

E. E. SLICK.
HOOP BEADING MACHINE.
APPLICATION FILED APR. 27, 1906.

943,478.

Patented Dec. 14, 1909.

2 SHEETS—SHEET 1.

Fig. 2.

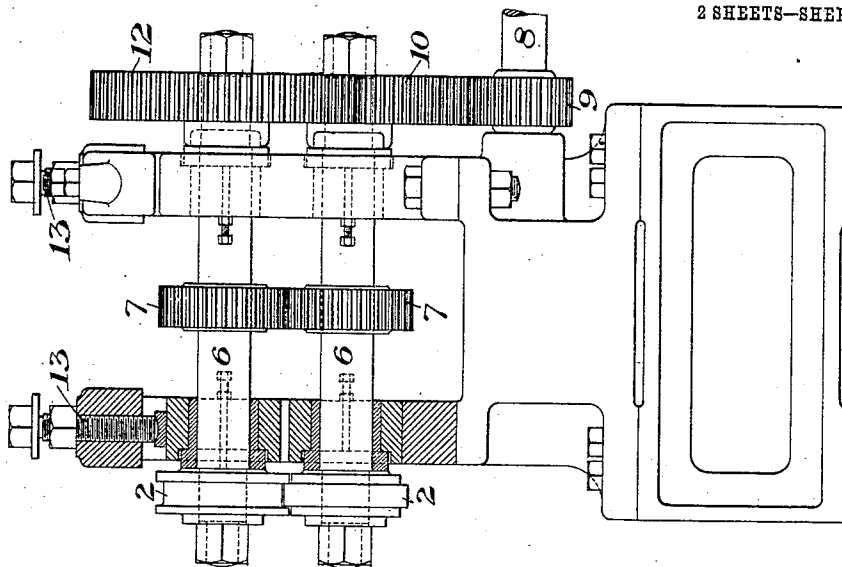
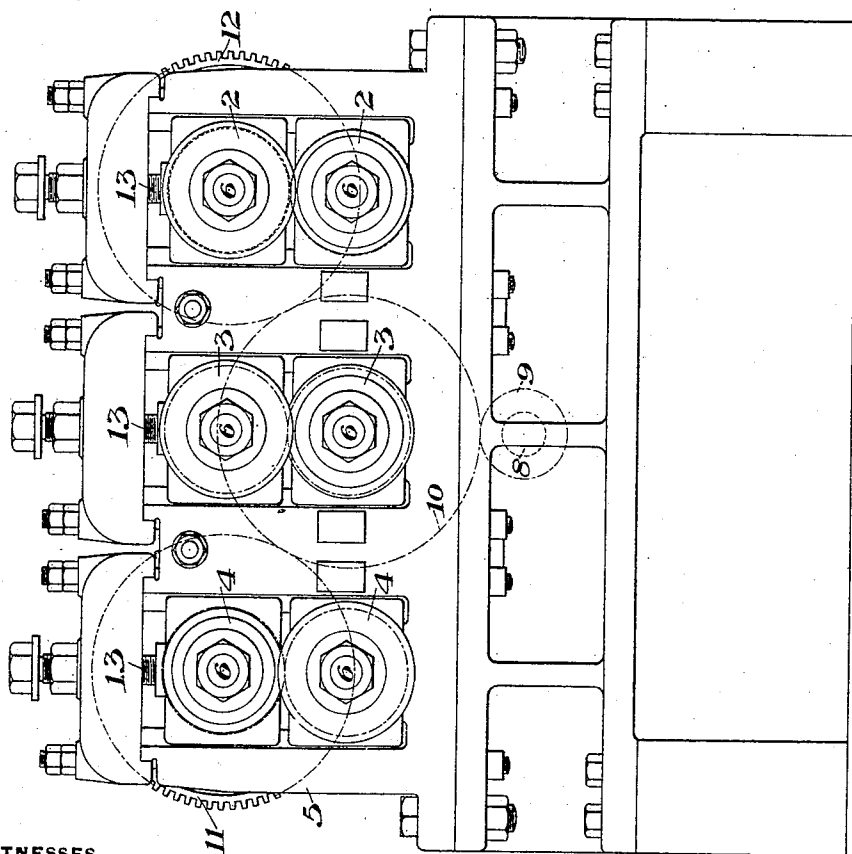


Fig. 1.



