Nov. 25, 1941. V. D. MERCORELLI 2,263,952

METAL FLANGING AND SHRINKING TOOL

Filed Dec. 28, 1940 2 Sheets-Sheet 1

Fig. 1.

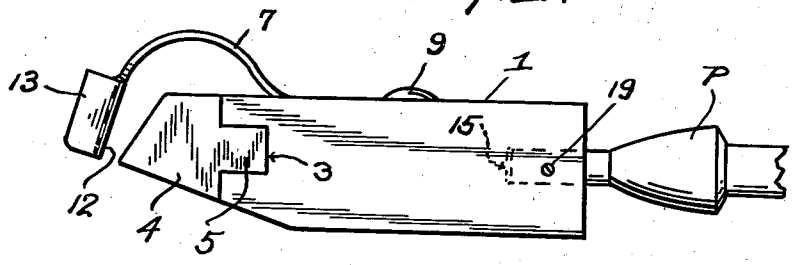


Fig. 2.

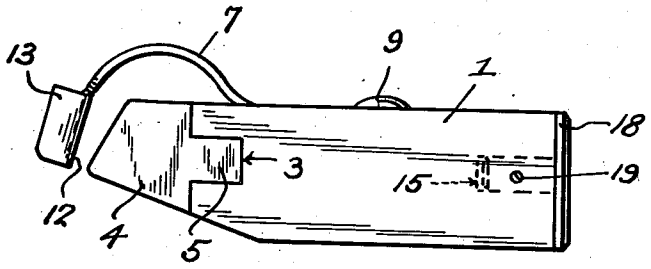
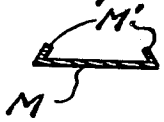


Fig. 6.



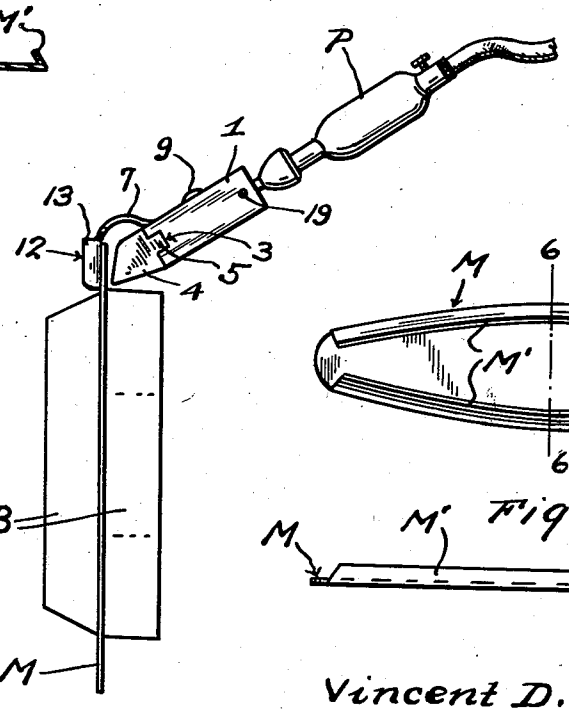


Fig. 3.

Fig. 4.

Fig. 5.

Inventor

Vincent D. Mercorelli

By L. B. James

Attorney

Nov. 25, 1941. V. D. MERCORELLI 2,263,952

METAL FLANGING AND SHRINKING TOOL

Filed Dec. 28, 1940 2 Sheets-Sheet 2

Fig. 7.

