

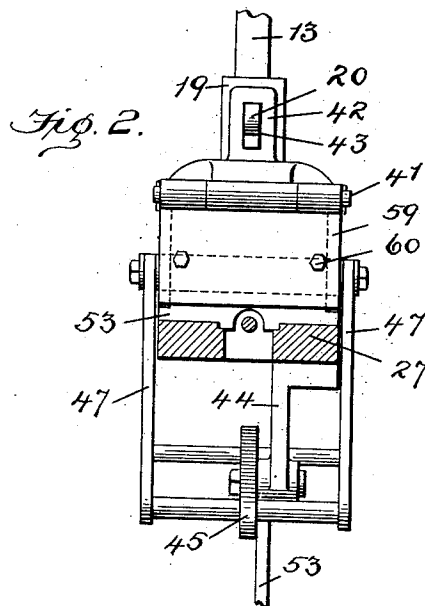
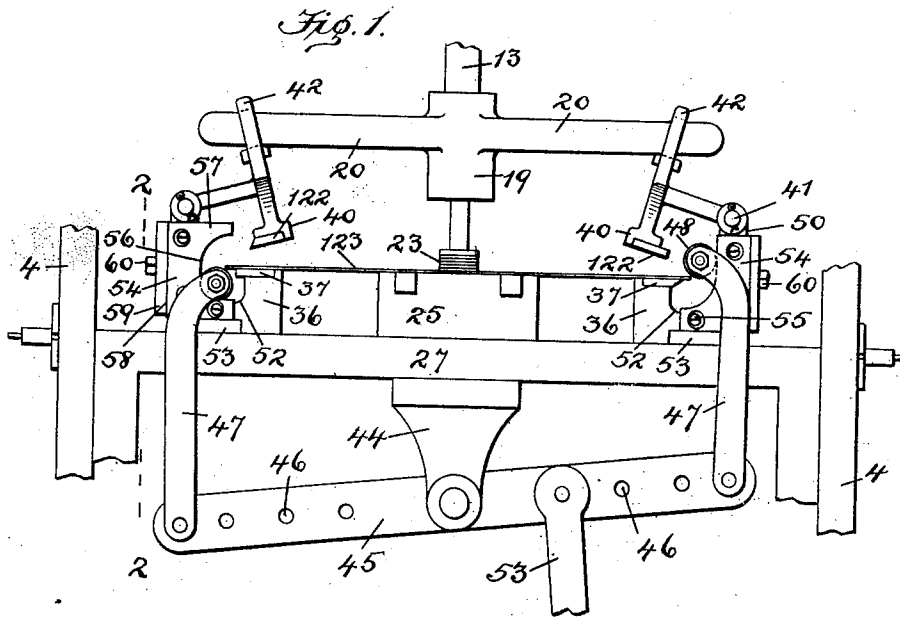
No. 826,807.

PATENTED JULY 24, 1906.

A. SLAYSMAN, JR.
MACHINE FOR EDGING SHEET METAL BLANKS.

APPLICATION FILED APR. 21, 1906.

