BEST AVAILABLE COP`

No. 805,360. PATENTED NOV. 21, 1905.

H. J. HINDE.

RIVETING ATTACHMENT FOR POWER PRESSES.

APPLICATION FILED JULY 21, 1904.

Fig. 1.

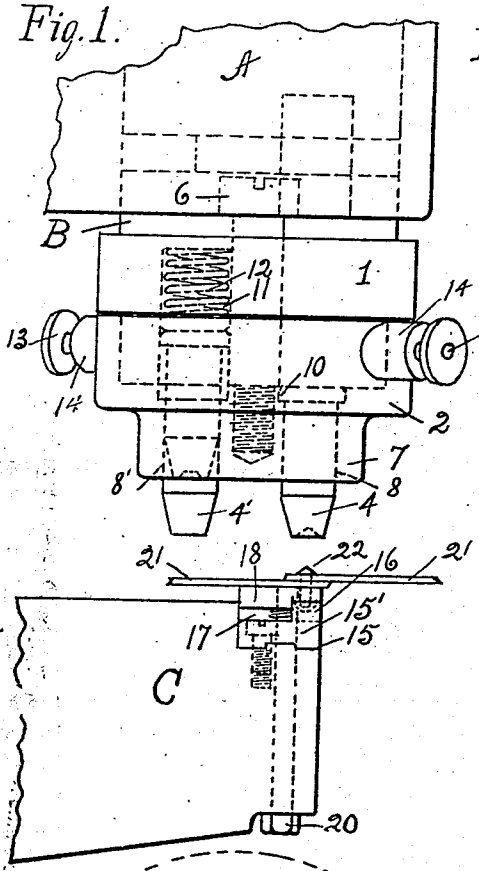


Fig. 2.

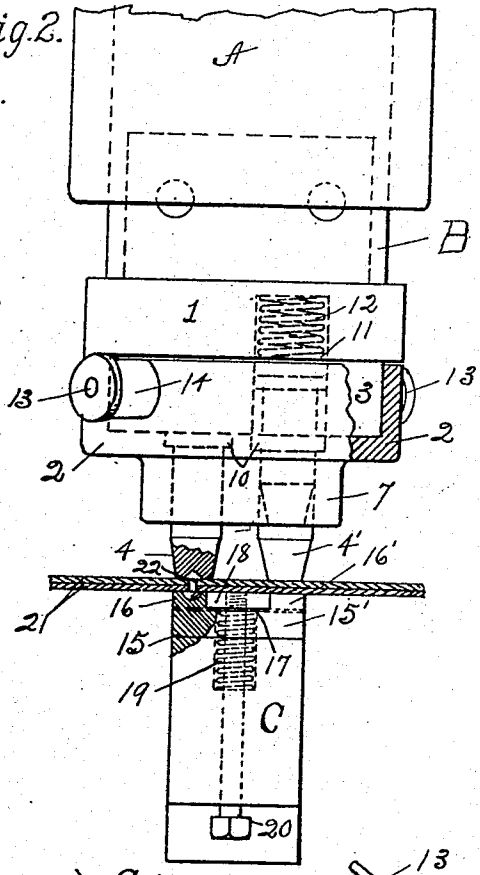


Fig. 3.

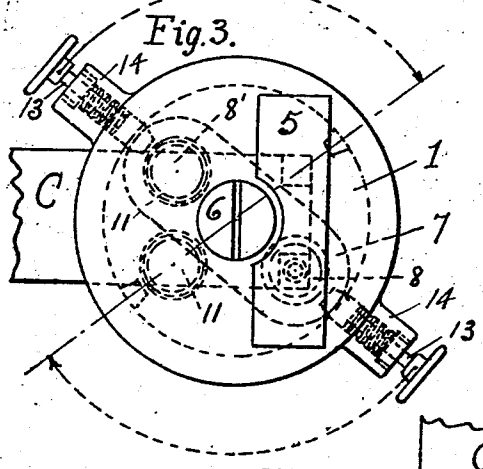


Fig. 4.

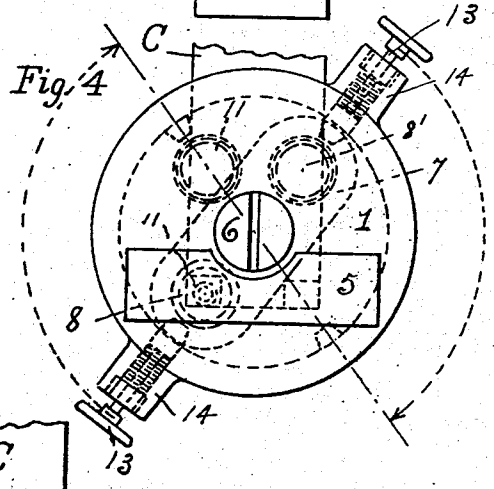
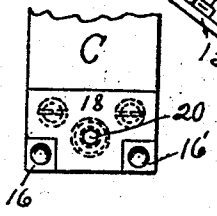


Fig. 5.



