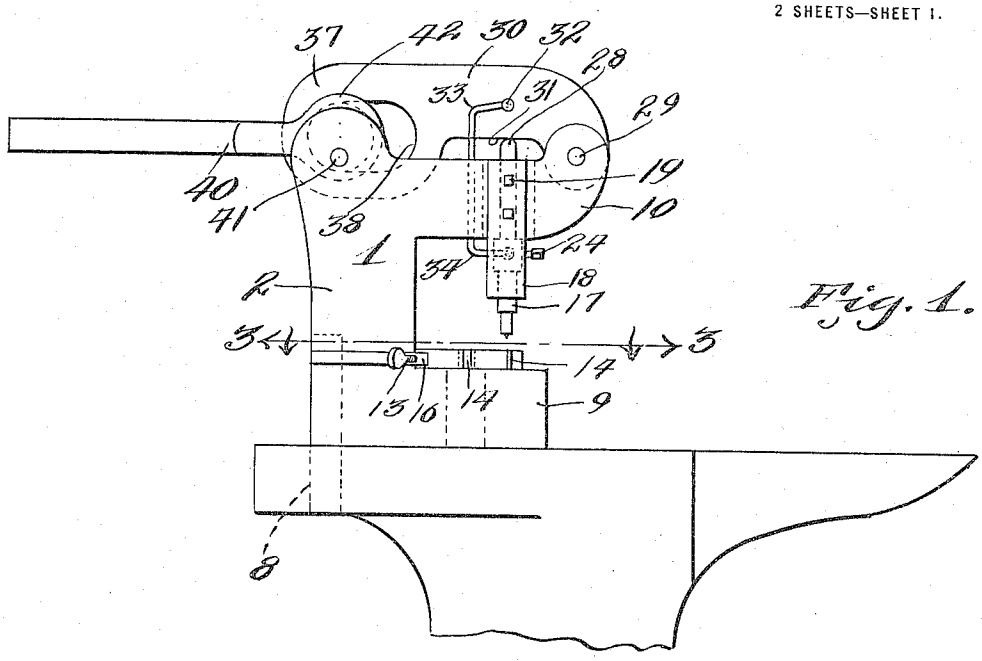


Fig. 1.

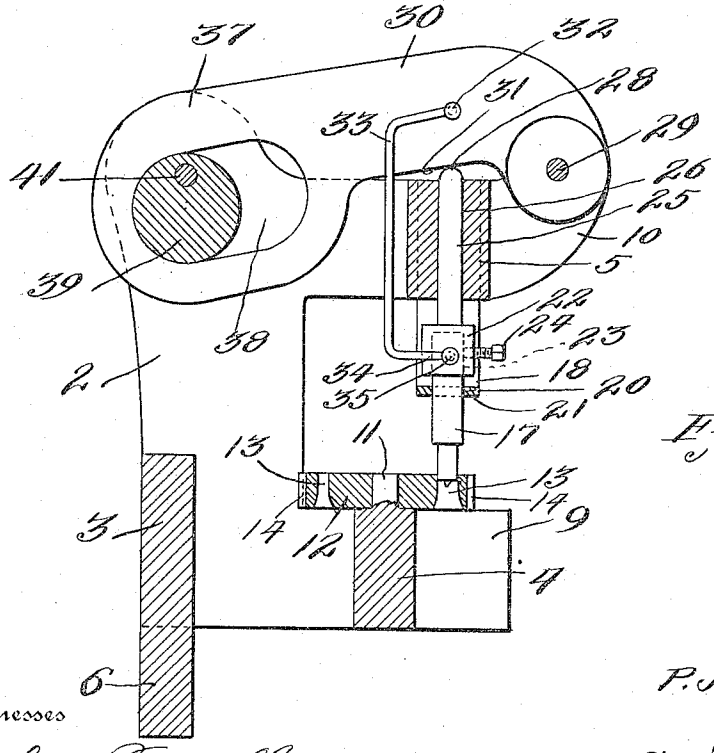


Fig. 2.

Witnesses

Philip Terrell

Francis I. Burwell

Inventor

P. J. Hoffman

By D. Swift & Co.