WITNESSES

Warren U. Bwartz
R. A. Balderson

INVENTOR

E. E. Slick
by Balderson & Bwartz
his attys

943,478.

Patented Dec. 14, 1909.
2 SHEETS—SHEET 2.

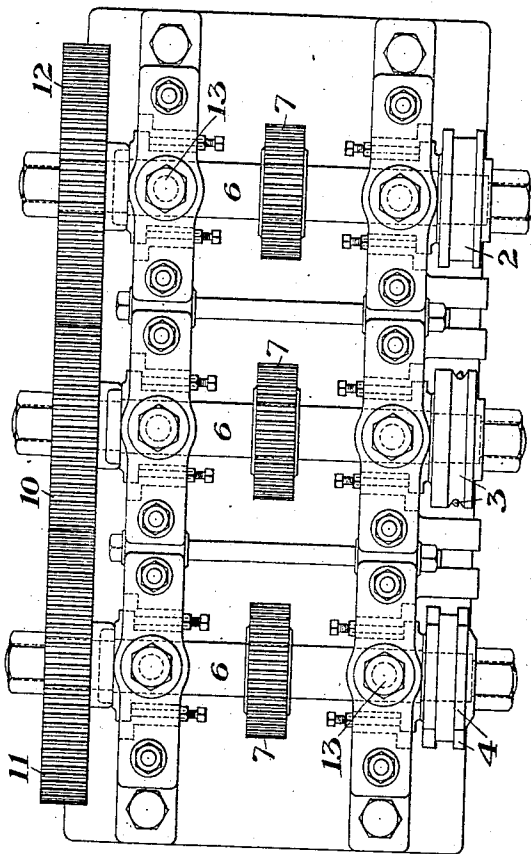


Fig. 3.

Fig. 4.

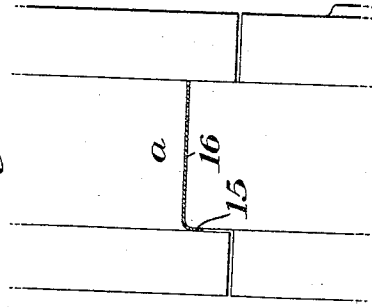


Fig. 5.

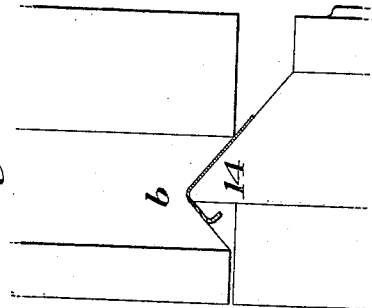
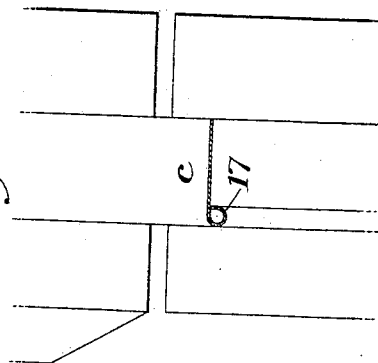


Fig. 6.



Warren U. Swartz
R. A. Balderson.

INVENTOR
E. E. Slick
by Balderson & Hayes
his attys

UNITED STATES PATENT OFFICE.

EDWIN E. SLICK, OF PITTSBURG, PENNSYLVANIA.

HOOP-BEADING MACHINE.

943,478.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed April 27, 1906. Serial No. 313,968.

To all whom it may concern:

Be it known that I, EDWIN E. SLICK, of Pittsburgh, Allegheny county, Pennsylvania, have invented a new and useful Hoop-Beading Machine, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a beading mill arranged for carrying out my invention; Fig. 2 is a sectional end elevation of the same; Fig. 3 is a top plan view; and Figs. 4, 5 and 6 are enlarged views of the successive passes.