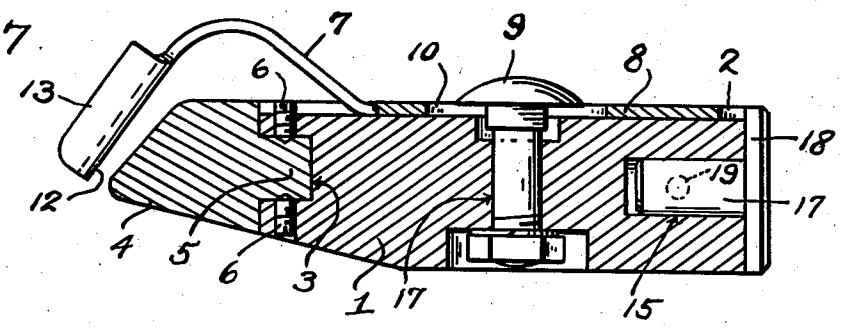


Fig. 8.

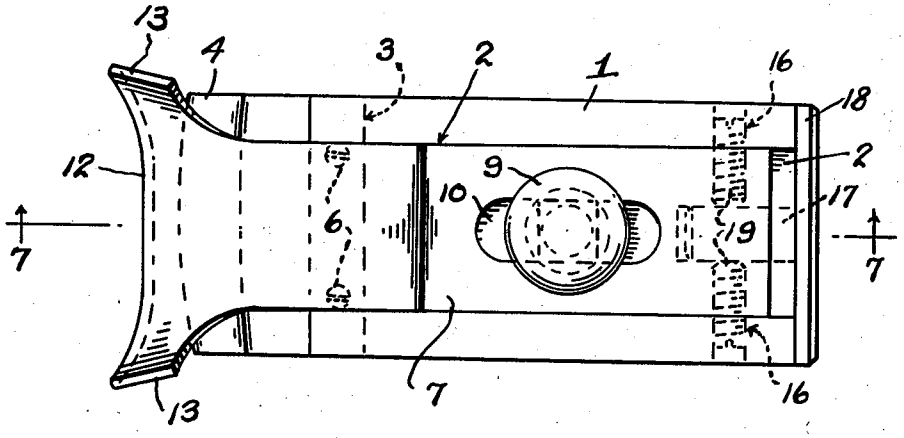


Fig. 9.

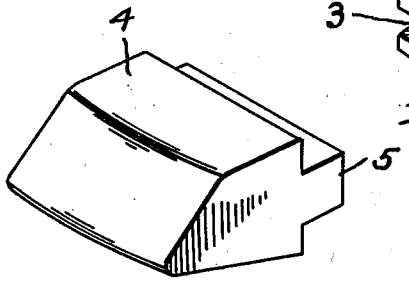
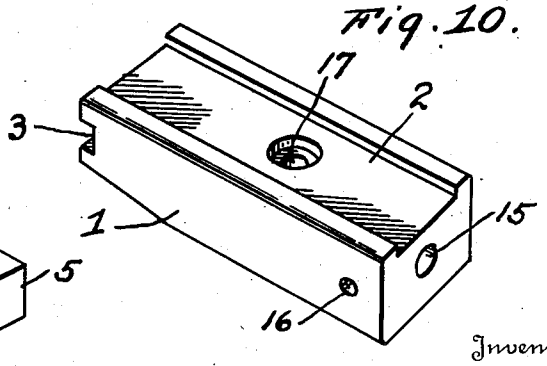


Fig. 10.



Inventor

Vincent D. Mercorelli

By L. B. James

Attorney

Patented Nov. 25, 1941 2,263,952

UNITED STATES PATENT OFFICE

2,263,952

METAL FLANGING AND SHRINKING TOOL

Vincent D. Mercorelli, Farmingdale, N. Y.

Application December 28, 1940, Serial No. 372,155

3 Claims. (Cl. 81—15)

This invention relates to a tool mainly designed for flanging and shrinking metal, such as dural and aluminum, the general object of the invention being to provide a body having a striking head, with means whereby the body can be struck by a hand hammer or a pneumatic hammer, with a spring-carried member held in spaced relation from the head which cooperates with the head of the body in forming a rib.

The invention also consists in certain other features of construction, combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Fig. 1 is an elevation of the tool and showing the same attached to a pneumatic hammer.

