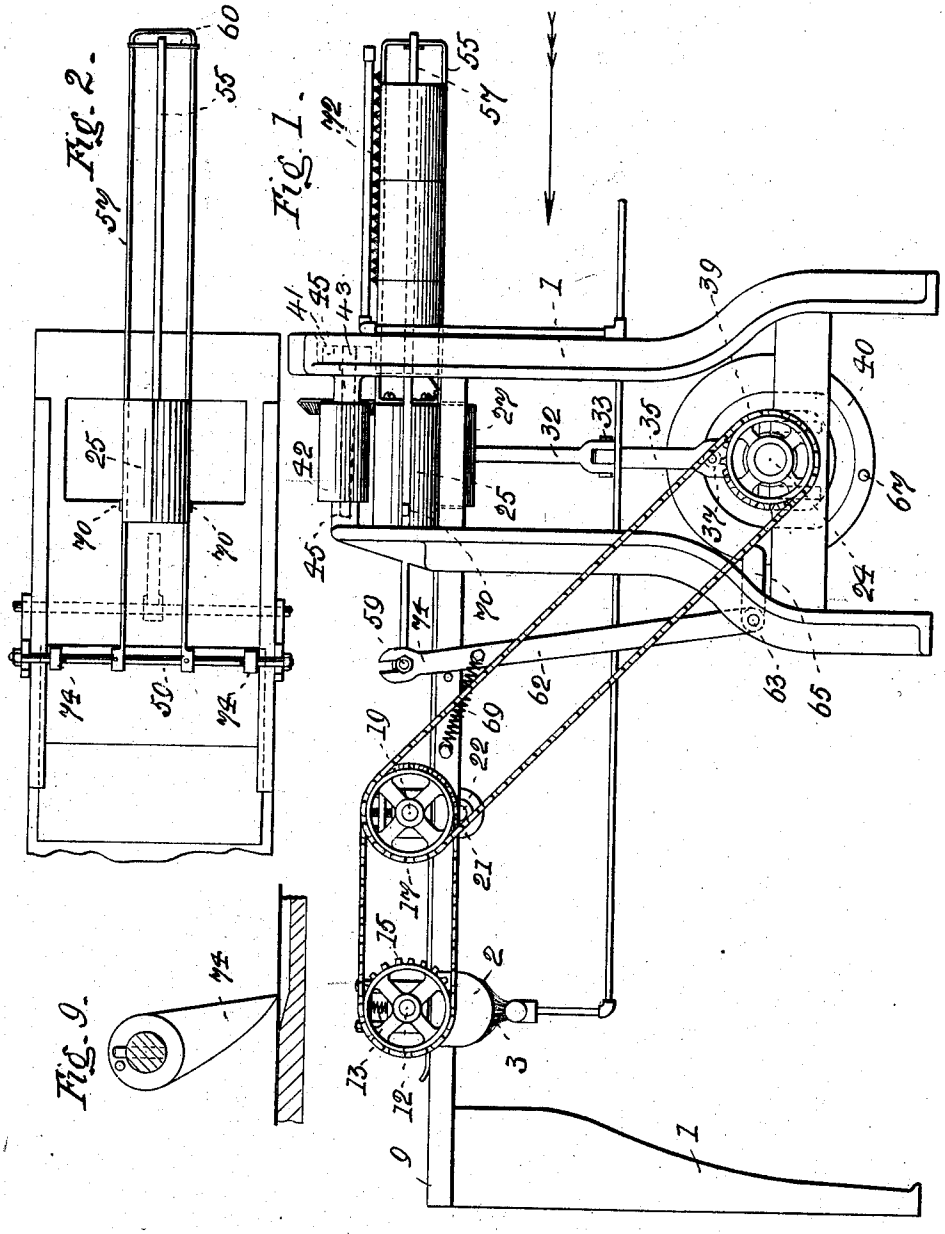
No. 757,238. PATENTED APR. 12, 1904.

A. SLAYSMAN.

MACHINE FOR PRODUCING BODY SEAMS IN SHEET METAL CANS.

APPLICATION FILED DEC. 11, 1902.

NO MODEL. 4 SHEETS—SHEET 1.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 4 SHEETS—SHEET 2.

Fig. 3.

