No. 648,156. Patented Apr. 24, 1900.

G. H. STEWARD.

BEADING AND FLANGING MACHINE.

(Application filed Aug. 5, 1899.)

(No Model.)

Fig. 1.

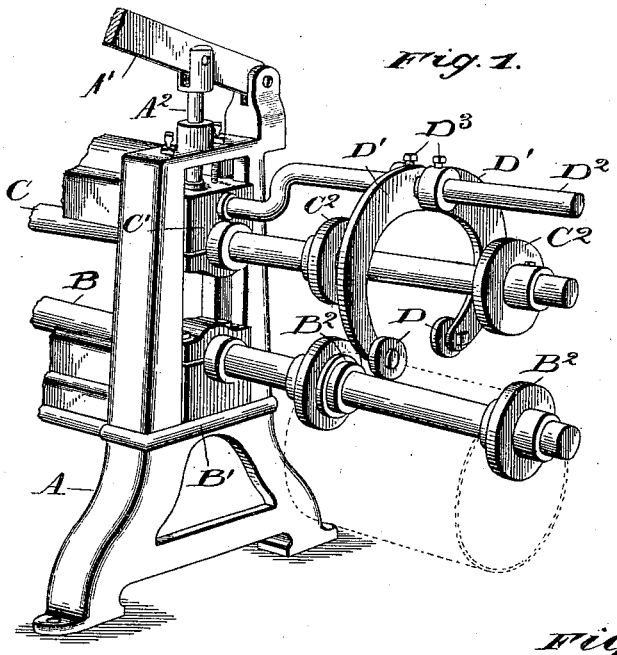


Fig. 2.

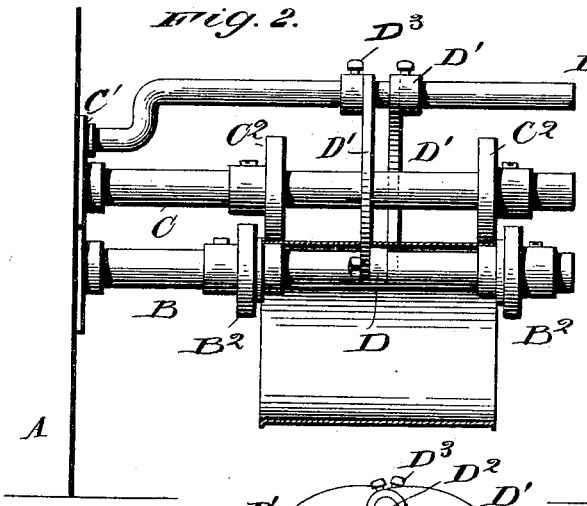


Fig. 3.

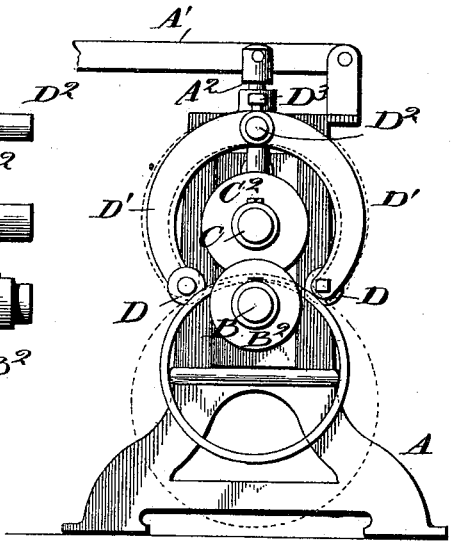
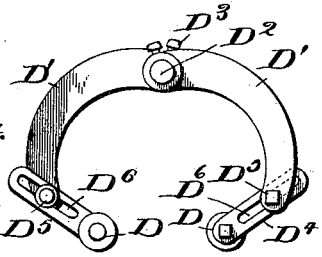


Fig. 4.



Witnesses
L. C. Hills,
Alfred I. Gage.

Inventor:
Geo. H. Steward,
By E. L. Stocking
Attorney

UNITED STATES PATENT OFFICE.

GEORGE H. STEWARD, OF CLARENDON, VERMONT.

BEADING AND FLANGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 648,156, dated April 24, 1900.

Application filed August 5, 1899. Serial No. 726,321. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. STEWARD, a citizen of the United States, residing at East Clarendon, in the county of Rutland, State of Vermont, have invented certain new and useful Improvements in Beading and Flanging Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to beading and flanging machines, and particularly to guide-rollers adapted to operate in contact with the body of the vessel being formed and to hold the same so that in its rotation it will be retained in a perfectly-round condition, thus permitting the exact feed of a top or bottom to the body portion.

The invention has for an object to provide guide-rollers located adjacent to and at opposite sides of a pair of bending-rolls, so as to guide the body of the vessel being formed and to hold the sheet metal at opposite sides of the point of contact of the bending-roll.

A further object of the invention is to render said guide-rollers movable to and from a body being operated upon, and, furthermore, to render the rolls adjustable toward and from each other as well as longitudinally upon their supporting-shaft.

Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective of one end of a beading and flanging machine, showing the guide-rollers applied. Fig. 2 is a side elevation with a can-body in section. Fig. 3 is an end view, and Fig. 4 is a modified form of the mounting for the rollers.

Like letters of reference indicate like parts throughout the several figures of the drawings.

