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 APPARATUS FOR MAKING DIES.
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1,060,033.

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Fig. 1.

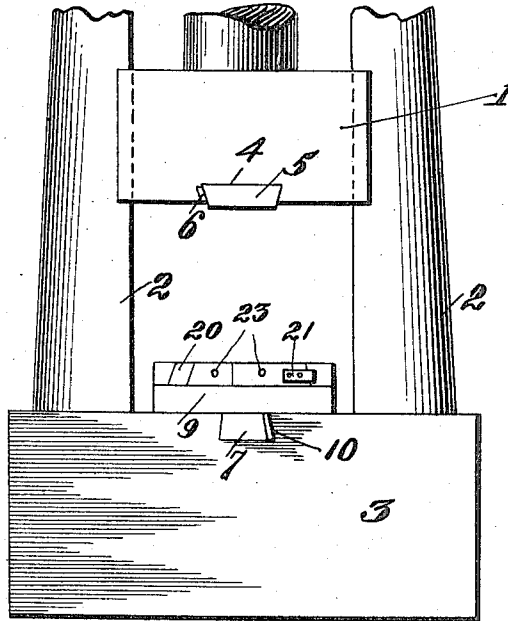
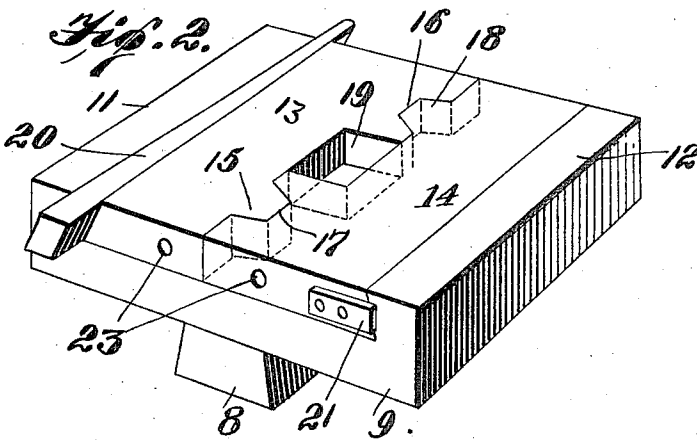


Fig. 2.



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To all whom it may concern:

Be it known that I, JAMES W. SIMMONS, a citizen of the United States, residing at Fiskdale, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Making Dies, of which the following is a specification.

My invention relates to an apparatus for making dies, matrices, patrices, or the like, and is especially designed for use in connection with power hammers and presses.

The primary object of the invention is to provide an extremely simple and comparatively inexpensive apparatus of the class described which will positively retain the shape or form of the work while being forged.

Another object contemplated by the invention is the provision of means which will permit a ready removal of the patrices or dies.

A further object of the invention is to provide a die-block holder having inter-fitting sections in conjunction with a locking device, whereby the sections may be initially adjusted for the reception of the work, and subsequently separated for the purpose of withdrawing the die.

A still further object of the invention consists in devising means for preventing relative lateral displacement of the die-block holder and socket sections.

To the accomplishment of the recited objects and others coördinate therewith, the preferred embodiment of my invention resides in that construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and embraced within the scope of the appended claims.

In said drawings:—Figure 1 is a side elevation of a drop hammer showing the application of my invention. Fig. 2 is a perspective view of the die-block holder illustrating the sectional socket.

Referring more particularly to the drawings for a detail description of my invention, the numeral 1 designates a conventional type of drop hammer operating between a pair of vertical guides 2, which project upwardly from the hammer-bed 3. In the bottom of the drop hammer, and preferably medially thereof is a recess, as 4, in which the patrix 5 is adapted to be inserted and held by the key 6. On the upper surface of the hammer-bed 3 and opposite to the said

