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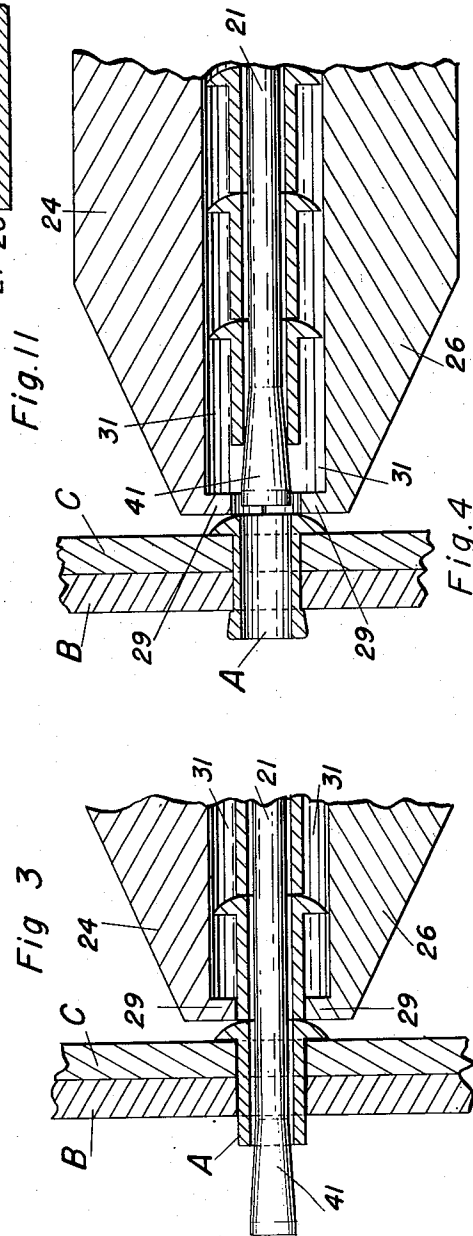
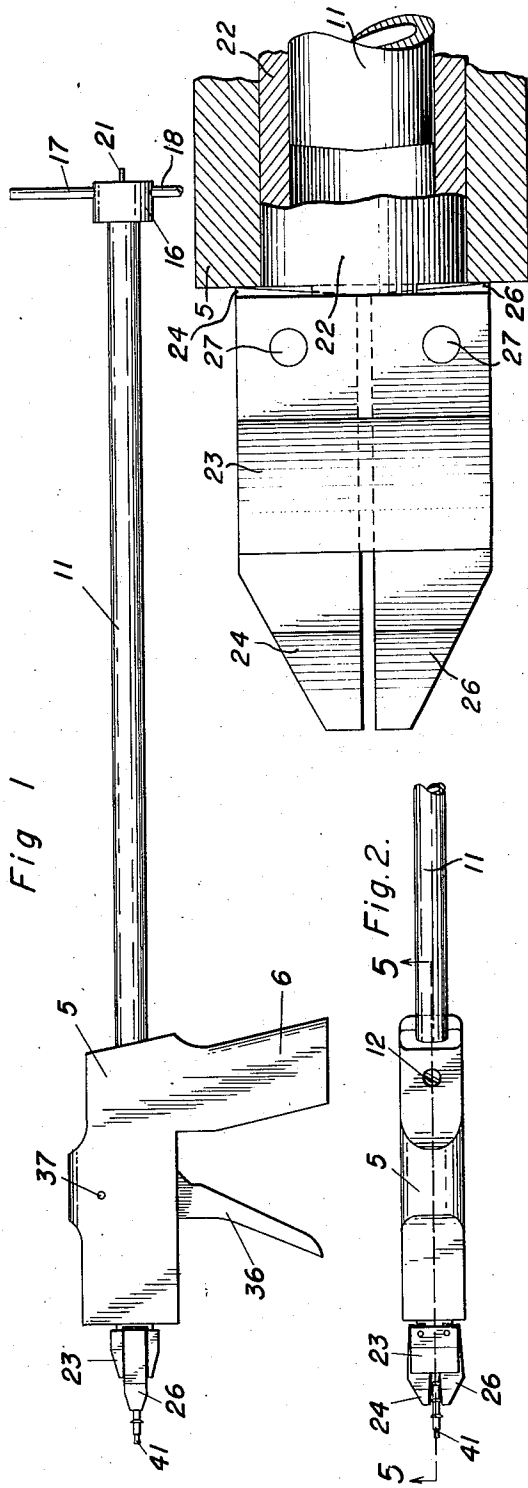
J. F. HAMLIN