Fig. 2 is a similar view, but showing the tool provided with a part adapted to be struck by a hand hammer.

Fig. 3 is a view showing how the device is used for forming a flange.

Fig. 4 is a face view, showing a metal piece shaped by the tool.

Fig. 5 is an edge view of such piece.

Fig. 6 is a section on line 6—6 of Fig. 4.

Fig. 7 is a longitudinal sectional view through Fig. 2.

Fig. 8 is a top plan view of the tool shown in Fig. 2.

Fig. 9 is a view of the head of the tool detached from the body.

Fig. 10 is a perspective view of the body.

As shown in these views, the tool comprises a body 1 having a channel 2 in its top and a groove 3 in its front end. The head of the tool is shown at 4, and said head is provided with a tongue 5 for fitting in the groove 3, and said tongue is detachably held in the grooves by the set screws 6. A metal strap 7 has a slotted flat part 8 fitting in the channel 2, and said flat part is adjustably held in the channel by the bolt 9 which passes through the slot 10 in the flat part and through a counterbore hole 11 in the body. The intermediate part of the member 7 curves upwardly and forwardly and merges into the head part 12, which is of considerable width and provided with the side wings 13 which extend upwardly and outwardly as shown. By adjusting this member 7, the space between the head part 12 thereof and the sloping surface of the head part 4 of the tool can be adjusted.

The rear end of the body 1 is formed with an opening 15 which is intersected by the threaded holes 16. This opening 15 can receive the stem 17 of a head 18, or it may receive part of a pneumatic hammer P, as shown in Figs. 1 and 3. In either case, the part is held in the opening 15 by the screws 19.

This tool is mainly designed for forming a metal member M, shown in Figs. 4, 5 and 6, or any flanged member, such as used, for instance, in various jobs in aircraft factories.

As is well known, ribs, frames and bulkheads are now hammered by hand in aircraft factories, with the hammer backed up with a piece of wood. With this tool, the head 12 takes the place of this piece of wood, as shown in Fig. 3. In order to form smooth arcuate flanges on the piece of metal M with the tool forming the subject matter of this application, the metal is tightly held between blocks B with its edges projecting beyond the sides of the blocks whereupon the head part 12 is disposed against one side of the projecting portion of the metal with the head 4 closely disposed on the opposite side of the projecting portion of the metal in opposed relation to the head part 12 and, upon operation of the pneumatic hammer, the tool will vibrate longitudinally causing continuous impacts against the projecting portion of the metal to not only bend the same toward the head 4 but to stretch it so as to form the smooth inturned arcurate flanges M' as shown in Figs. 4 and 5.

The head 4 is preferably formed of plastic or other suitable material so that it will not damage the metal being shaped, and it can be replaced whenever it is damaged or worn out.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction, combination and arrangement of the several parts, provided such changes fall within the scope of the appended claims.

What I claim and desire to protect by Letters Patent is:

1. A tool of the class described comprising a body having a groove in its front end, a head having a rib fitting in the groove, means for detachably holding the rib in the groove, a member slidably connected with the body and having a neck part curving upwardly and forwardly and terminating in a winged head, which is spaced

from an operative face of the first-mentioned head.

2. A tool of the class described comprising a body having a groove in its front end, a head having a rib fitting in the groove, means for detachably holding the rib in the groove, a member slidably connected with the body and having a neck part curved upwardly and forwardly and terminating in a winged head, which is spaced from an operative face of the first-mentioned head the rear end of the body having a hole therein, a striking member having a stem fitting in the hole, and screws for holding the stem in the hole.

3. A tool of the class described comprising a body having a groove in its front end, a head having a rib fitting in the groove, a member slidably connected with the body and having a neck part curving upwardly and forwardly and terminating in a winged head, which is spaced from an operative face of the first-mentioned head, the rear end of the body having a hole therein for receiving a part of a pneumatic hammer, and screws for holding said part in the hole.

VINCENT D. MERCORELLI.