WITNESSES:

David C. Walter

Emell Schreiber

INVENTOR.

Henry J. Hinde,

By Dobin & Owen.

BEST AVAILABLE COPY

UNITED STATES PATENT OFFICE.

HENRY J. HINDE, OF TOLEDO, OHIO.

RIVETING ATTACHMENT FOR POWER-PRESSES.

No. 805,360. Specification of Letters Patent. Patented Nov. 21, 1905.

Application filed July 21, 1904. Serial No. 217,458.

To all whom it may concern:

Be it known that I, HENRY J. HINDE, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Riveting Attachments for Power-Presses; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a riveting device or attachment for use in conjunction with any power press or machine having a reciprocating plunger and a horn or suitable anvil on which to rest the work.

The object of my invention is to provide a riveting-tool of the character indicated that is simple in its construction and operation and adapted to be readily adjusted to operate on rivets having flat, oval, or conically-shaped heads, as the nature or style of the work being riveted may demand.

The invention is fully described in the following specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my invention, showing a portion of the machine to which it is attached. Fig. 2 is a front elevation thereof with the operating-plunger and attached riveting apparatus in lowered position. Figs. 3 and 4 are plan views of Figs. 1 and 2, respectively; and Fig. 5 is a view of the anvil and associated riveting parts.

Referring to the drawings, A represents the leader-frame in which the plunger B reciprocates, and C the anvil or work-supporting horn of an ordinary type of power-press.

The riveting attachment in which lie the features of my invention comprises the holder 1, the swivel or turret-head 2, which latter has its upper portion suitably bored to adapt it to loosely fit over and turn upon the lower reduced portion 3 of the holder 1, and the riveting-tools 4 and 4′, which are carried by the turret-head 2. A vertical tongue or boss 5 is formed on the upper surface of the holder 1 for enabling the holder to be bolted or otherwise rigidly secured to the free end of the plunger B. The turret-head 2 is rotatably secured to the under side of the holder 1 by means of a bolt 6, which passes through said holder and axially engages the turret-head 2. An oblong projection 7 is formed on the under side of the turret-head 2 and is provided at either end thereof with the openings 8 and 8′, in which the riveting-tools 4 and 4′ are reciprocally mounted. The tools 4 and 4′ have their upper ends formed with an annular shoulder or flange 10, which is adapted to seat within a recessed portion at the upper ends of the openings 8 and 8′, thereby limiting the downward movement of said tools.

Two pockets 11 are provided in the under side of the holder 1 diametrically opposite the concaved pockets 16 and 16′ of the anvil, hereinafter described, and in circularly-alining position therewith and are of suitable size to permit the flanged portions 10 of the tools 4 and 4′ to reciprocate therein when turned in vertical alinement therewith. The position of the pockets 11 11 is shown by dotted lines in Figs. 3 and 4, one being positioned in vertical alinement with the rear portion of the oblong projection 7 and the other to the left thereof. A coiled compression-spring 12 is mounted in each pocket 11 for actuating the tools 4 and 4′ to return to their normally extended positions after being forced within said pockets by an alining obstruction in the work. These pockets are so positioned that when the turret-head 2 is turned in proper position to enable one of said tools to head a rivet, as hereinafter described, the idle or auxiliary tool will be in vertical alining position with the diametrically opposite pocket 11, thus enabling it to have a reciprocatory movement therein should it strike any portion of the work being riveted on its descending movement, while the operating-tool is retained in rigid position within the turret-head 2 by reason of its upper end abutting against the under side of the holder 1, as shown in Figs. 1 and 2.

The object of the two riveting-tools 4 and 4′ is to provide means in the same instrument for operating on rivets having two styles of heads without the necessity of stopping the work and changing the riveting attachment, the said tools being provided with differently-shaped rivet-head-receiving sockets or made perfectly flat for this purpose.

The turret-head 2 is retained in properly-adjusted position by means of the spring-pressed pull-pins 13, which are reciprocally mounted in the bosses 14, formed on opposite sides of said turret-head and have their inner

BEST AVAILABLE COPY

ends in engagement with suitable notches provided on the periphery of the reduced portion 3 of the holder 1.