2,570,801

JAW HOLDER FOR BLIND RIVETING GUNS

Filed Oct. 22, 1948

2 Sheets-Sheet 1



INVENTOR.
Jerry F. Hamlin
BY
[Signature]
Att'y

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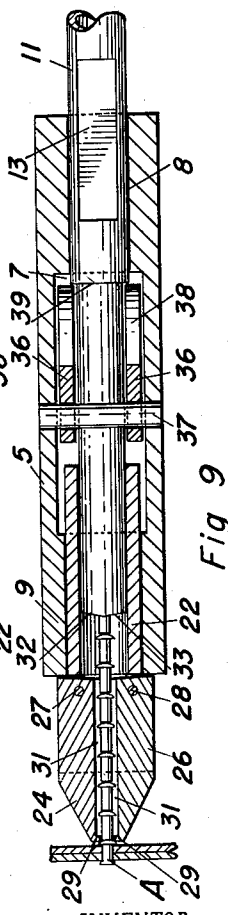
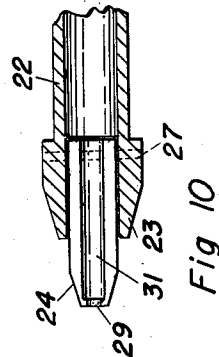
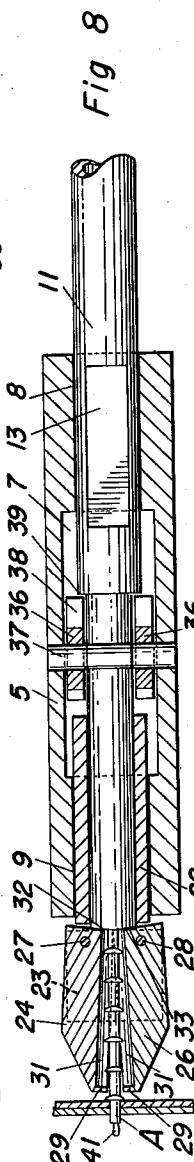
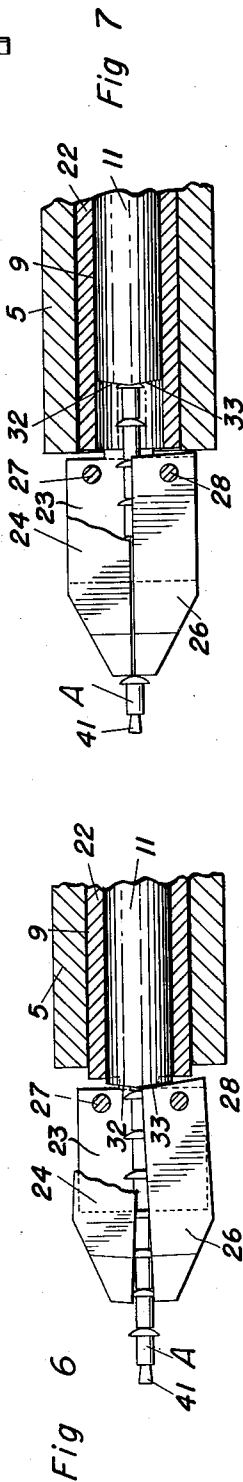
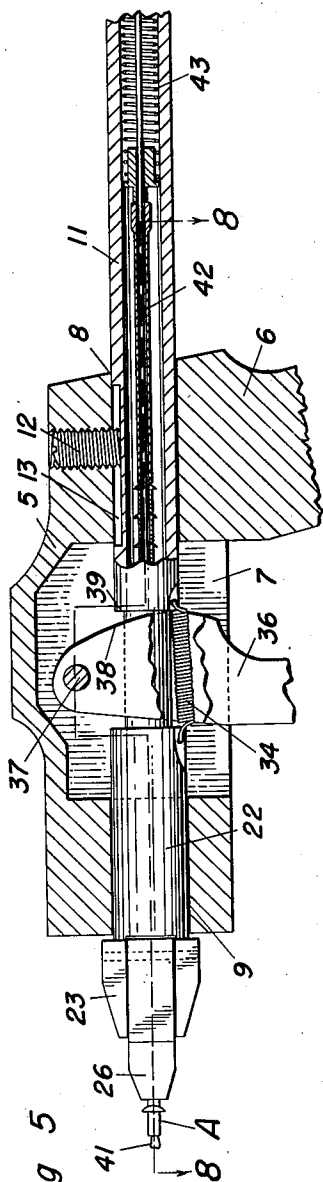
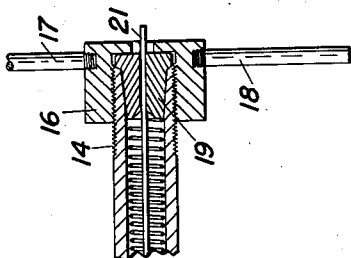
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JAW HOLDER FOR BLIND RIVETING GUNS