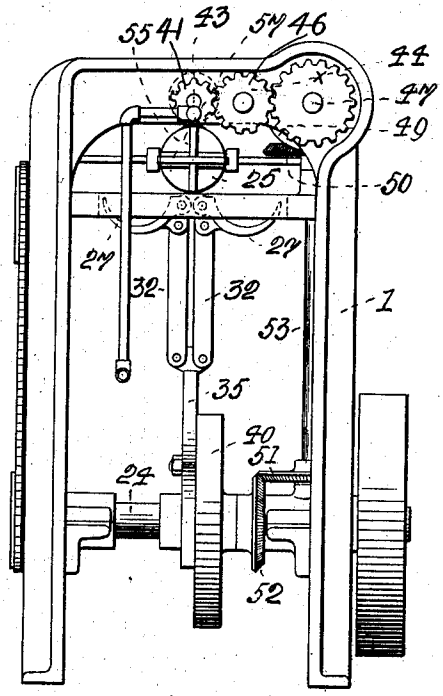
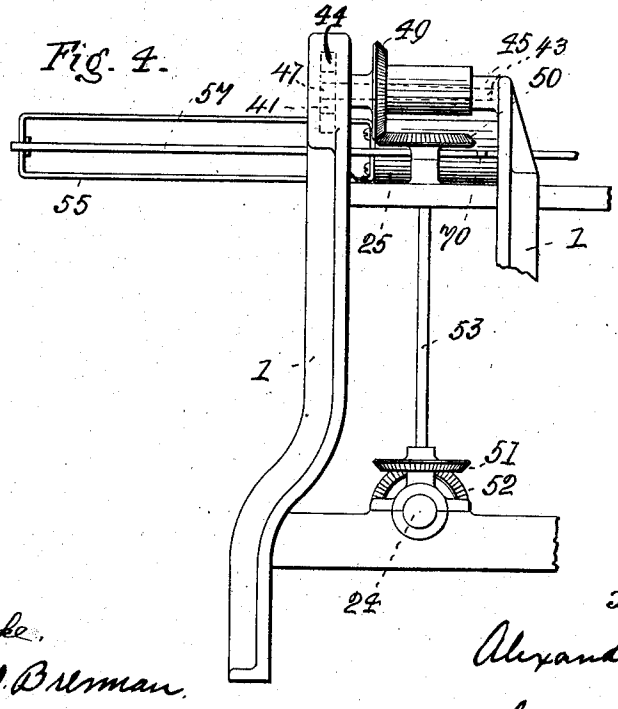


Fig. 4.



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NO MODEL. 4 SHEETS—SHEET 3.

Fig. 5.

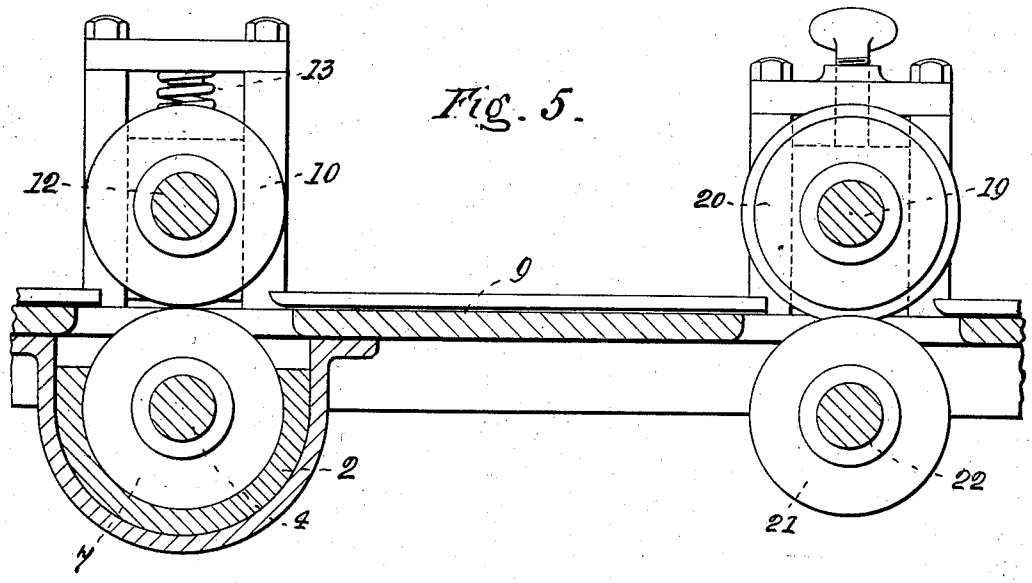


Fig. 6.

