

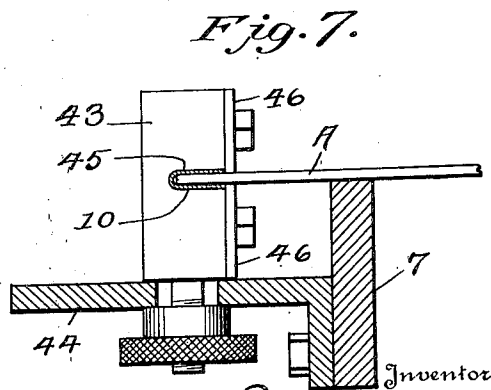
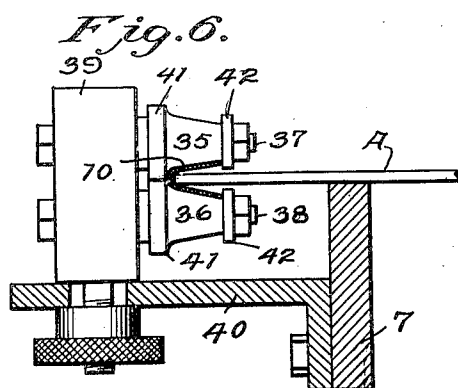
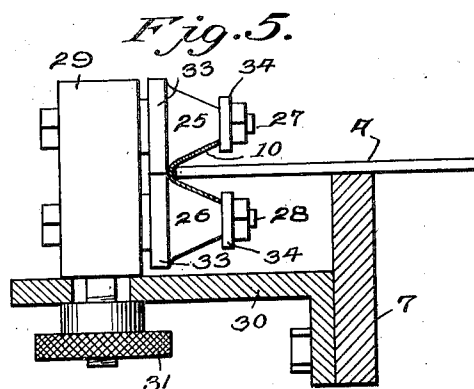
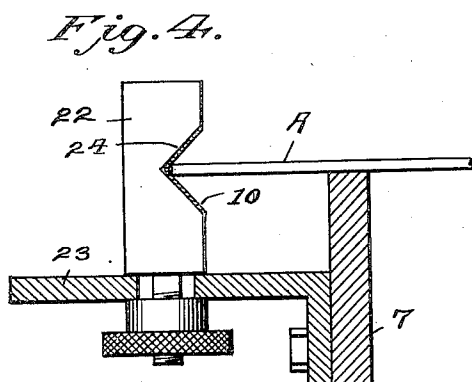
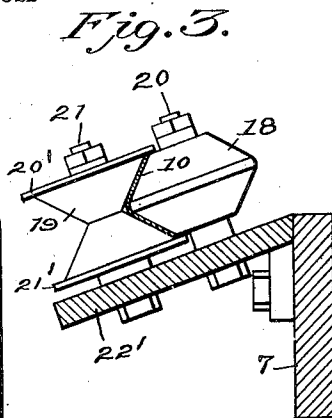
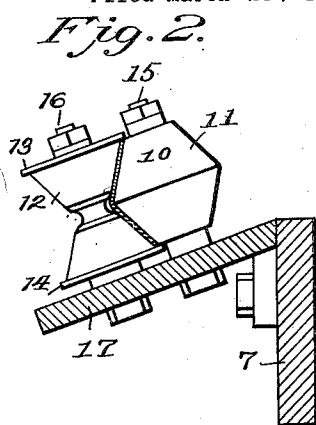
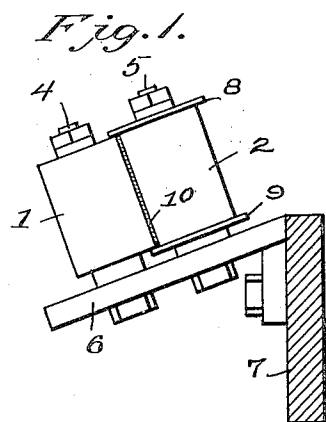
April 15, 1924.

1,490,772

S. J. GUNN

DEVICE FOR BENDING AND FORMING METAL STRIPS

Filed March 29, 1922



Inventor
Shelton J. Gunn
By *Wm. E. H. H. H.* Attorney

UNITED STATES PATENT OFFICE.

SHELTON J. GUNN, OF GUNNTOWN, FLORIDA.

DEVICE FOR BENDING AND FORMING METAL STRIPS.

Application filed March 29, 1922. Serial No. 547,936.

To all whom it may concern:

Be it known that I, SHELTON J. GUNN, a citizen of the United States, residing at Gunntown, in the county of Levy and State of Florida, have invented certain new and useful Improvements in a Device for Bending and Forming Metal Strips, of which the following is a specification.

This invention relates to a device for bending and forming metal strips.

The object of the invention is to bend a flat strip of comparatively stiff metal into substantially U-shaped form, when cold, by degrees, thereby eliminating the possibility of the metal breaking down under the operation.

These strips are primarily used to reinforce the edges of strips of wood which are primarily used as orange-box covers. The continuous metal strips are fed into the machine through a series of bending rolls, being substantially in L-shaped form before reaching the strips or covers around which they are to be formed. At this point in the operation, the covers and the now L-shaped strips of metal are fed through a second series of rolls and forming blocks, whereby the metal strips are bent by degrees from the substantially L-shaped form to a substantially U-shaped form around the edges of the cover.

In the accompanying drawings:

Figures 1, 2 and 3 illustrate the first set of bending rolls;

Fig. 4 illustrates the first forming block;

Figs. 5 and 6 illustrate the second series of bending rolls;

Fig. 7 illustrates the final forming block.

