May 20, 1924. 1,495,103

G. E. PAGE

SHEET METAL SHAPING MACHINE

Filed April 18, 1921

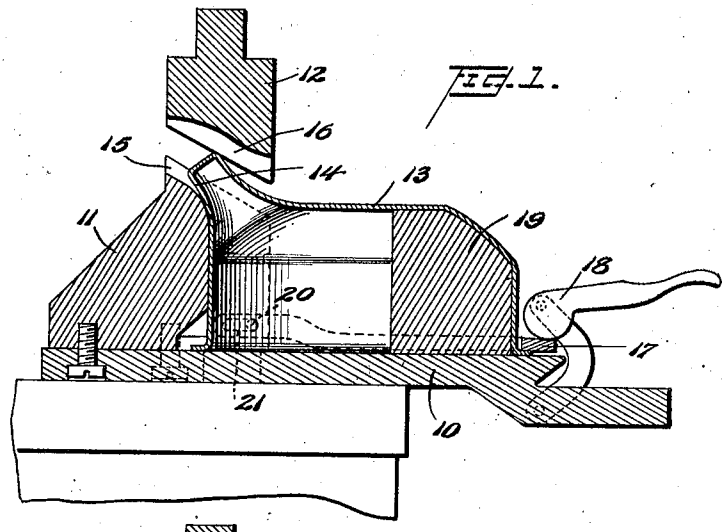


FIG. 1.

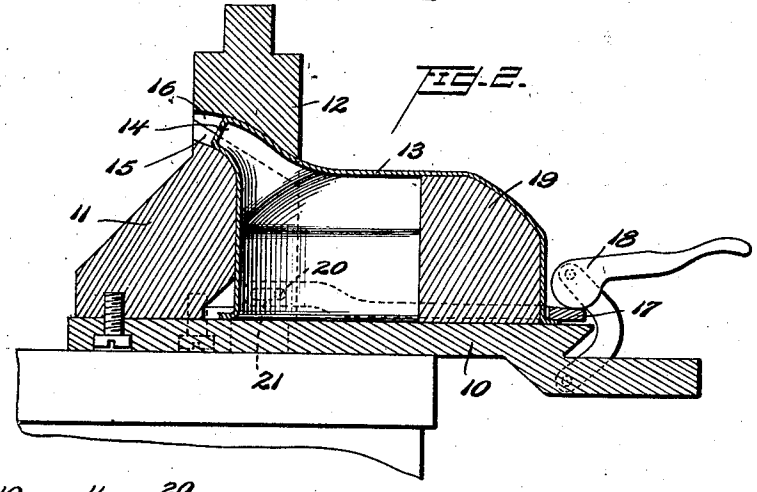


FIG. 2.

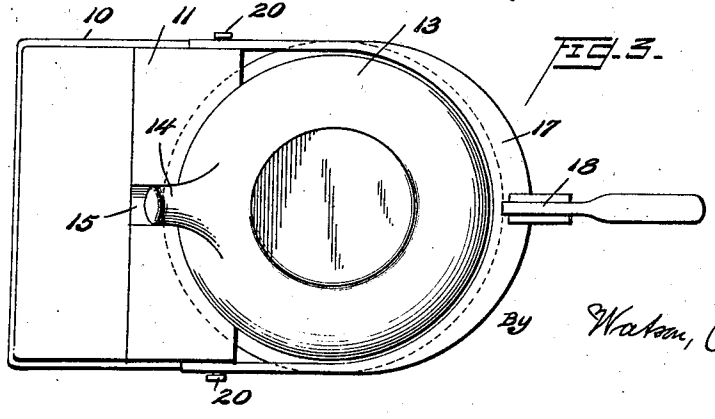


FIG. 3.

Inventor

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Attys

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UNITED STATES PATENT OFFICE.

GEORGE E. PAGE, OF ROCHESTER, NEW YORK, ASSIGNOR TO MONTOUR ALUMINUM SOLDERING CORPORATION, OF MONTOUR FALLS, NEW YORK, A CORPORATION OF NEW YORK.

SHEET-METAL-SHAPING MACHINE.

Application filed April 18, 1921. Serial No. 462,217.