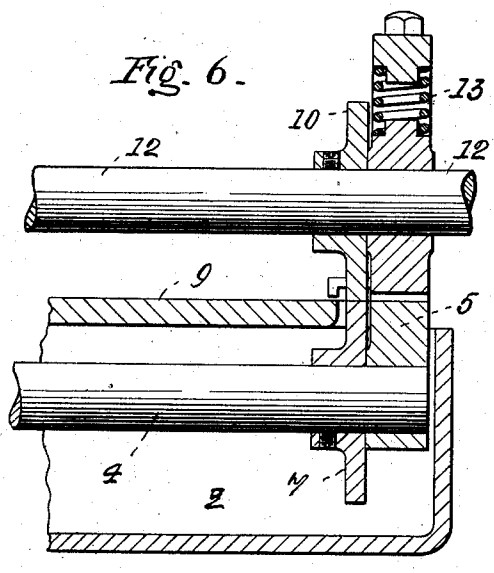
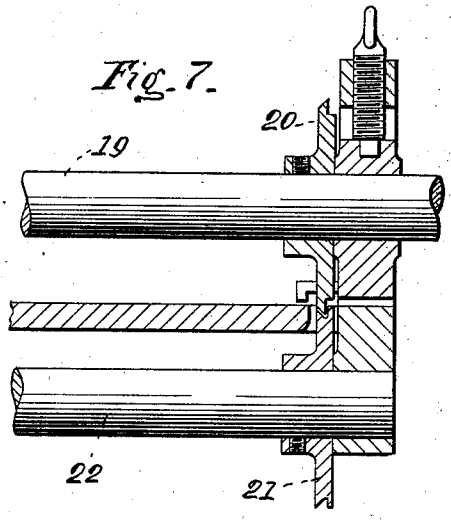


Fig. 7.



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NO MODEL. 4 SHEETS—SHEET 4.

Fig. 8.

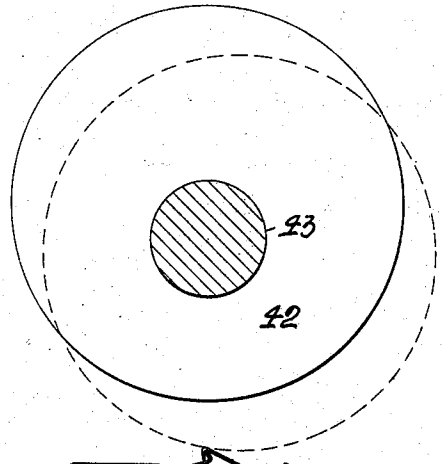
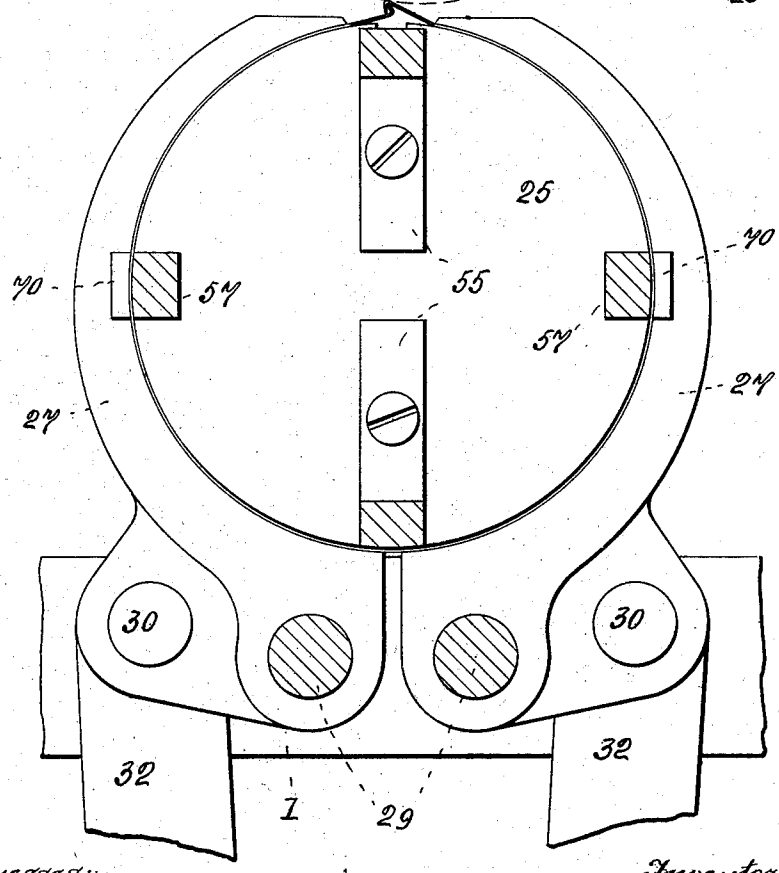