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

P. J. HOFFMAN.

METAL PUNCHING MECHANISM FOR ANVILS.

APPLICATION FILED MAR. 4, 1915.

1,158,499.

Patented Nov. 2, 1915.

2 SHEETS—SHEET 2.

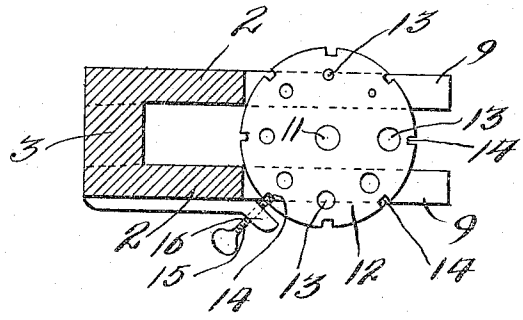


Fig. 3.

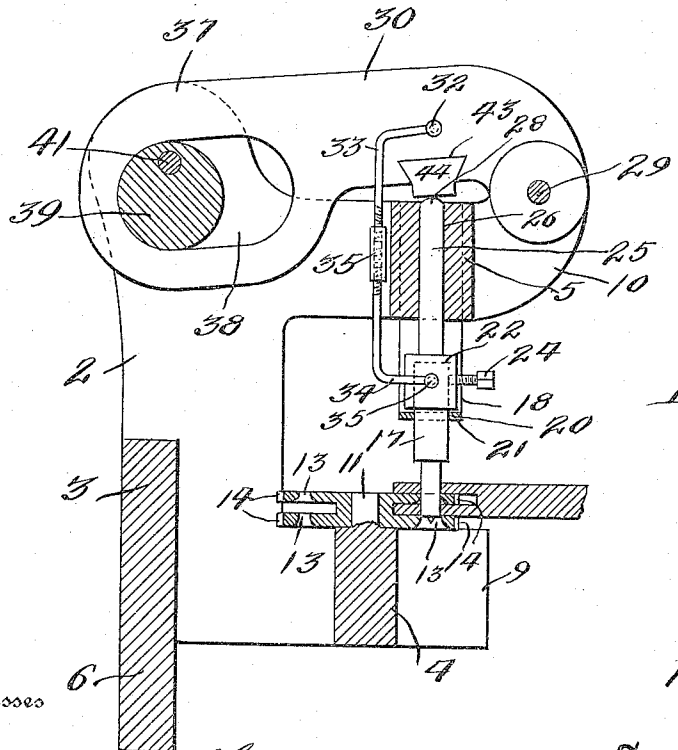


Fig. 4.

Witnesses

Philip Terrell

Thomas G. Orwell

Inventor

P. J. Hoffman

By D. Swift & Co.

his Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PETER J. HOFFMAN, OF BRIDGEWATER, SOUTH DAKOTA.

METAL-PUNCHING MECHANISM FOR ANVILS.

1,158,499. Specification of Letters Patent. Patented Nov. 2, 1915.

Application filed March 4, 1915. Serial No. 12,211.

To all whom it may concern:

Be it known that I, PETER J. HOFFMAN, a citizen of the United States, residing at Bridgewater, in the county of McCook and State of South Dakota, have invented a new and useful Metal-Punching Mechanism for Anvils; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved metal punching mechanism more especially adapted for use in connection with anvils.

An object of the invention is the provision of a mechanism of this design, in which improved features of construction are involved.

One of the features of construction comprises a frame designed to be supported on an anvil, and in which a tool holder is guided, there being a cam operated lever bearing against one end of the holder to force its tool through the metal.

Another feature is the provision of links connecting the holder and said lever for extracting the tool from the metal.

Another feature of the invention is the provision of a recess in the cam operated lever to receive any one of a plurality of different sizes of abutment blocks, whereby the tool holder may be operated so that its tool may penetrate different thicknesses of metal. In this case the connecting links are made in sections, which are adjustable relative to each other.

In practical fields the details of construction may necessitate alterations, falling within the scope of what is claimed.

The invention comprises further features and combination of parts, as hereinafter set forth, shown in the drawings and claimed.