The anvil or work-supporting horn C is provided on its forward edge with a recessed or cut-away portion 15, in which is rigidly bolted the hardened block 15'. This block is provided at its forward corners with the concaved pockets 16 and 16' for receiving and heading the end of a rivet as the same is forced downwardly therein by the operation of the heading-tool and is cut away between and at the rear of said pockets, as shown at 17, to form a recess or seat for the lower pressure-plate 18. The plate 18 is normally held in elevated position, as shown in Fig. 1, by means of a coiled compression-spring 19, which is mounted in a pocket provided in the anvil C under said plate, and has its movement limited by means of the bolt 20, which latter has a limited vertical reciprocatory movement in said anvil. The degree of reciprocatory movement of the plate 18 should only be sufficient to allow a rivet to project as far through the work as the head thereof will permit, and this may be regulated by turning the bolt 20 in the proper direction. The object of this pressure-plate is to firmly hold the two sheets being riveted against the heading-tool during the heading operation, thereby preventing the rivet from upsetting and expanding between the sheets.

In the operation of my invention the work or sheets 21 are placed on the elevated pressure-plate 18 with the rivets 22 passing through the same from the upper side to enable the rivet being headed to have its lower or small end suspended from the work and loosely resting within the concaved heading-pocket disposed under the operatively-mounted tool 4, as shown in Fig. 1, thus rendering it possible to insert rivets in the work from the outside, so that the rivets lie in position therein without being held. As the device descends to head and clench a rivet 22 by the operation of the rigid tool 4 the idle or auxiliary heading-tool 4' is permitted to move within the alining receiving-pocket 11 against the pressure of the spring 12, should it strike a rivet-head or other obstruction in the work. Should the tool 4 be in operation, as shown in the figures of the drawings, and it be desired to operate on a rivet having a differently-shaped head, as is very often the case in the same or different classes of work, or to head a rivet inserted through the work at the opposite side of the anvil C, the same may be readily and easily accomplished by releasing the pull-pins 13 from engagement with the notches in the lower reduced portion of the holder 1 and turning the turret-head to the left until the heading-tool 4 is in position to operate idly within the proper pocket 11 and the heading-tool 4' is in a vertical plane with the pocket 16' at the right-hand corner of the anvil C and rigidly abutting against the under side of the holder. It is therefore apparent that by turning the swivel-head 2 one of the heading-tools may be thrown either to the right or left hand side of the anvil or horn C, thus making it possible to head rivets close to the walls on shoulders or corners, which may be either on the right or left hand side of the work.

It is obvious that while I have shown the turret-head of my invention as carrying but two heading-tools the same may be provided with a greater number, if desired, so as to enable a variety of differently-shaped rivet-heads to be operated on without stopping the work and changing the riveting attachment, and also that such changes in the form, proportion, and minor details of construction of the parts as fairly fall within the scope of my invention may be made without departing from the spirit or sacrificing any of the advantages thereof. I further wish it understood that while I have described my invention as heading a rivet on the under side of the work the same may be operated with the rivet in reverse position, so that the clenching-head of the rivet is formed by contact of the end thereof with the operative tool 4 or 4' instead of the pocket in the anvil.

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

1. In a machine of the class described, a plunger, an anvil having two spaced concaved portions for forming the lower heads of a rivet, a member fixed to said plunger and reciprocal therewith, a swivel on said member, a series of riveting-tools carried by said swivel and adapted to be moved by a movement of said swivel to throw either one into operative position over one or the other of said concaved portions.

2. In a machine of the class described, the combination with a reciprocatory riveting-tool, of a work-supporting anvil having two spaced rivet-heading portions formed thereon, a pressure-plate mounted at one side of said spaced portions and having a tongue projecting between them, and yieldable means for normally holding said plate with its surface elevated above said spaced portions for the purpose described.

3. In a machine of the class described, the combination with a plunger of a circular holder fixed to the end of said plunger and having its lower portion reduced, a swivel or turret-head having its upper portion bored to receive the reduced portion of said holder pivotally attached to said holder, an oblong projection on the under side of said swivel having vertical openings communicating with the lower side of the holder, riveting-tools mounted to reciprocate in said openings when in inoperative position of adjustment, and means for turning said swivel to move any one of the tools into operative position with its upper

BEST AVAILABLE COP

end abutting against the under side of the holder to prevent independent vertical movement thereof.

4. The combination in a machine of the class described, of a plunger, an anvil having two spaced rivet-heading portions thereon, a pressure-plate on the anvil in contiguous position to said spaced portions for normally holding the work out of contact therewith, a holder fixed to said plunger and reciprocal therewith, a swivel carried by and rotatable on said holder, a plurality of tools carried by said member and adapted to be moved by a movement of said member to bring any one of them into operative position over one of the spaced heading portions of the anvil, substantially as described.

5. In a machine of the class described, a plunger, an anvil, a riveting attachment suspended from said plunger and reciprocal therewith, said attachment comprising a holder fixed to said plunger, a member rotatably carried by said holder, a series of riveting-tools mounted in said member and adapted when in operative position to have a rigid bearing against the under side of said holder, substantially as described.

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

HENRY J. HINDE.

Witnesses:
CHAS. W. GREENING,
W. C. BLANCHONG.