In the preferred construction of my invention, I preferably arrange a series of three sets of rolls as disclosed in Figs. 1, 2 and 3 of the drawings. The first set comprises a pair of guide-rolls 1 and 2, rotatively journaled upon suitable studs 4 and 5, which are mounted at an oblique angle upon the brackets 6 secured to a stationary member 7. The roll 2 is preferably provided with upper and lower flanges 8 and 9, which overlap the roll 1, serving to position properly the strip of metal 10 being fed through the rolls.

The metal strip 10 after leaving the rolls 1 and 2 passes between a set of male and female rolls 11 and 12, which are aligned with the first-mentioned set of rolls. The

male roll 11 has its largest diameter centrally thereof, tapering to a smaller diameter at its ends, the female roll 12 being just the reverse in contour, and coinciding with the contour of the roll 11. The last-mentioned roll 12 is also provided with upper and lower flanges 13 and 14, which overlap the roll 11 acting to position the metal strip 10 between the rolls as it is being fed through. The rolls 11 and 12 are preferably mounted on suitable studs 15 and 16 at an oblique angle and supported upon brackets 17 secured to the stationary member 7.

A similar set of male and female rolls 18 and 19 are aligned with the last-mentioned rolls, being mounted upon studs 20 and 21 secured to a bracket 22' supported by the stationary member 7. Said rolls 18 and 19 are of such a shape as to form the metal strip 10 being fed between them into a substantially L-shape form, the roll 19 being provided with upper and lower flanges 20' and 21' which overlap the ends of the roll 18, acting as a guide for the metal strip 10.

From this point in the operation, the wooden strip or cover A is now upset simultaneously with the now L-shaped continuous metal strip through the machine. As illustrated in Fig. 4, a forming-block 22 is detachably secured to a bracket 23 supported by the member 7, said block likewise being aligned with the previously-mentioned sets of forming rolls. This block is provided with a recess 24 of such a shape as to coincide with the L-shaped strip of metal 10, and, as illustrated in Fig. 4, embraces the end of the board A.

Aligned with the block 22 is a set of forming-rolls 25 and 26 mounted upon horizontal studs 27 and 28 carried by a supporting-block 29 secured to the bracket 30, being adjustably secured thereby by a knurled nut 31. The rolls 25 and 26 are substantially cone-shaped, and of such proportion as to form the metal strip 10, around the edge of board A, into substantially U-shaped form, said rollers being provided with inner and outer flanges 33 and 34, which act to confine the strip of metal to a proper position relative to the board A.

As illustrated in Fig. 6, another set of bending-rolls 35 and 36 are journaled upon the horizontally-arranged studs 37 and 38, carried by a block 39 adjustably secured to

the bracket 40, secured to the member 7. These rollers 35 and 36 are likewise provided with inner and outer flanges 41 and 42, which position the continuous strip 10 between the rolls, and which are of such a shape as to bend the strip 10 a little more around the edge of the board A.

Illustrated in Fig. 7 is a forming block 43 adjustably secured to the bracket 44 secured to the member 7. This block likewise is properly aligned with the last-referred to bending rolls, and is provided centrally thereof with a U-shaped opening 45 of such dimensions as to receive the edge of the board A and the metal strip 10 forming the latter into a substantially U-shaped form to fit snugly the edge of the board A. The inner edge of this block 43 is provided with die-plates 46 having a sufficient space therebetween to receive the board A, and in turn acting as a guide for the inner ends of the now U-shaped metal strips, said guides serving to distribute the U-shaped piece evenly on either side of the end of the board A.

It will thus be seen that I have devised a series of sets of bending rolls and forms, which, owing to their construction, bend or form by degrees a substantially flat continuous strip of metal to a substantially U-shaped form, at the same time forming said U-shaped metal strip around the edge of a strip or board A serving to reinforce and stiffen the ends thereof.

It is obvious that more or less slight changes might be made in the details of construction without departing from the general scope of the invention.

I claim:

1. A device of the character described, comprising studs set at an oblique angle to a vertical line, a series of sets of forming rolls rotatably journaled upon the studs, said rolls being beveled so as to form a continuous strip of flat metal to substantially L-shaped form in cross-section, and a series of sets of cone-shaped forming rolls journaled on horizontal axes so as to form said con-

tinuous strip from an L-shaped to a substantially U-shaped form.

2. A device for clamping a metal strip to a board, comprising studs set at an oblique angle to a vertical line, a series of sets of forming rolls rotatably journaled upon the studs, said rolls being beveled so as to bend a continuous strip of flat metal to a substantially L-shape in cross-section, a forming-block aligned with said series of bending-rolls having a substantially L-shaped recess therein adapted to receive a continuous strip and the end of the board, a series of sets of cone-shaped forming-rolls arranged upon horizontal axes so as to bend said continuous strip from an L shape to a substantially U-shaped form, and a final forming-block arranged in alignment with said last-mentioned bending rolls, provided with a substantially U-shaped recess adapted to form the continuous strip into a substantially U-shaped form around the edge of the board.

3. A device for clamping a metal strip to a board, comprising studs set at an oblique angle to a vertical line, a series of sets of forming rolls rotatably journaled upon the studs, said rolls being beveled so as to bend a continuous strip of flat metal to a substantially L-shape in cross-section, a forming-block aligned with said series of bending-rolls having a substantially L-shaped recess therein adapted to receive a continuous strip and the end of the board, a series of sets of cone-shaped forming-rolls arranged upon horizontal axes so as to bend said continuous strip from an L-shape to a substantially U-shaped form, and a final forming block arranged in alignment with said last-mentioned bending rolls, provided with a substantially U-shaped recess adapted to form the continuous strip into a substantially U-shaped form around the edge of the board, and guides on said block for positioning said U-shaped strip equally around the edge of said board.

In testimony whereof I affix my signature.
SHELTON J. GUNN.