In the drawings:—Figure 1 is a view in side elevation showing the improved punching mechanism as applied to an anvil. Fig. 2 is a vertical sectional view showing the punching tool lowered. Fig. 3 is a sectional view on line 3—3 of Fig. 1. Fig. 4 is a sectional view similar to Fig. 2, but showing a different connection between the tool holder and the cam operated lever.

Referring more especially to the drawings, 1 designates a frame comprising two correspondingly constructed oppositely disposed plates 2 having members 3, 4 and 5 spacing the plates apart. The member 3 is extended below the plates to form a lug 6 rectangular in cross section, designed to enter a square opening 8 in an anvil, so as to hold the frame supported in a vertical position. The member 4 is disposed between the arms or projections 9, while the member 5 is disposed between the arms or projections 10. The member 4 is provided with an upwardly extending lug or pin 11, on which the die plate 12 is pivotally mounted. This die plate is provided with a plurality of apertures 13 of different diameters, and the periphery of the die plate is supplied with a plurality of notches 14, into any one of which the end of the thumb screw 15 (which is threaded into a bracket arm 16) extends, so as to hold the die plate in its proper position, whereby the punching tool 17 may penetrate any one of the different apertures 13. A U-shaped bracket 18 has its arms bolted or otherwise secured at 19 to the outer faces of the arms 10, and the tool 17 is guided in the opening 20 of the lower transverse portion 21 of the U-shaped bracket. A holder 22 is provided having a socket 23, in which the shank of the tool 17 is secured by the set screw 24. The holder 22 is supplied with an upwardly extending shank 25, which is cylindrical and is guided in the cylindrical bore 26 of the member 5. The upper end of the shank 25 is rounded off, as shown at 28, and pivoted on a pin 29 on the arms 10 is a lever 30, the lower edge 31 of which rides against the round end of the shank 25, so as to force the holder downwardly and the tool through the metal to be punched.

Pivotally connected to the opposite faces of the lever 30 upon headed pins 32 are links 33, which are angular as shown and extend below the member 5 and have their lower ends 34 pivotally connected on the headed pins 35 projecting from opposite sides of the holder, so that after the lever 30 forces the holder downwardly, the links act to raise the holder and extract the punching tool from the metal and the die. The end portion 37 of the lever 30 is provided with an elongated slot or opening 38, in which the eccentric 39 of the lever 40 (which is pivoted at 41 between the plates 2) actuates, in such wise that when the lever 40 is swung upon its pivot, the eccentric or cam 39 causes the lever 30 to oscillate or raise and lower on its pivot. Where the lever 40 is provided with the eccentric, an

annular flange 42 is formed, between which and one of the plates of the frame the slotted end of the lever 30 is guided.

In Fig. 4 it is to be observed that the lever 30 is provided with a dove-tailed recess, 43, to receive any one of a plurality of abutment blocks 44, to force the holder and its tool farther downwardly, in order to punch two pieces of metal at the same time, in which case a double die plate is utilized. Also in this case the links 33 are made adjustable, as shown at 35.

The invention having been set forth, what is claimed as new and useful is:—

1. In a metal punching machine, a frame, a die plate thereon, a metal punching tool holder including a tool mounted in the frame, a lever pivoted in the frame and having means to receive different sizes of abutment blocks, an abutment block received in said means to ride against the upper end of the holder, links comprising adjustable sections and loosely connecting the lever and the holder, and means for actuating the lever.

2. In a metal punching machine, a frame comprising correspondingly constructed oppositely disposed plates having upper and lower forwardly extending arms, a die plate adjustably carried by the lower arms, a spacing member between the upper arms, a U-shaped bracket secured to and depending from the upper arms, a metal punching tool holder guided in the spacing member and having a tool guided in the U-shaped bracket, a lever pivoted in the forward ends of the upper arms and having a recess to receive different sizes of abutment blocks, an abutment block received in said recess to ride against the upper end of the holder, links comprising adjustable sections and loosely connecting the lever and the holder, and means for actuating the lever.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER J. HOFFMAN.

Witnesses:

JACOB TSCHETTER,

F. A. FISHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."