Jan. 14, 1969 G. BUSKE 3,421,356

PANEL CRIMPING TOOL

Filed April 28, 1967 Sheet 1 of 2

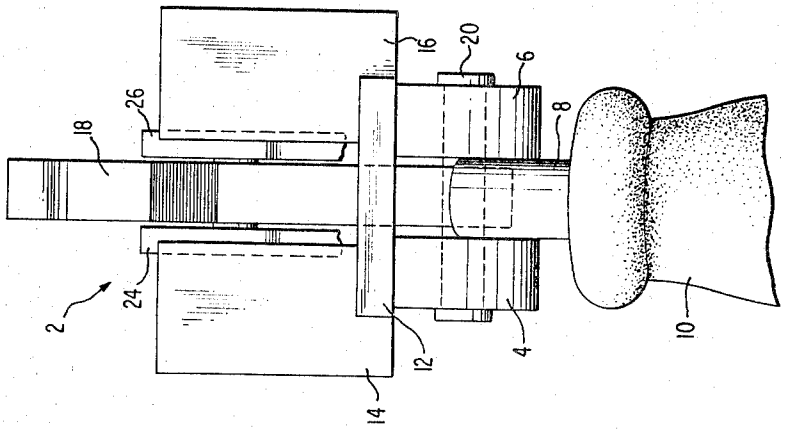


FIG. 2

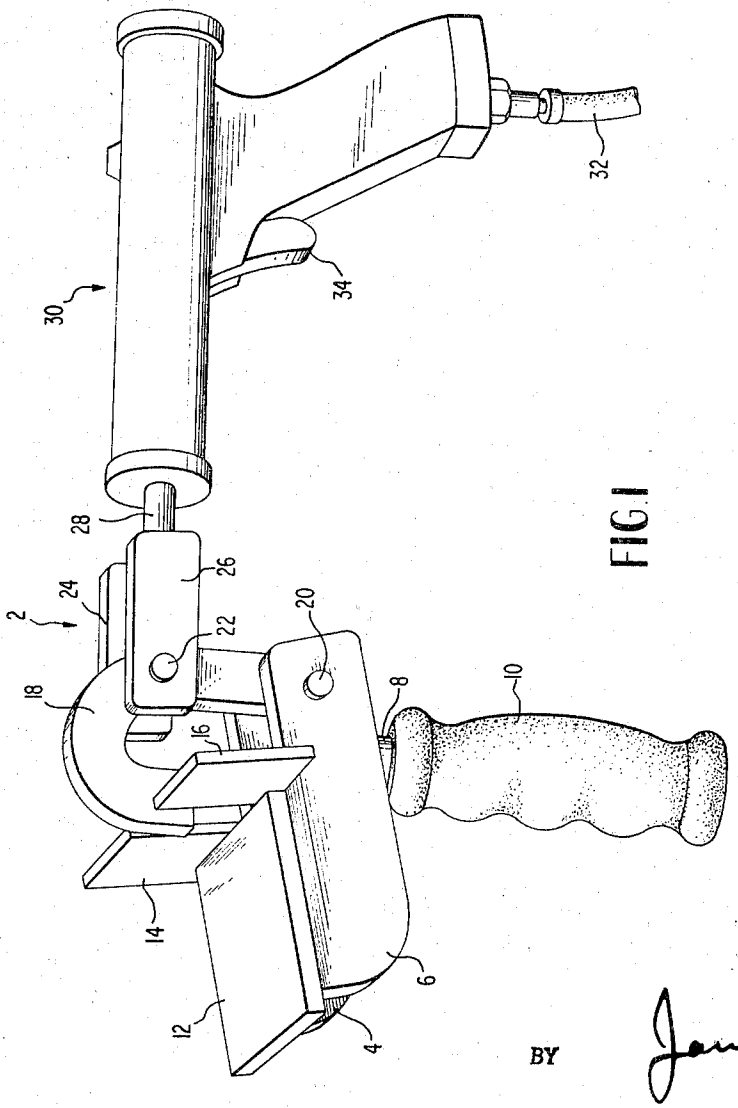


FIG. 1

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Jan. 14, 1969 G. BUSKE 3,421,356

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Filed April 28, 1967 Sheet 2 of 2

