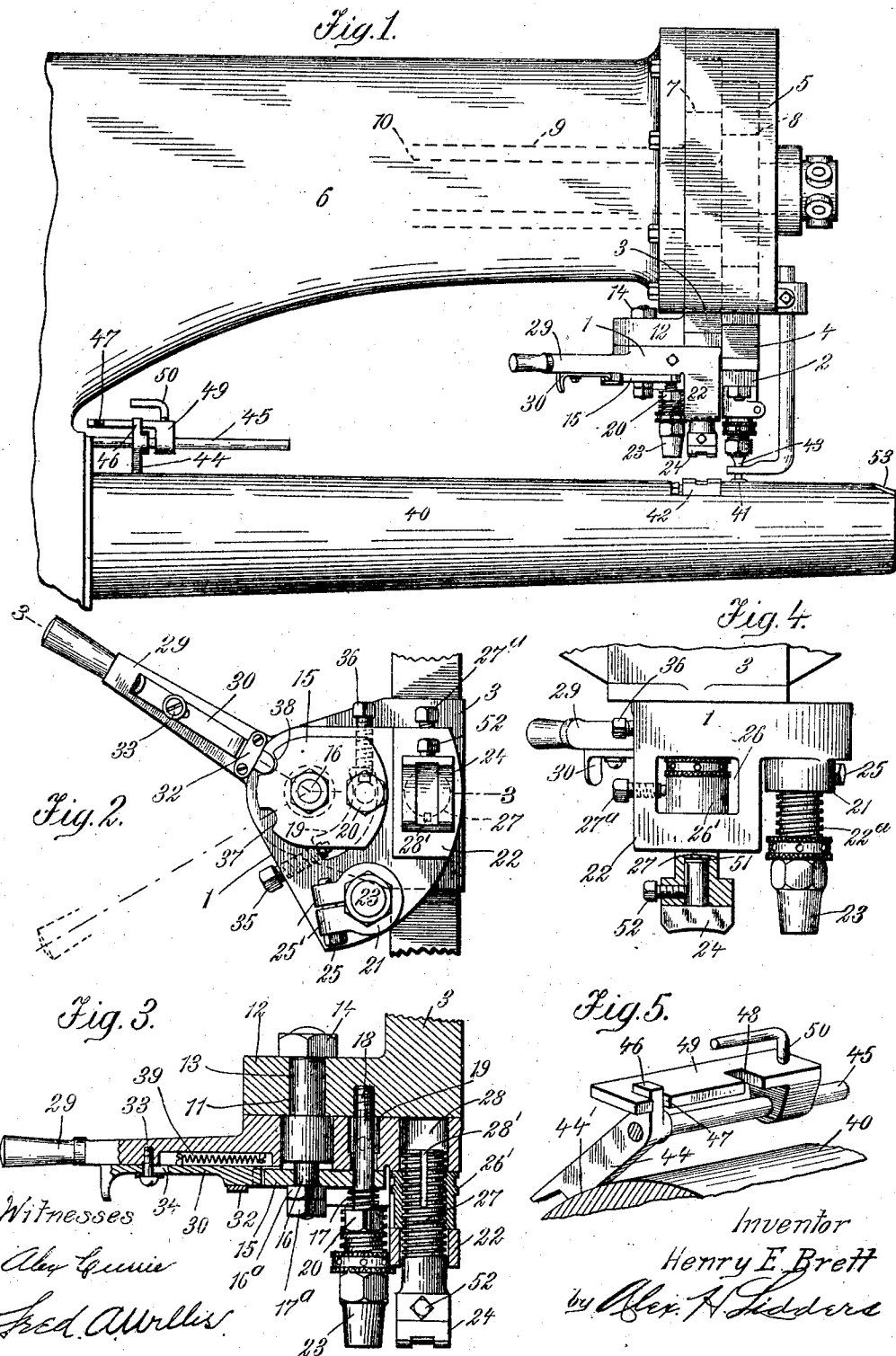


H. E. BRETT.
COMBINED PUNCHING AND RIVETING MACHINE.
APPLICATION FILED NOV. 29, 1908.

980,405.

Patented Jan. 3, 1911.



UNITED STATES PATENT OFFICE.