To all whom it may concern:

Be it known that I, GEORGE E. PAGE, a citizen of the United States, and residing at Rochester, Monroe county, State of New York, have invented certain new and useful Improvements in Sheet-Metal-Shaping Machines, of which the following is a specification.

The present invention relates to shaping devices for sheet metal articles. The object of the invention is to provide an apparatus by means of which tubular sheet metal members may be suitably curved, for instance, tubular spouts formed integral with sheet metal vessels or containers. In my copending application Serial No. 462,214, filed April 18, 1921, is disclosed a method of forming a tubular pouring spout for a sheet metal vessel or container which is integral with the body of the vessel. When the tubular spout has been completely extruded from the body of the vessel it is only necessary to then cut the end from the extruded nose or projection and to curve the same. It is essential that the curving operation be performed without distorting the body or destroying its symmetry. To this end I have devised a special press, which is the subject matter of the present invention.

It will be understood that although this press is particularly useful in connection with the curving of the tubular integral spouts of sheet metal containers it is not limited to this use. On the contrary, it is a machine of general application which may be used for work of widely different character, and is susceptible of considerable modification for different purposes, within the scope of the invention.

In the drawings:

Fig. 1 is a vertical section through the press showing a sheet metal container in position to have its extruded spout curved;

Fig. 2 is a similar view but showing the plunger of the press at the completion of its working stroke; and

Fig. 3 is a top view of the press, the plunger being omitted.

The press comprises essentially a base member 10, a stationary die 11 and a plunger or movable die 12, together with additional means for securing the work in position to be operated on. The shaping member or die 11 has a curved surface against which the cylindrical wall of the work 13 closely fits with the nose or protuberance 14 thereof extending laterally over groove 15 formed in the inclined upper surface of die 11. The plunger 12 is likewise provided with a groove 16 in its bottom and when the plunger descends this groove fits over the protuberance 14, the groove being so shaped that when the plunger 12 has completed its downward or working stroke, as illustrated in Figure 2, and has come to rest on top of die 11 the protuberance 14 will have been bent downwardly to conform to the curved walls of the grooves 15 and 16.

During this bending operation the shell is held against movement by clamping its flange to the base 10 by means of the U-shaped clamping member 17 and a hand operated cam member 18. To prevent the metal at the rear of the shell from being pulled forward during the bending operation and injuring the symmetry of the vessel, a form 19 is provided which fits closely against the portion of the interior surface of the vessel opposite the spout and prevents such movement, this form being secured to base 10 in any suitable manner. The ends of the U-shaped clamping member 17 have pin and slot connections with the part 11 as indicated at 20 and 21, in order that the member may be moved to the right to permit positioning of the shell in the device.

As previously mentioned, the invention is particularly useful in connection with the fabrication of sheet metal vessels having integral tubular spouts, in accordance with the method disclosed in my copending application, but the invention is of general utility and not limited to any particular use and is also adapted to be embodied in various different forms.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. A device for curving a tubular spout formed integral with a cup-shaped sheet metal body, comprising a base, a form for fitting against a supporting inner wall of the cup-shaped body during the curving operation, a die into which the spout is adapted to be pressed, a plunger for bending the spout, and means for securing the body to

said base with its inner wall in contact with said form and its spout immediately above said die.

2. A device for curving a tubular spout formed integral with a cup-shaped sheet metal body, comprising a base, a form for fitting against a supporting inner wall of the cup-shaped body during the curving operation, a die into which the spout is adapted to be pressed, a plunger for bending the spout, means for securing the body to said base with its inner wall in contact with said form and its spout immediately above said die, and means for supporting from the outside, the wall of said article adjacent the projecting nose, during the bending operation.

3. A device for curving a tubular spout formed integral with a cup-shaped sheet metal body, comprising a base, a form for fitting against a supporting inner wall of the cup-shaped body during the curving operation, a die into which the spout is adapted to be pressed, a plunger for bending the spout, means for clamping the edge of the metal body to the base whereby said body is held immovably upon said base, and means for supporting from the outside, the wall of said article adjacent the projecting nose, during the bending operation.

In testimony whereof I hereunto affix my signature.

GEORGE E. PAGE.