FIG.3

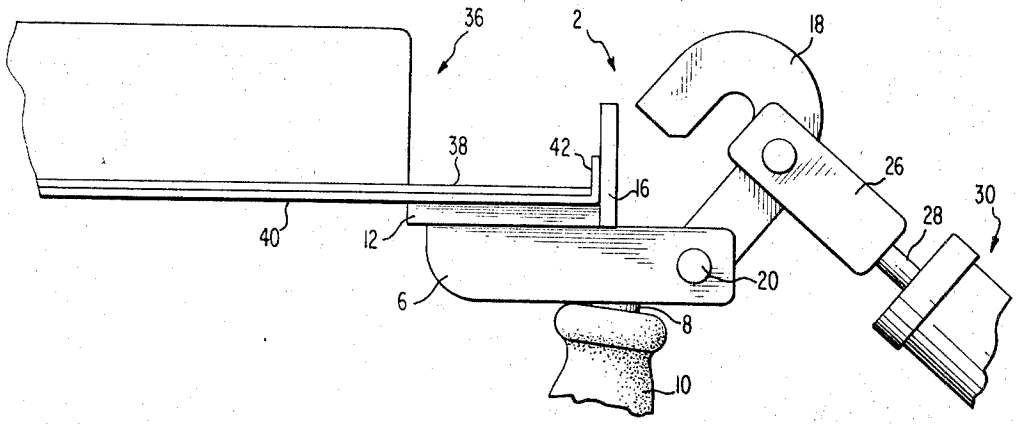
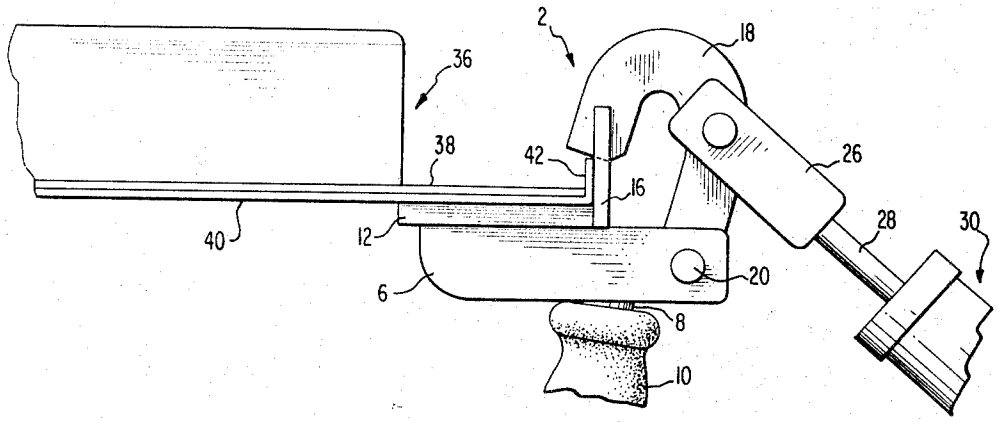


FIG.4



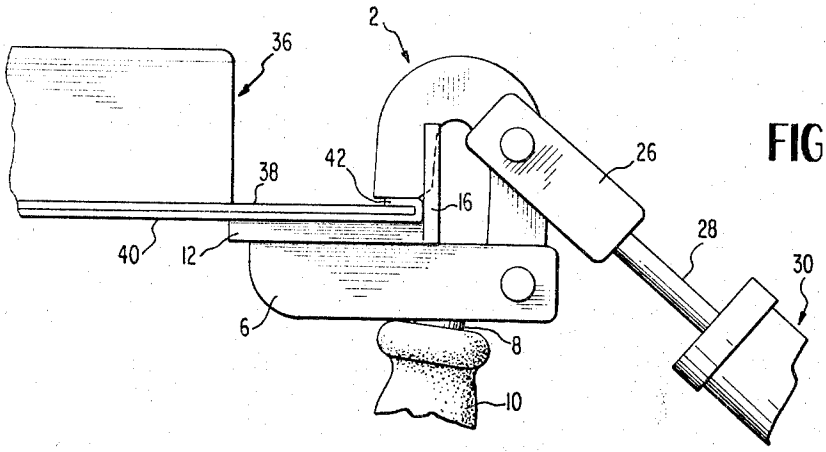


FIG.5

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3,421,356

PANEL CRIMPING TOOL

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Filed Apr. 28, 1967, Ser. No. 634,681
U.S. Cl. 72—387 4 Claims
Int. Cl. B21d 9/05; B21d 19/08

ABSTRACT OF THE DISCLOSURE

The tool is designed for use in crimping an upstanding flange on one panel downwardly over the edge of another overlying panel. Typically, the panels are those of an automobile door. The panels are arranged with the edges of the overlying panel disposed against the upstanding flange of the lower panel. The tool has a flat anvil which underlies the lower panel and upstanding stop plates which lie against the lower panel's upstanding flange. A hammer head, pivoted to the tool frame, is adapted to be connected to the piston rod of an air hammer. When the air hammer is actuated, the hammer head swings over and bends the upstanding flange on the lower panel down over the edge of the overlying panel.

