Aug. 10, 1937. L. C. HAUER 2,089,794

DIE HOLDER

Filed Dec. 16, 1936

Fig. 1.

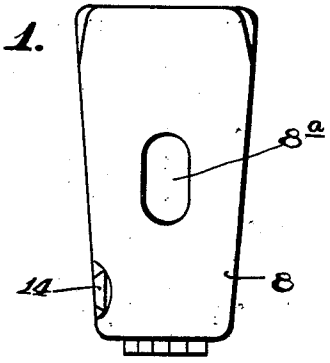


Fig. 2.

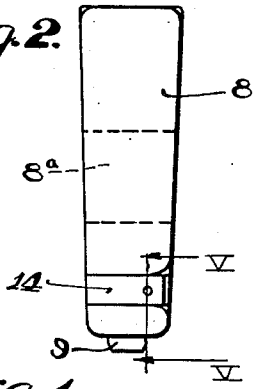


Fig. 3.

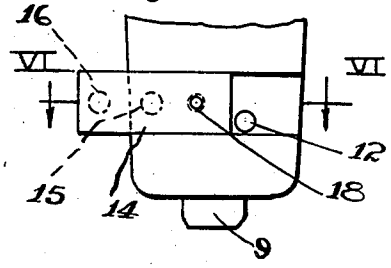


Fig. 4.

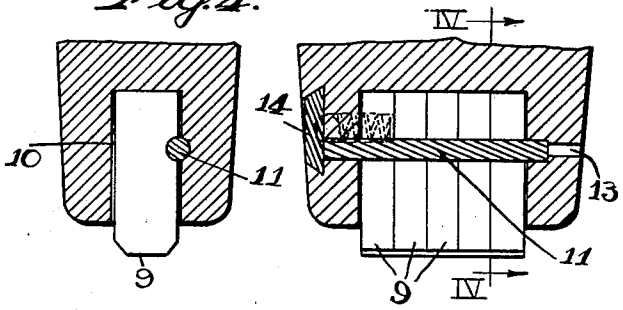


Fig. 5.

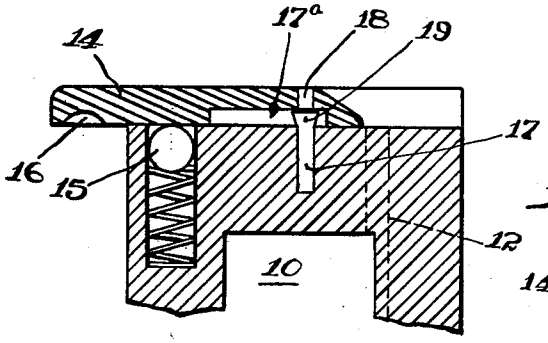


Fig. 6.

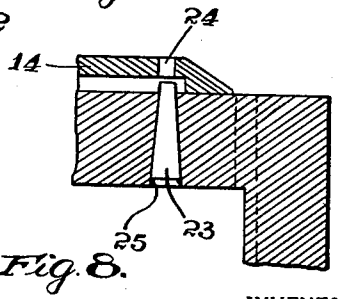


Fig. 7.

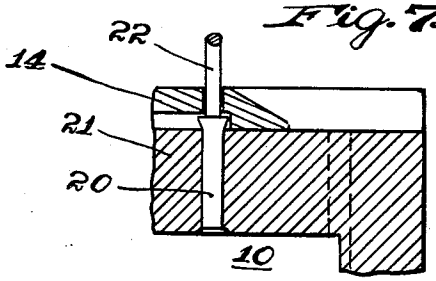


Fig. 8.

