

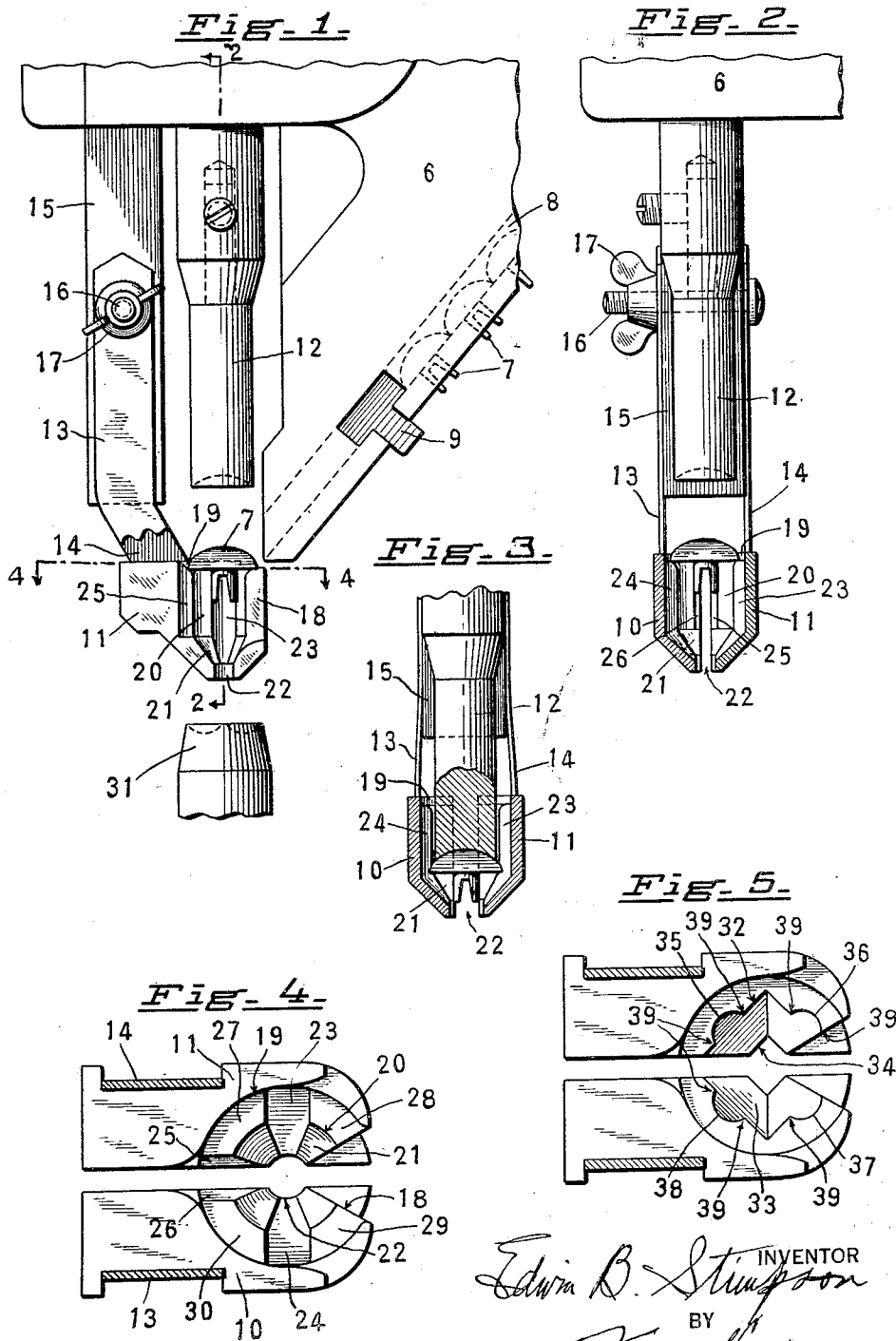
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GUIDE FOR RIVETING MACHINES

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UNITED STATES PATENT OFFICE.

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GUIDE FOR RIVETING MACHINES.

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To all whom it may concern:

Be it known that I, EDWIN B. STIMPSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Guides for Riveting Machines, of which the following is a specification.

This invention relates to riveting machines and particularly to the guiding of the rivets as they are being driven.

In some cases, and particularly with rivets having heads of relatively large diameter and appreciable height with comparatively small, short shanks, there is a tendency for the rivets to "tumble" and even turn completely upside down. This tendency is increased where the head of the rivet is not absolutely round, as is often the case.