Field of invention

The invention relates to metal deforming by relatively moving offset tool faces wherein the tool motion is in a fixed path.

The primary object of this invention is to provide a tool by means of which a body-shop repairman can quickly and firmly secure an outer door panel to an inner door panel. More particularly, it is proposed to provide a tool to be held in one hand at the edge of the preliminarily assembled door panels, the tool having a swinging hammer head which is attached to the piston of an air hammer which is held in the other hand. By providing the tool with a flat anvil plate and upstanding stop plates, it can be moved along the upstanding flange of the outer door panel, first for establishing a few spaced preliminary crimps, and then moved back along the intervening spaces between the preliminary crimps to complete the crimp along the entire edge of the door.

These and other objects will be apparent from the specification and drawings, in which:

FIG. 1 is a perspective view of the tool and air hammer;

FIG. 2 is a front elevation of the tool alone; and

FIGS. 3, 4 and 5 are side elevations of the tool at the start, middle and finish of a typical crimping operation.

Referring first to FIGS. 1 and 2 of the drawings, in which like reference numerals denote similar elements, the panel crimping tool **2** comprises two spaced frame pieces **4** and **6** between which is welded the post **8** of a depending handle **10**. Across the tops of frame pieces **4** and **6** at the fronts thereof is welded a flat anvil plate **12**, and at the rear of the anvil plate are welded two spaced upstanding stop plates **14** and **16**. The shank of a hook-shape hammer head **18** is pivotally supported by a pintle **20** between the rear ends of frame plates **4** and **6**, it being noteworthy that hammer head **18** is free to swing through the space between stop plates **14** and **16** towards anvil plate **12**. Hammer head **18** is connected by a pivot **20** between two jaws **24**, **26** which are welded or otherwise secured to the piston **28** of an air hammer **30**. Air hammer **30** is connected by a hose **32** to a suitable source of compressed air so that when its trigger **34** is pulled, piston **28** shoots forwardly so as to rock hammer head **18** forwardly against anvil plate **12**.

FIGS. 3, 4 and 5 illustrate typical operation of the tool. Fragmentarily illustrated is a door assembly **36** having an inner panel **38** and an outer panel **40**, the latter of which is provided with an upstanding flange **42**. The panels are preliminarily arranged as shown in FIG. 3, with the inner panel **38** resting in the outer panel **40**, outer panel **40** resting on anvil plate **12**, and with flange **42** against stop plates **14**, **16**. At the start, hammer head **18** is retracted away from the work. When air hammer **30** is actuated, hammer head **18** extends forwardly to engage the free edge of flange **42** and then, upon further forward extension of the hammer head, flange **42** is crimped down over the free edge portion of the inner panel **38**. A few spaced crimps will hold the panels together, and by moving tool **2** along the edge of the panel assembly, repeated blows of hammer head **18** will establish a continuous crimp which holds the panels together and finishes the edge of the panel assembly.

The invention is not limited to the details shown and described, but is intended to cover all substitutions, modifications and equivalents within the scope of the following claims.

I claim:

1. A panel crimping tool comprising,
a frame,
an anvil plate on said frame, stop means upstanding from said anvil plate,
a hammer head pivotally supported on said frame for swinging movement towards and away from said anvil plate,
and means for pivotally connecting said hammer head to the piston rod of a power-actuated piston-rod reciprocating device.

2. A panel crimping tool as defined in claim **1**,
said stop means comprising a pair of stop plates disposed at right angles to said anvil plate with a space therebetween,
said hammer head being pivotally supported on said frame for swinging along an arc which passes through the space between said stop plates.

3. A panel crimping tool as defined in claim **1**,
and handle means for manually supporting said tool beneath an edge portion of a panel assembly.

4. A panel crimping tool comprising,
a pair of spaced parallel frame strips adapted to be horizontally disposed, a depending handle post rigidly secured between said frame strips and extending downwardly therefrom,
a horizontally disposed anvil plate affixed across the upper sides of said frame strips adjacent one end thereof,
a hook-shaped hammer head having a shank portion connected by a pivot between the other ends of said frame pieces and having a free end portion disposed towards said anvil plate,
a pair of spaced upstanding stop plates disposed between the hammer head pivot and the anvil plate,
said hammer head being reciprocatable towards and away from said anvil plate through the space between the stop plates,

and means for pivotally connecting the hammer head to a power-actuated reciprocating device.

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72—453; 29—200, 243.58; 113—54