INVENTOR.
LEON C. HAUER
BY James C. Bradley
ATTORNEY

Patented Aug. 10, 1937 2,089,794

UNITED STATES PATENT OFFICE

2,089,794

DIE HOLDER

Leon C. Hauer, Pittsburgh, Pa., assignor to M. E. Cunningham Company, a corporation of Pennsylvania

Application December 16, 1936, Serial No. 116,186

5 Claims. (Cl. 101—28)

The invention relates to a die, or stamping head, of the hand type adapted to be struck at one end with a heavy hammer or sledge. The dies used are removable and interchangeable, and one of the objects of the invention is the provision of improved means for securing the dies removably in the holder. A further object is the provision of means of the character specified of simple construction, which is easily operated, which has no projecting parts, and which is not subject to accidental operation. A still further object of the invention is the provision of a holder which will stand up better under the hammering to which die holders are subject, and which will more effectively transmit the force of the impact of the hammer to the dies. Certain embodiments of the invention are illustrated in the accompanying drawing, wherein:

Figures 1 and 2 are front and side elevations respectively of the holder. Fig. 3 is a partial side elevation showing the retaining slide in release position. Fig. 4 is a section on the line IV—IV of Fig. 5. Fig. 5 is an enlarged section on the line V—V of Fig. 2. Fig. 6 is a section on an enlarged scale on the line VI—VI of Fig. 3. And Figs. 7 and 8 are fragmentary sections showing modifications.

As shown in Figs. 1 and 2, 8 is the body portion of the die of steel composition which is very strong and resistant to the battering action to which die holders are subject. It is provided with the usual opening 8a for the handle of the device, and is preferably of the wedge shape shown with a taper in both directions from the enlarged rear end, which receives the impact of the hammer, to the front end which carries the interchangeable dies 9. A holder or block of this shape stands up under hammering much better than holders or blocks of the shape heretofore used, such as that of my Patent No. 1,566,864, wherein the taper is reversed and which has a rear end of relatively small cross section, as compared with the front end which carries the dies. In addition to the increased durability incident to the large impact receiving area at the rear end of the holder, it has been found that the impact of the hammer is transmitted more effectively to the dies, and that the imprint of such dies in the material stamped is definitely more distinct for an impact of a given force than is the case with die holders of the same weight having the reverse taper commonly used heretofore. This makes the use of the device less laborious and very definitely increases its life. The advantages incident to the wedge shaped body portion, as above set forth, apply equally well to blocks in which the dies are integral with the body portion.

The dies 9 fit into the usual socket 10 in the front end of the holder, and are held against displacement forwardly by a rod 11 which extends longitudinally of the socket (Fig. 5) and lies partly in a groove in the wall of the socket and partly in grooves in the side walls of the dies, as indicated in Fig. 4. The end of the rod is carried in perforations 12 and 13 in the end walls of the socket, one of which opens through a dovetail slideway carrying the retaining slide 14. When the slide is in the open position shown in Fig. 3, the rod 11 may be removed through the perforation 12, which removal may be facilitated in case the rod sticks, by a pin inserted through the perforation 13.

The rod 11 is normally held against removal by the slide 14, and this slide is yieldingly held in closed position by a spring pressed ball 15 carried in the wall of the holder (Fig. 6) and adapted to engage the recess 16 on the lower side of the slide when the slide is moved to the closed position of Fig. 2. In order to insure that the slide may not be completely removed from the guideway by accident, its movement in both directions is limited by a stop pin 17, whose end engages a groove 17a on the lower side of the slide. In order to insert this pin into its socket in the holder, a perforation 18 is provided through the slide having a diameter just sufficient to permit the insertion of the pin. After the pin is inserted, its accidental removal is guarded against by upsetting its head as indicated at 19. This is accomplished by inserting a hardened drive pin through the perforation 18, so that it engages the head of the pin and then hammering the upsetting pin until the head 19 is enlarged slightly to a diameter greater than that of the perforation 18.

Fig. 7 shows a modification in which the stop pin 20 is inserted from the socket space 10 into a perforation extending clear through the wall 21 of the socket 10. After the pin is inserted, its rear end is supported by a suitable anvil in the socket 10, and the other end of the pin is upset by the end of a hardened drive pin 22 inserted through the perforation 18, as heretofore described.