HENRY E. BRETT, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO JAMES A. TALBOT, OF LOS ANGELES, CALIFORNIA.

COMBINED PUNCHING AND RIVETING MACHINE.

980,405.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed November 29, 1909. Serial No. 530,489.

To all whom it may concern:

Be it known that I, HENRY E. BRETT, a citizen of the United States of America, residing at Los Angeles, in the county of Los Angeles, State of California, have invented certain new and useful Improvements in Combined Punching and Riveting Machines; 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 improvements in punching machines, and particularly to improvements in that type of machine illustrated in application filed Mar. 10, 1909, Serial Number 482,413.

The invention has for one of its objects to provide a simplified form of tool-carrying mechanism.

A further object is to provide an easily adjustable means for setting the work to the different tools.

With these and other objects and advantages in view, which will be readily apparent to those skilled in the art, the invention consists in the construction and combination of the various parts as set forth in the following description and claims and illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of the working, or tool-carrying, portion of the machine, having the invention applied thereto: Fig. 2 is an underside plan view of the improved tool carrying means. Fig. 3 is a sectional view taken on line 3—3 Fig. 2. Fig. 4 is a front elevation of the parts shown in Fig. 2, and Fig. 5 is a detail perspective view of the improved device for positioning the work for the various tools.

Referring now to the drawings, 1 and 2 represent tool carrying members which, as shown, are connected with crossheads 3 and 4, said crossheads sliding in guide 5, secured to frame 6 and being operated by eccentrics 7 and 8 rigidly mounted on outer and inner shafts 9 and 10, respectively. The crossheads 3 and 4, guide 5, frame 6, eccentrics 7 and 8, shafts 9 and 10, and tool carrying

member 2 may be of any suitable construction, as illustrated being of the form disclosed in the application above referred to.

The tool carrying member 1, preferably of the form of a sector, is pivotally secured to crosshead 3 in any suitable manner, as here shown being arranged to rotate freely on a pin 11 rigidly secured to lateral extension 12 of the lower part of crosshead 3 by means of an extension 13, of reduced diameter, of the pin 11 passing through an opening in part 12 and locked by means of nut 14 as will be readily understood from the drawings.

Suitable expansible means may be provided for pressing the tool carrying member 1 in close contact with crosshead 3 while leaving it free to rotate on same, and, as here illustrated, there is provided a retaining plate 15 which is held in position by means of an extension 16 of pin 11, which passes through plate 15 and is provided with lock nuts 16^a and 17^a an expansible spring 17 encircling a bolt 18 which is threaded into crosshead 3 and passes through a slot 19 in member 1 and also through plate 15, bears between the head 20 of the bolt plate 15 and acts to prevent any lost motion between the tool carrier 1 and the crosshead 3 due to wear of the parts.

The tool carrier 1 may be provided with a plurality of tool holding parts, or sockets; as here illustrated it is provided with a pair of tool sockets 21 and 22. The socket 21 has the threaded shank 22^a of a tool 23 screwed therein; means, in the shape of lugs 25' adapted to be drawn together by screw 25, being provided to lock the tool against rotation. The socket 22 carries a tool 24 through the medium of a nut 26' inserted in a lateral opening 26 in said socket and through which is threaded the shank 27 of tool 24, the shank 27 being free to move in a boring 28 in the socket. A screw 27^a may be provided to lock nut 25 against rotation. Shank 27 is prevented from rotating by a feather on the tool carrier projecting in the way 28' on the shank 27.

Suitable means may be provided for swinging the carrier 1 to different positions

as may be desired and for locking it in such positions. As here shown a handle 29 is formed on carrier 1 and a latch 30 is slidably secured in any desired manner, as by the strap 32 and the screw 33 passing through slot 34 in the latch. Screws or stops 35 and 36 may be threaded into the carrier from opposite sides, with their inner ends projecting into slot 19 which, as shown, is concentric with the pivot of the carrier. These screws bear alternately against bolt 18, according to the direction in which carrier 1 is swung, and act as stops to limit its movement. These screws are preferably adjusted so as to stop the carrier 1 when the corresponding tool is directly under the center of the crosshead 3, the tool carrying parts being preferably equidistant from the pivot point of the carrier. Outwardly flaring notches 37 and 38 are formed in retaining plate 15, being positioned so that latch 30 will register with notch 37 when screw 35 bears against bolt 18 and with notch 38 when screw 36 is in contact with the bolt. The latch, by bearing through the tension of spring 39, against the outwardly flaring side of either one of the notches 37 and 38, according to the position of carrier 1, will keep the corresponding screw 35 or 36 tightly pressed against bolt 18 and so lock the carrier in that position.