recess 4 of the drop hammer is another recess 7 adapted to receive the dove-tail projection 8 of the die-block holder 9, a wedge key 10 also being employed to secure the proper fastening. The die-block holder 9 illustrated in the drawings is substantially rectangular in form, although any other shape considered more suitable may be used, and is provided upon opposite outer edges with a pair of upwardly disposed projections 11 and 12. The inner face of projection 11 is slightly beveled from top to the bottom thereof while the transverse area of said projection progressively increases from the front to the rear portion thereof; whereas the opposite projection 12 is also provided with an inwardly beveled face but has a uniform width from end to end. This die-block is designed to receive a socket member, which member comprises a pair of sections 13 and 14, the former having a projection 15 and a recess 16 at its opposite proximal ends, while the latter is provided with a complementary recess 17 and a projection 18, the central portions of each section being rabbeted to present an opening, as 19. The line of division between the sections of the socket member which describes the complementary projections and recesses is substantially coaxial with the opening 19, and each projection has a length equal to half of the width of the adjacent walls of said opening. It will also be noted that the outer side edges of the sections 13 and 14 are beveled to correspond with the inner faces of the projections 11 and 12. To secure a positive fastening of the sections a wedge key, as 20, is employed and inserted between the opposing or confronting sides of the projection 11 and the section 15, as clearly exhibited in Fig. 2. The other section is equipped with a pair of flanges 21 upon the front and rear terminals, the said flanges normally extending upon the projection 14 to prevent lateral displacement. In front of the rear edges of each of the sections 13 and 14 a pair of holes or openings 23 are arranged, the function of which will be hereinafter explained.

In practical operation, a heated blank is placed in the recess 19 of the socket member, and the key 20 constrained between the projection 11 and the side edge of the socket member, the flanges 21 upon the front and rear edges engaging the terminals of the projection 12. It is of extreme importance

in making dies that the socket member which holds the blank be held sufficiently rigid to effectively resist the powerful blows of the hammer upon which the patrix is mounted, otherwise the dies will vary in contour and be practically worthless. In my invention, any tendency of this character is positively precluded by reason of the interlocking projections and recesses of the sections of the socket member, the projection 12 of the die-block holder, and the extensions 21 carried by one of the sections. By reason of their width and extent, and proximity to the opening which receives the blank, relative movement of the sections, and a consequent displacement of the walls of the opening, is positively prevented. Considered as an entirety, the socket member is constrained against the projection 12 of the die-block holder by the key 20 so as to hold the said socket member to a considerable degree against lateral displacement, and the extensions 21 by overlapping the opposite ends of the projection 12 absolutely prevent such displacement and centralize the opening under the patrix. When the forging is completed, the key is disengaged and the die removed by means of tongs or any suitable tool adapted for that purpose. Obviously, the sections 13 and 14 can be separated or thrown back to permit a more ready removal of the forging. If occasion should require the base of the die-block holder may readily be cleaned; this may be easily accomplished by inserting a bar in the holes 23 and elevating the sockets sufficiently to permit brushing away all dirt and scales.

It will thus be seen that I have devised an apparatus of simple construction and arrangement which will rigidly sustain the work while being forged, and at the same time permit an expeditious removal of the forging. Especially is this true of the sectional socket member wherein the interlocking projections and recesses positively prevent relative shifting of the sections, and allow a facile disconnection whenever desired. Another important feature is the dual means for fastening the socket in the die-block holder, namely, the key and the

flanges. The key secures a wedge-like locking in one direction, and the flanges prevent lateral movement of the sections in a plane at right angles thereto.

It should be understood that in its broader aspect the invention comprehends the employment not only of the various means described, but of equivalent means for performing the recited functions. While the arrangement shown is thought at the present time to be preferable, it is desired to reserve the right to effect such modifications and variations thereof as may come fairly within the scope of the appended claims.

What is claimed, is:—

1. A die-block holder provided with upward projections at opposite edges, in combination with a socket member comprising a pair of sections the opposing edges of said sections each having an enlarged projection and a recess at opposite proximal ends and said sections constructed to form an opening between said projections and recesses, the projection of each section being opposite and engageable with the recess of the other section and a device for wedging said sections between said upward projections of the die-block holder.

2. A die-block holder provided with upward projections at opposite edges, in combination with a socket member comprising a pair of sections the opposing edges of said sections each having an enlarged projection and a recess at opposite proximal ends and said sections constructed to form an opening between said projections and recesses, the projections of each section being opposite and engageable with the recess of the other section, a device for wedging said sections between said upward projections of the die-block holder and extensions carried by the outer ends of one of said sections and adapted to overlap the ends of one of the last mentioned projections.

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

JAMES WILLIAM SIMMONS.

Witnesses:

ISIDORE LEBLANC,
LEO LAMOUREUX.

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