2 SHEETS—SHEET 1.



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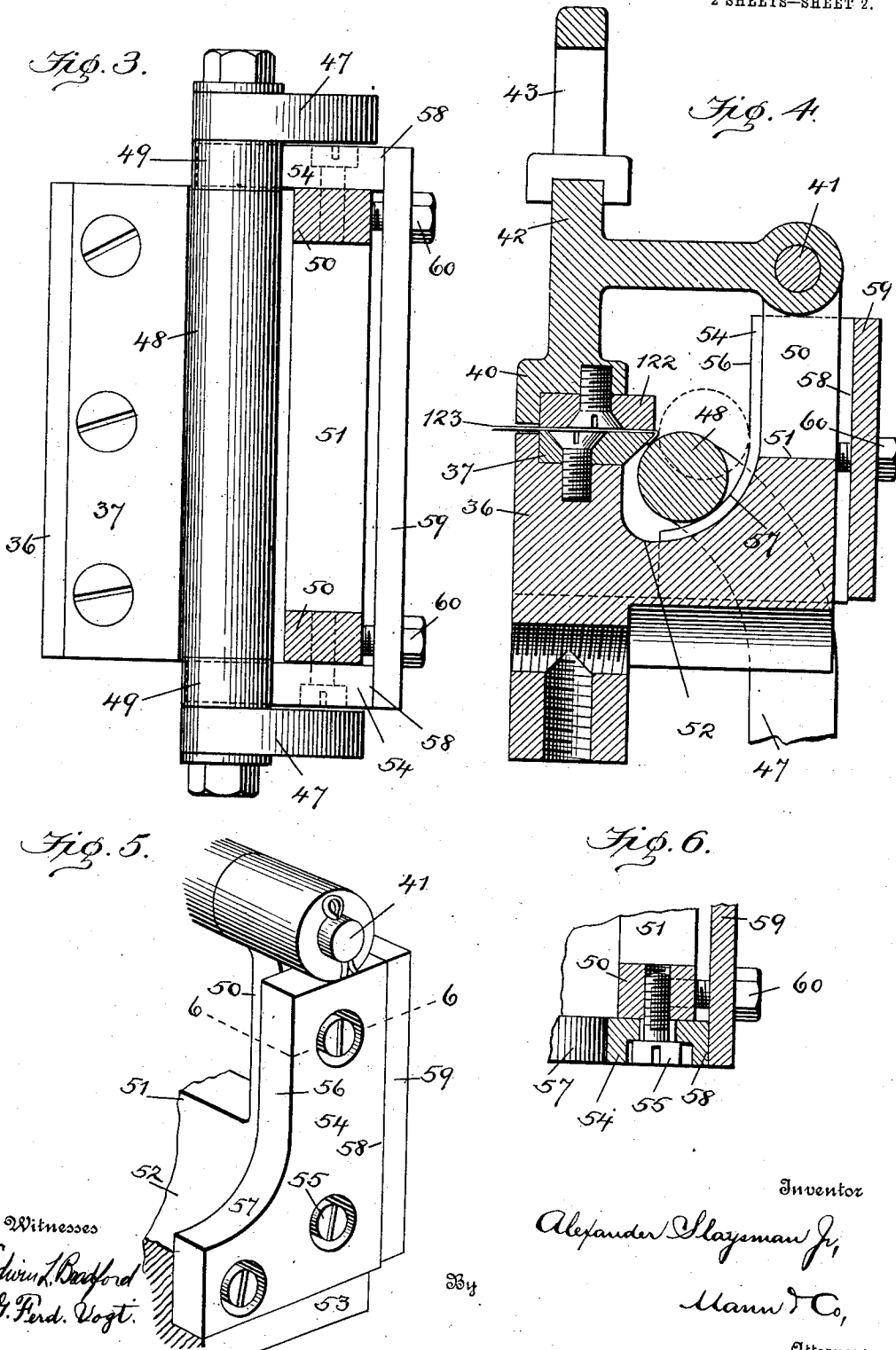
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UNITED STATES PATENT OFFICE.

ALEXANDER SLAYSMAN, JR., OF BALTIMORE, MARYLAND.

MACHINE FOR EDGING SHEET-METAL BLANKS.

No. 826,807.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed April 21, 1906. Serial No. 312,970.

To all whom it may concern:

Be it known that I, ALEXANDER SLAYSMAN, Jr., a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Machines for Edging Sheet-Metal Blanks, of which the following is a specification.

This invention relates to machines for edging sheet-metal can-bodies.

The invention is particularly designed as an improvement on the edging mechanism shown and described in Letters Patent No. 799,409, granted to me on the 12th day of September, 1905.

In the operation of these machines the sheet-metal blanks have their edges bent and succeed each other very rapidly, and the constant and rapid movements of the various parts of the mechanism directly employed in performing this bending operation subjects the parts to wear, which soon results in changing the dimensions of the bent edges of the sheet metal, making it necessary to renew the worn parts, and it is this objection that my present invention is designed to remove and overcome.

The object of the present invention is to provide an improved bender and improved devices for guiding the bender so that in the operation of bending the edge of the sheet metal the wear on the parts of the bending devices will be reduced to a minimum and also that after the amount of allowable wear has taken place the guiding devices may be readily adjusted to compensate therefor.

In order to accomplish the objects desired, I provide a construction of bender and guides by means of which the working face of the bender in its movements will be maintained free of contact with everything except the projecting edge of the sheet metal that is to be bent, and the guiding of the bender will be effected through devices which may be adjusted when worn and when worn beyond the range of adjustment may be readily removed.