40 represents the stake bar which has the punching die 41 and set plate 42 which are designed to co-act respectively with the punch 43, carried by member 2, and the rivet and seam sets 23 and 24 respectively, which are the tools which are in this instance shown carried by member 1.

As it is often desirable that the work being acted upon by the machine should be moved from a position to be acted upon by tool 43 to a position to be acted upon by tools 23 and 24 or vice versa novel means are provided by which the work may be quickly and accurately adjusted to the different tools. The means preferably comprises an arm 44 slidable and swingable on a rod 45 secured to the frame of the machine adjacent to the stake 40. This arm 44 has a portion 44' of one edge curved to fit the stake and adapted to rest against it when the device is in operative position. A tail piece 46 is formed on the arm 44 and is designed to be inserted in either of a pair of notches 47 and 48 formed in a member 49—carried on rod 45 and adjustably secured thereto by set screw 50. These notches are placed at a distance apart equal to that which it is desired to move the work, and the arm 44 acts as a gage or stop against which the work is placed to bring it to a position to be operated on by the desired tool.

For the purpose of allowing different tools, suitable to the work to be acted upon, to be

inserted therein, shank 27 is formed with a recess 51 in which different tools may be readily fitted, being secured therein by a set screw 52.

In joining pipe sections the end of one section has to be driven over the end of the other section and to facilitate this the stake bar 40 is formed at its outer end with a bevel 53 on which the pipe end may be slightly flared by hammering it.

The method of operation of the invention will be obvious to those skilled in the art from the foregoing description and no further description thereof is deemed necessary.

Although the invention has been illustrated as embodied in a particular form, it must not be understood as being confined to that particular form but the right is reserved to all changes and modifications as come within the spirit of the invention.

I claim:

1. In combination, a carrier having tool holding means, a member on which said carrier is movably mounted, a part on said member, a stop on said carrier adapted to bear against said part, a plate on said part having a notch therein, and a latch bearing in said notch for the purpose set forth.

2. The combination with a crosshead and means for reciprocating the same, of a pivotally mounted tool carrier and expansive means for causing said carrier to be pressed against the cross head for the purposes set forth.

3. The combination with a crosshead, of a tool carrier pivotally mounted thereon and provided with a slot concentric with the pivot of the carrier, a bolt passing through said slot and secured to said crosshead, and means on said bolt for holding said carrier in close contact with said crosshead.

4. The combination with a crosshead, of a tool carrier pivotally mounted thereon and provided with a slot concentric with the pivot of the carrier, a bolt passing through said slot and secured to said crosshead, a plate on said bolt for holding the carrier in close contact with the cross head, and means on the carrier coacting with said plate to lock the carrier in position on the crosshead.

5. The combination with a crosshead, of a tool carrier pivotally mounted thereon and provided with a handle, a part passing through a slot in the carrier and secured to said crosshead, said slot concentric with the pivot of the carrier, a spring-pressed plate on said part for holding the carrier in close contact with the crosshead, stops on the carrier adapted to co-act with said part in predetermined positions of the carrier, and means on said handle co-acting with said plate for locking the carrier against movement when it reaches said predetermined positions.

6. In a device of the class described, the stake bar 40 formed at its outer end with a bevel 53 for the purpose set forth.

7. The combination of a tool carrier, with
5 a tool holding part thereon having a boring and a lateral opening therein, a nut in said opening, a tool having a shank disposed in said boring and threaded through said nut, means to prevent rotation of the shank, and
10 means to lock said nut against rotation.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, at Los Angeles, in the county of Los Angeles, State of California, this 23rd day of November A. D. 15 1909.

HENRY E. BRETT.

Witnesses:

JANUS A. BROWN,
ALEX. CURRIE.