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INVENTOR.
Jerry F. Hamlin

BY
[Signature]
Att'y

UNITED STATES PATENT OFFICE

2,570,801

JAW HOLDER FOR BLIND RIVETING GUNS

Jerry F. Hamlin, San Francisco, Calif.

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3 Claims. (Cl. 218—19)

1

This invention relates to improvements in blind riveting guns and has particular reference to a device for inserting and expanding rivets through pre-formed openings and upsetting the rivet on the inner surface.

A further object of this invention is to provide a riveting gun wherein a plurality of rivets may be inserted therein and then individually expand therefrom.

A further object is to produce a gun which has a minimum amount of parts and one which will accommodate rivets of various sizes within the limits of the gun.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevation of my improved gun,
Fig. 2 is a top-plan view of Fig. 1, showing the jaws in open position,

Fig. 3 is an enlarged fragmentary detail view showing the jaws in closed position and with a rivet inserted in the rivet hole,

Fig. 4 is a similar view to that of Fig. 3, showing the rivet upset and the expander head retracted therethrough,

Fig. 5 is a fragmentary cross-sectional view on an enlarged scale, taken on the line 5—5 of Fig. 2, and showing portions thereof in elevation,

Fig. 6 is a fragmentary detail view on an enlarged scale, showing the bevelled surfaces for moving the jaws to open position,

Fig. 7 is a similar view showing the jaws engaging the body, and in closed position,

Fig. 8 is a cross-sectional view, partly in elevation, taken on the line 8—8 of Fig. 5, and showing the jaws in open position,

Fig. 9 is a similar view, showing the jaws in closed position and

Fig. 10 is a vertical cross-sectional view through the jaw holder.

Fig. 11 is a greatly enlarged view of the certain parts shown in Figs. 7, 8 and 9.

In blind riveting it is customary to place a rivet through an opening and to then expand the rear or unexposed end of the rivet in some manner so as to join the parts together through which the rivet passes. This may be accomplished by use of an explosive charge or by a back buck, or by drawing an enlarged head through the rivet in which event the rivet must be of the hollow type.

It is to feed and expand this type of hollow

2

rivet that I have devised my gun whereby rivets may be rapidly inserted into the openings provided therefor, and then expanded through the action of the gun by retracting an enlarged head through the rivet.

In the accompanying drawings, wherein, for the purpose of illustration, is shown a preferred embodiment of my invention, the numeral 5 designates the body of my gun which has a downwardly-depending grip 6, and a recess 7, formed therein.

Extending through the body 5, are aligned bores, 8 and 9.

Within the bore 8, is slidably positioned a carrier 11, slidably retained against rotation in its bore by a set screw 12, having its end positioned in a slideway 13, formed in the carrier 11.

One end of the carrier is threaded as at 14, and has a threaded nut 16, which may be rotated by handles 17 and 18, whereby tapered jaws 19, will serve to engage and retain the end of a feeder wire 21. This feeder wire will be later described.

Slidably mounted in the bore 9, is a tubular-shaped jaw holder 22, which has a flattened slotted head 23, between which are mounted jaws 24 and 26, pivoted as at 27 and 28 respectively. (See Figs. 9 and 10.) Each of these jaws is provided with a semi-circular lip 29, and a semi-circular bore 31, the purpose of which will be later seen.