Fig. 10.





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No. 757,238. Patented April 12, 1904.

UNITED STATES PATENT OFFICE.

ALEXANDER SLAYSMAN, OF BALTIMORE, MARYLAND.

MACHINE FOR PRODUCING BODY-SEAMS IN SHEET-METAL CANS.

SPECIFICATION forming part of Letters Patent No. 757,238, dated April 12, 1904.

Application filed December 11, 1902. Serial No. 134,754. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER SLAYSMAN, of the city of Baltimore and State of Maryland, have invented certain Improvements in Machines for Producing Body-Seams in Sheet-Metal Cans, of which the following is a specification.

The object of this invention is the construction of a machine whereby a sheet of tin-plate at each side thereof is provided with two tinned or soldered surfaces of a circumscribed width extending inwardly from the lateral edges of the said plate, then crimped at the tinned edges to form the members of an unfinished locked seam, then bent around a mandrel and the seam members locked, and then the locked seam heated to liquefy the solder thereon and thereby complete the seam, as will hereinafter fully appear.

In the description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is an exterior side view of the improved machine, and Fig. 2 a top view of certain parts of the same. Fig. 3 is a view of Fig. 1 looking in the direction indicated by the arrow in that figure. Fig. 4 is a reverse side view of certain parts of Fig. 1. Figs. 5 to 10, inclusive, are enlarged details of the machine.

Referring now to the drawings, 1 is the frame of the machine, and 2 a well containing solder, which is retained in a molten condition by means of a flame 3.

4 is a shaft (shown only in Figs. 5 and 6) adapted to rotate in journals 5 within the solder-well 2, carrying a roll 7 at each end. For want of space only one roll is shown in Fig. 6. The distance between the outer faces of these rolls is about equal to the width of the sheet the edges of which are to be tinned or coated with solder, and the upper limb of the rolls is in alinement with the top of the table 9. (See Figs. 5 and 6.)

10 10 are rolls similar to the one, 7, tight on the driving-shaft 12, and the two sets of rolls are held yieldingly together by means of springs 13, as shown in Figs. 5 and 6. The edges of the rolls 7 and 10 are tinned, so that the melted solder in which the rolls 7 rotate will adhere to them and be applied to a sheet of metal when passed between them.

The shaft 12 is provided with a sprocket-wheel 15, which is driven by means of a chain from a similar sprocket-wheel 17 on a shaft 19. (See Fig. 1.) The shaft 19 carries at each end a crimping-roll 20, the edge of which engages with the edge of another roll 21, situated below it and on a shaft 22. (See Fig. 7.) These rolls serve to crimp the edges of the sheet, which when brought together, as shown in Fig. 8, form an open joint or seam to be subsequently closed, locked, and flattened, as shown in Fig. 10, by means of eccentric rollers hereinafter described. The shaft 19 is driven by means of a sprocket-wheel and chain from a sprocket-wheel on the main driving-shaft 24. (See Fig. 1.)

From the foregoing description it will be understood that when a sheet of metal is passed between both sets of rolls it will first have its lateral edges on both sides of the sheet tinned or provided with a coating of solder and then have the solder-coated edges crimped to form an elementary lock-joint should the said edges be brought together.