The principal objects of the invention are to overcome this tumbling effect and to guide and hold the rivets under proper control during the driving operations.

These objects are attained in the structure disclosed in the accompanying drawing forming part of this specification, which illustrates but one of the novel embodiments the invention may take.

Figure 1 is a front elevation of the head of a riveting machine having the invention incorporated therein, the front rivet guide being omitted to show a rivet in position behind the same.

Figure 2 is a partial vertical sectional view on substantially the plane of line 2—2 of Figure 1.

Figure 3 is a similar view, illustrating the spreading of the guides under the driving action of the plunger.

Figure 4 is an enlarged plan view of the rivet guides, as taken on substantially the plane of line 4—4 of Figure 1.

Figure 5 is a similar view of a modified form of the guides.

In the illustration 6 designates the head portion of a riveting machine and at 7 are shown the rivets which travel in an inclined chute 8 and are released by the cross slide 9, one by one, to the co-operating guides 10 and 11 in position beneath the plunger 12.

The guides are shown as supported by spring arms 13, 14 removably secured to the slide 15 by bolt 16 and wing nut 17.

The opposing forward edges of the guides,

facing the lower end of the chute are shown as cut away on convergent angles at 18 to form an entrance for the shank of the rivet and the tops of the guides are shown as cut down to form a pocket 19 of a size and shape to receive and steady the head of the rivet.

Below the head receiving pocket the guides are shaped to provide a substantially cylindrical passage 20 of slightly smaller diameter than the head of the rivet, terminating in a contracted conical portion 21 which leads to a cylindrical passage 22 substantially the size of the shank of the rivet.

A special feature of the invention is the construction of the guides with ridges or the like to operate as holding fingers, which by gripping the rivets at separated points will overcome the twisting or tumbling tendency.

In the first form of the invention, Figures 1 to 4, the guides are shown as longitudinally grooved in their opposite faces at 23, 24 and as having their edges reduced or cut away at 25, 26 at a point diametrically opposite the entrance way 18 for the rivet shanks, thus providing the four segments 27, 28, 29, 30 extending from the top of the guides to the shank guiding outlet 22 at the bottom thereof to operate as separate longitudinal guide fingers.

It will be seen that as the plunger descends, the guides being yieldingly supported, will spread as indicated in Figure 3, and that in the downward travel the head of the rivet will be gripped at four equally separated points and the rivet will therefore be driven straight and true, irrespective of any inequalities or irregularities in the shape of the head. The straightening effect is particularly exerted at a time when most needed, that is, when the rivet is approaching the end of its travel, as in Figure 3, when the head rides down over the lower, inclined or convergent portion of the fingers at 21. These convergent portions of the fingers, it will be seen, make it practically impossible for a rivet to turn or tumble at this time, and if the rivet has already started to turn they operate to automatically straighten it and send it on its true course to the anvil 31.

As one of the possible modifications of the structure I have shown in Figure 5 how practically the same guiding effect may be

obtained by constructing the cooperating guides with a substantially rectangular passage 32 in place of the cylindrical passage, with a convergent pyramidal portion 33 at the lower end thereof having a rectangular outlet 34. Substantially semi-cylindrical grooves 35, 36, 37, 38 cut in the four walls of the rectangular passage provide a series of ridges or edges 39 which will operate as longitudinal guide fingers, holding the rivet under control and keeping it in a straight course.

What I claim is:

1. In a rivet guide, cooperating guide members constructed and arranged to provide between them a rivet passage, the opposing faces of said guide members having separated longitudinally extending ridges forming guide fingers to hold the rivet heads at separated points during the driving operations, and the guide members having matched cut-away portions defining a lateral opening through which the shank of a rivet may enter between the guides.

2. In a riveting machine, a plunger and

a cooperating anvil, means for feeding the rivets into position beneath the plunger, cooperating spring pressed rivet guides and the guide having matched cut-away portions defining a lateral opening through which the shank of a rivet may enter between the guide, having a pocket at the top thereof to receive the rivet heads, said guides having a rivet passage between them extending downward from the pocket and contracted toward the lower end thereof, the walls of said passage, including the contracted portions having separated ridges operating as guiding fingers for the rivet heads, and the guide members having matched cut-away portions defining a lateral opening through which the shank of a rivet may enter between the guides.

3. The device set forth in claim 2, in which the rivet passage is generally non-circular, and in which the ridges are angular in cross-section.

In testimony whereof I affix my signature.

EDWIN B. STIMPSON.