The letter A designates a standard or part of the frame of any desired form of beading or flanging machine to which the invention may be applied. For the purpose of illustrating the application of the invention in the present instance a machine has been shown embodying a fixed shaft B, mounted in a boxing B′ and carrying upon its extended ends bending-rolls B^2. Above this shaft a movable shaft C is mounted in a sliding boxing C′ and provided with bending-rolls C^2, cooperating with the rollers B^2. The boxing C′ may be raised and lowered to adjust the bending-rolls by any suitable means—for instance, a lever A′ and connecting-rod A^2. The foregoing parts are of the usual construction and are only illustrated for the purpose of showing an application of the invention.

The guide-rollers D are each mounted upon independently-adjustable arms D′, secured upon a shaft D^2, mounted in the boxing C′ or otherwise movable to and from the rollers B^2. These arms are secured to the shaft D^2 by any means—for instance, set-screws D^3, by which the arms may be adjusted to and from each other or longitudinally upon the shaft.

I have shown in Fig. 4 a modified form of the invention, in which the guide-rollers D are mounted on adjustable plates D^4, supported at the free ends of the arms D by means of a suitable bolt D^5, passing though a slot D^6 in said plates. This permits a more extended adjustment of the arms for larger sizes of cans and obviates the necessity of disturbing the adjustment upon the rod D^2 except when it is desired to shift the arm longitudinally of said rod.

In the operation of the machine it will be seen that the body of the can or other vessel to be flanged or beaded rests upon the lower rolls B^2. The movable rolls C^2 are then moved downward into operation with the rolls B^2 to form the flange upon the ends of the can-body, as shown in Fig. 2. When the rolls C^2 descend, the guide-rollers D travel downward with the same and contact with the outside of the can-body at opposite sides of the bending-rolls and adjacent thereto. These guide-rolls hold the body of the metal firmly in contact with the lower rolls D^2 and prevent any buckling or slipping of the metal as the bending-rollers act thereon, thus insuring a positive feed and a smooth contact for the action of the bending-roller. The guide-rollers by holding the can in contact with the lower roll insure the same traveling in a perfectly-circular path, thus producing a can having an accurately-round body which will exactly fit the die-stamped or otherwise-formed cap or bottom piece attached thereto. It may be explained that much time is lost and material

wasted in the production of cans when the same are discharged from the beading and flanging machine with an irregular outline which will not fit the tops or bottom, so that it is highly essential to produce an accurately-round can corresponding in diameter to the cap or bottom to be applied thereto, so that no time is wasted in insuring a fit, nor is it necessary to fit the material upon a former to produce the proper shape. When the beading or flanging operation has been accomplished, the rollers C^2 will be lifted, and with them the guide-rollers D, thus releasing the can and permitting its ready removal. By adjusting the arms B′ longitudinally upon the shaft D^2 the rollers may be brought into contact with any portion of the can longitudinally of its length, while by adjusting the guide-rollers to and from each other provision may be made for any desired diameter of can or other vessel to be operated upon by the machine. (See dotted lines in Fig. 3.)

It will be obvious that the guide-rollers can be applied to any character of beading and flanging machine and in any desired manner, so that the invention is not necessarily confined to mounting the same upon the shaft traveling with the upper bending-rolls, as the guide-rollers may be mounted in any desirable manner to accomplish the functions hereinbefore set forth. Changes may be therefore made in the details of construction and configuration of the several parts without departing from the spirit of the invention as defined by the appended claims.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a beading and flanging machine, the combination with bending-rolls, of guide-rollers mounted to bear upon the material at opposite sides of the lower bending-rolls, and adjacent thereto to hold the material in contact therewith; substantially as specified.

2. In a beading and flanging machine, the combination with bending-rolls, of guide-rollers mounted to bear upon the material at opposite sides of the lower bending-rolls and adjacent thereto to hold the material in contact therewith, and means for adjusting said rollers toward and from each other; substantially as specified.

3. In a beading and flanging machine, the combination with bending-rolls, of guide-rollers mounted to bear upon the material at opposite sides of the lower bending-rolls and adjacent thereto to hold the material in contact therewith, means for adjusting said rollers toward and from each other, and means for adjusting said rollers longitudinally of the material operated upon; substantially as specified.

4. In a beading and flanging machine, the combination with a fixed bending-roll and a movable bending-roll a shaft movable with said movable roll, independent arms mounted upon said shaft, and guide-rollers carried by the free ends of said arms and adapted to bear upon the body of the can resting on said stationary bending-roll; substantially as specified.

5. In a beading and flanging machine, the combination with a fixed bending-roller and a movable bending-roll, a shaft movable with said movable roll, independent arms mounted upon said shaft, guide-rollers carried by the free ends of said arms and adapted to bear upon the body of the can resting on said stationary bending-roll, and means for adjusting said rollers toward and from each other; substantially as specified.

6. In a beading and flanging machine, the combination with a fixed bending-roll and a movable bending-roll, a shaft movable with said movable roll, independent arms mounted upon said shaft, guide-rollers carried by the free ends of said arms and adapted to bear upon the body of the can resting on said stationary bending-roll, means for adjusting said rollers toward and from each other, and means for adjusting said arms independently and longitudinally upon their supporting-shaft; substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE H. STEWARD.

Witnesses:
GEO. K. MONTGOMERY,
FRED C. SPENCER.