25 is a stationary mandrel supported in any suitable manner from the frame 1, around which the sheet after its edges are tinned and crimped, as hereinbefore described, is bent by means of the clamps 27. (See Figs. 3 and 8.) These clamps are pivoted at 29 to the frame 1 and fitted with pins 30, which are connected, by means of links 32, to similar pins 33 on a yoke 35, which straddles the main driving-shaft 24. This yoke carries a roller 37, which rests within a cam-slot 39 in a disk 40, keyed to the driving-shaft 24, and the cam mechanism is so constructed that the clamps rapidly close around the mandrel and are then opened and retained in an open condition for a considerable time during one complete rotation of the disk.

42 is an eccentric roller tight on a shaft 43, (shown in dotted lines in Figs. 1 and 4,) adapted to rotate in bearings 45. (See particularly Fig. 1, in which both bearings are shown.) This shaft (see Figs. 3 and 4) is driven by the meshed spur-gears 44, 46, and 41 from a stud

47, which is rotated from the main driving-shaft 24 through the medium of the beveled gear-wheels 49, 50, 51, and 52, the ones 50 and 51 being on the upright shaft 53 and the one 49 on the stud 47. The gearing described is so arranged that after a sheet is bent around the stationary mandrel 25 by means of the clamps 27 the eccentric roller flattens the joint, (see Figs. 8 and 10,) the latter showing the joint after the flattening operation is completed.

55 is a stirrup bolted to and extending from the rear end of the fixed mandrel 25, and 57 a similar stirrup, with its open end fastened to a cross-bar 59. The said side bars of the stirrups 57 slide in longitudinal grooves in the mandrel 25, and the stirrup is provided with a cross-head 60, which is guided by the fixed or stationary stirrup. (See particularly Fig. 2.) The cross-bar 59 rests in the forked ends of a pair of arms 62, tight on a shaft 63, carrying a toe 65, which is in the path of a pin 67, projecting from the side of the cam-disk 40. The arms 62 are yieldingly held back by the spring 69 and are vibrated in a forward direction by the cam-disk 40 through the medium of the pin 67 and in a backward direction by the spring 69.

70 70 are projections on the movable stirrup-bars 57, which project beyond the circumference of the mandrel 25 and which in the operation of the machine serve to push the can-bodies after the seam thereof is locked from the mandrel onto the stationary stirrup 55, when the locked seam is brought under a series of gas-jets 72, which melt the solder inclosed in the seam, and the adjoining surfaces of the members of the seam are thereby soldered together, making a tight joint.

74 74 are spring-held pawls on the cross-bar 59 to push the sheets between the mandrel and the clamps 27. The pawls are operative devices for the purpose in view; but others may be employed in place of them, and I do not, therefore, confine myself to their use.

In the operation of the machine the sheets are fed at intervals between the soldering-rolls and by them carried to the crimping-rolls, which in turn deliver them to a position on the table where they may be caught by the pawls 74. At each vibration of the arms 62 a sheet is delivered to the clamps 27 and by them formed around the mandrel 25 into a can-body and held by them until the seam is flattened. Upon the reopening of the clamps the can-body is forced by the projections 70 of the movable stirrup 57 to the stationary stirrup 55, over which are situated the gas-jets 72, which by melting the solder in the locked joint completes the seam.

I claim as my invention—

1. In a machine for producing body-seams in sheet-metal cans devices to coat with solder the two lateral edges of a sheet of metal, other devices to crimp the said solder-coated edges of the sheet, a stationary or fixed mandrel, with means to bend the sheet around the mandrel and interlock its crimped edges thereon, combined with an eccentric roll arranged over the mandrel, mechanism to rotate the said eccentric roll and bring its surface into contact with the locked edges of the sheet and thereby flatten the same or form a seam, and a heating mechanism to melt the solder in the flattened seam, the various operations being effected in sequence as specified.

2. In a machine for producing body-seams in sheet-metal cans, devices to crimp the lateral edges of a sheet of metal, a mandrel, and means to bend the sheet around the mandrel and interlock its crimped edges thereon, combined with an eccentric roll arranged over the mandrel, and mechanism to rotate the said eccentric roll and thereby bring its surface into contact with the interlocked edges of the sheet upon the mandrel and thereby produce a flattened seam, substantially as specified.

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