Fig. 8 shows a further modification, in which the stop pin 23 is tapered. The pin is held against movement to the rear by peening the metal of the holder over the end of the pin slightly, as indicated at 25. In case it is necessary to remove the pin in order to secure access to the spring and

ball for replacement purposes, this is easily accomplished by the use of a drive pin similar to the pin 22 of Fig. 7, which is inserted through the opening 24 in the slide 14 and struck with a hammer.

It will be apparent from the foregoing that the slide and its securing means forms a very suitable and effective retainer for the rod 11. It does not project beyond the limits of the side walls of the holder, so that the holder presents a smooth surface without projecting parts which might otherwise be subject to injury in the use of the device. The slide is easily moved back and forth by the thumb of the operator, when it is necessary to remove the rod 11 in order to shift the dies, and at the same time, there is no danger of an accidental opening of the slide or of the loss of any of the parts since the stop pins 17, 20 and 23 guard the slide, ball 15 and its spring from being separated after these parts have once been placed in assembled relation. The rod 11 fits the recesses in the wall of the socket and the dies quite loosely so that there is no strain upon it during the hammering of the holders. Ordinarily it will fall out by gravity when the slide 14 is pushed back and the holder turned so that the slide is on the lower side of the holder. In some cases, the handle which fits the recess 8a may be used to swing the die holder like a hammer to make the imprint of the dies, so that the invention is not limited to holders which are held in position and struck with a hammer.

What I claim is:

1. A die construction comprising a body portion having a socket at one end for the dies, a perforation extending transversely of the socket for receiving a locking rod and a dovetail slot extending transversely of the perforation at one end thereof, a locking rod in said perforation, a plurality of dies in the socket, each having a locking recess through which said rod extends, a slide mounted in said slot with a groove on its inner face extending longitudinally of the slide, and a stop pin secured in said body portion with its end lying in said groove and acting to limit the movement of the slide.

2. A die construction comprising a body portion having a socket at one end for the dies, a perforation extending transversely of the socket for receiving a locking rod and a dovetail slot extending transversely of the perforation at one end thereof, a locking rod in said perforation, a plurality of dies in the socket, each having a locking recess through which said rod extends, a slide mounted in said slot with a groove on its inner face extending longitudinally of the slide, and a stop pin secured in said body portion with its end lying in said groove and acting to limit the movement of the slide, said slide being provided with an opening extending transversely therethrough at said groove to permit placement therethrough of the stop pin after the slide is positioned in said slot.

3. A die construction comprising a body portion having a socket at one end for the dies, a perforation extending transversely of the socket for receiving a locking rod and a dovetail slot extending transversely of the perforation at one end thereof, a locking rod in said perforation, a plurality of dies in the socket, each having a locking recess through which said rod extends, a slide mounted in said slot with a groove on its inner face extending longitudinally of the slide, a perforation being provided in the body portion between the bottom of the slot and said socket, and a stop pin in such last perforation with its end lying in said groove, said slide being provided with an opening extending transversely thereof at said groove to permit access therethrough to the end of the pin by a drive pin.

4. A die construction comprising a body portion having a socket at one end for a die, a perforation extending transversely of the socket for receiving a locking member and a dovetail slot extending transversely of the perforation at one end thereof, a locking member in said perforation, a die in the socket having a locking recess receiving said locking member, a slide mounted in said slot with a groove on its inner face extending longitudinally of the slide, and a stop pin secured in said body portion with its end lying in said groove and acting to limit the movement of the slide.

5. A die construction comprising a body portion of steel with a die at one end and provided with a rounded impact receiving surface at its opposite end, said impact receiving end being of much greater transverse cross section than the end carrying the die and said body portion tapering inwardly from its impact receiving end, so that the major part of the weight of the body portion lies to the rear of the transverse center line thereof.

LEON C. HAUER.