By referring to Figs. 6 and 8, it will be noted that the reduced end of the carrier 11, has bevelled surfaces shown at 32 and 33, which, when moved against the rear end of the jaws, will cause them to pivot and move to open position, as shown in these two figures.

When the carrier is retracted together with the jaw holder, as shown in Figs. 7 and 9, the rear surfaces of the jaws will, in turn, engage the body 5, and move into closed position, as shown in these two figures.

The carrier 11, is connected to the jaw holder 22, by an expansion spring 34.

In order to actuate the device, I provide a trigger 36, having a bifurcated end which straddles the reduced end of the carrier and is pivoted to the body, as at 37. This trigger has a cam surface 38, which engages the shoulder 39, formed by reducing the end of the carrier.

Referring again to the feeder wire 21, it will be noted by viewing Figs. 1 and 5, that the same extends through the carrier and through the jaw holder, projecting beyond the ends of the jaws and terminating in an expander head 41.

Upon this feeder wire is strung a plurality of

3

rivets, as shown at A and these are forced toward the head 41, by a pusher 42, and a spring 43.

The result of this construction is that, when the gun is loaded and it is desired to place a rivet in a designated opening, as shown in Fig. 3, the device is moved against the opening so that the expander head and rivet adjacent thereto will enter and extend through the opening formed in the plates B and C with the head of the foremost rivet contacting the plates.

By now pulling the trigger 36, the cam 38, pushing against the shoulder 39, moves the jaw holder 22 rearwardly through the spring tension of the spring 34. In so doing, the rear portion of the jaws will move into engagement with the end of the body 5 and move from the open position of Fig. 6 to the closed position of Fig. 7 and, at the same time, the reduced bevelled forward end of the carrier 11, will be pulled away from the rear ends of the jaws, permitting them to close. Appreciably further rearward movement of the jaw holder is arrested by contact of the outer rear ends of the jaws 24, 26 with the body 5, but the carrier 11, which is connected to said jaw holder 22 only by the spring 34, can move further rearwardly and, in so doing, the circular lips 29 of the two jaws, which are now surrounding the second rivet from the end, will be brought into engagement with the head of the rivet in the plates B and C, and continued rearward movement of the carrier will cause the feeder wire and expander head to be retracted through the rivet so as to expand the same, as shown in Figs. 4 and 9.

As soon as the trigger is released, the carrier and jaw holder will be brought towards each other by the spring 34 until both are in contact with lever 36 and the jaws will be opened by pressure of cam faces 32, 33 thereagainst to permit a new rivet to be fed into engagement with the expander head 41, ready for the next riveting operation. The opening of the jaws 24, 26 causes both the jaw holder 22 and the lever 36 to advance slightly due to continued contact of the exterior rear corners of the jaws 24, 26 with the body 5.

It will thus be seen that it is possible to rapidly place and expand rivets through the use of my riveting gun.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted

4

to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a riveting gun, a body-supporting member, said body having aligned bores formed therethrough, a rivet magazine carrier slidably mounted in one of said bores, a jaw holder mounted in the other of said bores, said jaw holder carrying pivoted jaws adapted to engage a rivet to be expanded, and means between said carrier and said jaw holder coacting with the body supporting member for closing and opening said jaws when said carrier is moved away from and toward respectively said jaw holder.

2. A riveting gun having a body and wherein is mounted a pair of aligned reciprocating members, one of said members having jaws pivoted thereto, the other of said members being resiliently connected thereto, and coacting means between said members for causing movement of said members toward each other when said members are reciprocated with respect to each other, said body having a forward end against which said jaws abut to cause pivotal action in counter direction to the first-mentioned movement.

3. A riveting gun comprising a body portion having aligned bores formed therethrough, a jaw holder slidably mounted in one of said bores, a reciprocating carrier mounted in the other of said bores and having a reduced end in telescopic engagement with said jaw holder, said reduced end having cam surfaces formed thereon, a pair of pivoted jaws carried by said jaw holder and having their rear end portions contacted by said cam surfaces when said jaws are in open position, and means for simultaneously moving said jaw holder and said carrier longitudinally in said body toward each other, and means to retract said jaw holder in said body whereby said jaws will engage said body and move to a closed position, said closed jaws acting for engaging the head of a rivet to be upset.

JERRY F. HAMLIN.

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