As the present invention relates entirely to improvements in the parts which effect the flanging or edging of the sheet metal, it is deemed sufficient to illustrate and describe the improved parts and only those parts of the machine of my said prior patent which are in direct operative connection therewith.

The accompanying drawings illustrate the invention, in which—

Figure 1 shows a front elevation of a portion of the machine. Fig. 2 illustrates an end elevation of the flanging or edging mechanism as seen from the left-hand side of Fig. 1. Fig. 3 is a top view of one anvil, the bending-roller, the two guide-plates, and the plate which adjusts the said guide-plates. Fig. 4 is a vertical section through the anvil, the clamp which coacts with the anvil, the bending-roller, and shows one of the curved plates which guides the said roller and the plate which serves to adjust the guide-plates. Fig. 5 is a perspective view of one of the curved guide-plates, one of the posts which is connected with the anvil, the joint of the clamp, and the adjusting-plate. Fig. 6 is a horizontal section through line 6 6 of Fig. 5.

Referring to the drawings by numerals, 4 designates the sides of a frame extending vertically.

As in my former patent, the machine is provided with a bed 27, which at its center supports a bed-block 25. Two anvils 36, one at each side of the bed-block 25, have their top surfaces in the same horizontal plane with the bed-block. Each anvil has on its top face a steel plate 37. One of these plates has a square edge which projects laterally, and the other plate has a beveled edge which projects laterally. This beveled edge on the anvil-plate constitutes one of the formers over which the edge of the sheet metal is to be bent. Two upright posts 50 have their bases integrally connected with the base of each anvil 36. (See Figs. 3, 4, and 5.) The two posts 50 are separated or spaced apart by a bar 51, which is integral, and the upper surface of the connecting-base 52 is concaved. Each side of the connecting-base 52 has a horizontal flange 53, and two guide-plates 54 are employed to cooperate with each anvil. One of these guide-plates is at each side of the connecting-base 52, and the lower edge of each guide-plate 54 rests upon said flange 53, and the side of the guide-plate is in contact with one of the upright posts 50, to which it is adjustably secured by means of set-screws 55. The working edge or guiding edge of the plate 54 has a straight portion and a curved portion. The opposite straight edge 58 of the guide-plate has position beyond the outer vertical side of the up-

right post 50. The heads of the set-screws 55 are countersunk in the guide-plate 54, and the holes in the plate 54, which receive the set-screws 55, are larger than the set-screws (see Fig. 6) in order that when the guiding edge of the plate 54 becomes worn to permit of loosening the set-screws and adjusting or sliding the guide-plate on the flange 53. As already stated, the two guide-plates 54 are at opposite sides of the base 52, and each of the two guide-plates has position in vertical planes beyond or outside of the ends of the "former" over which the edge of the sheet metal is to be bent. An adjusting-plate 59 extends crosswise of the two upright posts 50, and the two ends of this plate bear, respectively, on the straight edges 58 of the two guide-plates 54. Set-screws 60 pass freely through the plate 59 and screw into the two posts 50. When the working edges 56 57 of the guide-plates become worn and it is desired to adjust the guide-plates 54 to compensate for such wear, the set-screws 55 and 60 may be adjusted to press the plate 59 against the two guide-plates 54 and force them forward and then retain them.

A clamp device (shown in my prior patent) coacts with each anvil for the purpose of clamping the blank of sheet metal 123 while the ends of the blank are being bent. This clamp will be described presently. A presser-foot 23, also shown in my said prior patent, serves to hold the blank at its center down on the bed-block 25. The foot 23 is on the lower end of the vertical stem 13, which has an up-and-down movement. The stem carries the head 19, which has two horizontal arms 20, which operate to open and close the clamp devices.

The clamp device comprises a hinged or pivoted foot 40, having a steel-bottom shoe 122, which coacts with the steel plate 37 on the anvil. The blank of sheet metal 123 is to be clamped between the plate 37 and shoe 122. One of the shoes 122 has a square edge which projects from the foot 40, and the other shoe 122 has a beveled edge which projects laterally and constitutes one of the formers over which the edge of the sheet metal is to be bent. Thus it will be seen that one of the beveled-edge formers is attached to and carried by one of the hinged feet 40, (shown at the left side of Fig. 1,) and the other former is attached to one of the anvils 36. (Shown at the right side of Fig. 1.) The foot 40 is carried on a lateral arm which has an eye hinged or pivoted on a bolt 41, which fits in bearings on top of the two posts 50. A straight arm 42 projects upwardly from each foot 40 and above the lateral arm, and said straight arm has a slot 43, through which passes arm 20, that is on the stem 13. The up-and-down movements of the arms 20 have the effect to raise and lower the clamp-feet 40 by the action of the pivots 41.