My invention relates to the beading of the edge or edges of hoops, and is designed to provide a simple and improved apparatus for carrying out this operation rapidly and cheaply.

In the drawings, 2, 2, 3, 3 and 4, 4 represent successive stands of two-high rolls arranged in tandem. These rolls are preferably overhung on one side of the housings 5 and on the roll shafts 6 between the housings are mounted driving pinions 7. Below the opposite ends of the shaft is a driving shaft 8 having a pinion 9 intermeshing with toothed wheel 10 on the lower middle roll. This toothed wheel 10 intermeshes with toothed wheels 11 and 12 on the upper rolls of the end sets. The rolls are preferably mounted in adjustable bearings, and the top rolls may be adjusted by screws 13.

The main feature of my invention lies in the bending passes to perform the beading operation. The first of these passes *a*, shown in Fig. 4, consists of a horizontal portion and a vertical portion connected to the horizontal portion by a curve. The length of the horizontal portion of this pass is such that one edge of the hoop will be bent over to form a flange at right angles to the body of the hoop, the entire length of the pass being equal to the greatest width of hoop desired to be bent. In the second pass *b*, the groove in the upper roll is of triangular shape, and coacts with a projecting nose portion 14 of annular shape on the lower roll. These coacting portions of the rolls serve to bend the right angled flange of the first pass into an acute angled position with reference to the main body of the strip. Thus, the flange 15 which in pass *a* was at right angles to the body 16 is bent at an acute angle in the second pass, the body of the hoop being curved between the flanged edge

of the hoop and the opposite edge, the lower roll in this pass having clearance for the free bent edge of the hoop. In the third pass, the part of the pass formed by the top roll is preferably flat and horizontal; while the portion of the pass formed by the lower roll is correspondingly flat except for one portion which is grooved in annular form to substantially the shape of the bead. The flange coming from the second pass enters this grooved portion of the third pass, and is thereby bent into the form of the bead 17.

The metal hoop is preferably in all three rolls at the same time, successive portions being shaped to the successive forms simultaneously, although each separate operation may be completed before the succeeding operation is commenced.

The advantages of my invention result from the rapidity and cheapness of the operation, and the correctness of shape afforded by the successive bending passes. The bead may be formed upon long lengths without cutting up into hoops, thus making the material cheaper to handle, or the material may be cut into the lengths required to form a single hoop before being fed into the beading rolls.

Many changes may be made in the form and arrangement of the rolls, the driving connections, &c., without departing from my invention.

I claim:—

1. Apparatus for beading metal hoops comprising rolls having a series of bending passes, the first pass being arranged to bend one edge of a flat metal strip to form a flange portion, the second bending pass being arranged to further bend the flat body portion of the strip between the flanged edge and the opposite edge of the strip and a third grooved bending pass arranged to form the bent portion of the strip into a marginal bead, substantially as described.

2. Apparatus for forming beads on metal hoops, comprising rolls having a bending pass arranged to bend one edge of a flat metal strip, a second bending pass arranged to further bend the flat body portion of said strip between the bent edge and the opposite edge of the strip and a third bending pass having a grooved portion in which the bent edge of the strip is further bent and is curved into and forms a hollow marginal bead, substantially as described.

3. Apparatus for beading metal hoops

comprising a series of sets of horizontal rolls arranged in tandem to receive the metal strip at the same time, the first set of rolls having a pass arranged to bend a flange on the edge of the hoop, a second set of rolls having a pass arranged to bend the hoop between the flange and the opposite edge of the strip, and a third set of rolls having a grooved pass arranged to form the bent portion of the hoop into a bead; substantially as described.

4. Apparatus for beading metal hoops

comprising bending rolls having a bending pass in which one edge of a flat metal strip is bent and a second bending pass arranged to further turn the bent edge of the strip and form a hollow marginal bead thereon, substantially as described.

In testimony whereof, I have hereunto set my hand.

EDWIN E. SLICK.

Witnesses:

R. D. LITTLE,
H. M. CORWIN.