A bracket 44 is secured to the bottom side of the horizontal bed 27 and pivotally supports a beam 45. This beam is provided with a plurality of holes 46, arranged on opposite sides of its pivot, and each end of said beam is pivotally connected to two upward-projecting arms 47, which at their upper end sustain a bender, which in the present instance has the form of a roller 48. These benders or rollers 48 extend only the length of the former-plates 37 and 122 and do not contact with the edges of the guide-plates 54.

The device 48 constitutes the bender, because it comes in contact only with the projecting edge of the sheet-metal blank 123 that is to be bent. This bender forces said projecting edge of the sheet metal over the beveled edge of the former, and this constitutes the "edging," which is the result desired. It will be noted that the bender 48 at the left-hand side of the machine bends the edge of the sheet metal upward, while the bender 48 at the right-hand side bends the edge of the sheet metal downward. The bender 48 is made of machinery-steel, as best suited for the special service it has to do. It is supported at each end by one of the prongs of the operating-arm 47; but a circular device or narrow roller 49 is interposed between each end of the bender and the said prong of the operating-arm. The roller 49 may be made of tool-steel, which is a character of metal suited for the function devolved on these rollers. The two narrow rollers 49 therefore alone contact with the edges of the two guide-plates 54, while they travel up and down, so as to guide the bender; but the latter never contacts with the guide-plates or anything else except the edge of the sheet metal that is being bent. This construction permits of high-speed operation and insures accuracy in bending the edges of the sheet metal and also minimizes wear on the machine parts.

A rod 53 leads from the rocking beam 45 to suitable mechanism which imparts motion to said beam. This mechanism is fully shown and described in my said prior patent.

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

1. In a machine for flanging sheet metal the combination with means for holding the sheet of metal with the edge that is to be bent projecting; a bender movable across the projecting edge of the sheet; spaced-apart guides at opposite ends of the bender; and means for adjusting the position of the guides to compensate for wear.

2. In a machine for flanging sheet metal, the combination with means for clamping the sheet with the edge projecting, of a bender reciprocating adjacent the projecting edge of the sheet; two guides for the bender; means carried at the ends of the bender and con-

tacting with said two guides, and means for adjusting the position of the guides to compensate for wear.

3. In a machine for edging sheet-metal
5 blanks the combination with means for holding the sheet; two spaced-apart guides; a bender; a two-pronged operating-arm one prong supporting each end of the bender, and means mounted axially with respect to the
10 bender and interposed between the ends of the latter and the said arm-prongs and contacting with the guides.

4. In a machine for flanging sheet metal, the combination with a clamp for holding the
15 sheet and one part of the clamp serving as a former over which the edge of the sheet is to be bent, of two curved guides having position beyond the opposite ends of the clamp; a reciprocating bender; means carried at the
20 ends of the bender and beyond the ends of the clamp and former for contacting with said two curved guides, and means whereby the guides may be moved to compensate for wear.

25 5. In a machine for flanging sheet metal, the combination with a former around which the edge of the sheet is to be bent, of two guides each having a surface which curves

toward the former; a movable bender; means carried with the bender for contacting with
30 the curved surfaces of the two guides; and means for adjusting the positions of the said guides with respect to the former.

6. In a machine for flanging sheet metal, the combination with a former around which
35 the edge of the sheet is to be bent, of two curved spaced-apart guides adjustably held beyond the opposite ends of the said former; a reciprocating bender; and an adjusting-plate bearing on said two guides. 40

7. In a machine for flanging sheet metal, the combination with a base, of a former sustained by the base and around which the
45 edge of the sheet is to be bent; flanges at opposite sides of the base; two spaced-apart guide-plates each resting on one of said base-flanges; means for adjustably securing said guide-plates on said flanges, and a reciprocating bender guided by said adjustably-secured plates. 50

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

ALEXANDER SLAYSMAN, JR.

Witnesses:

CHARLES B. MANN, Jr.,
JOHN W. HEWES.