

June 8, 1937.

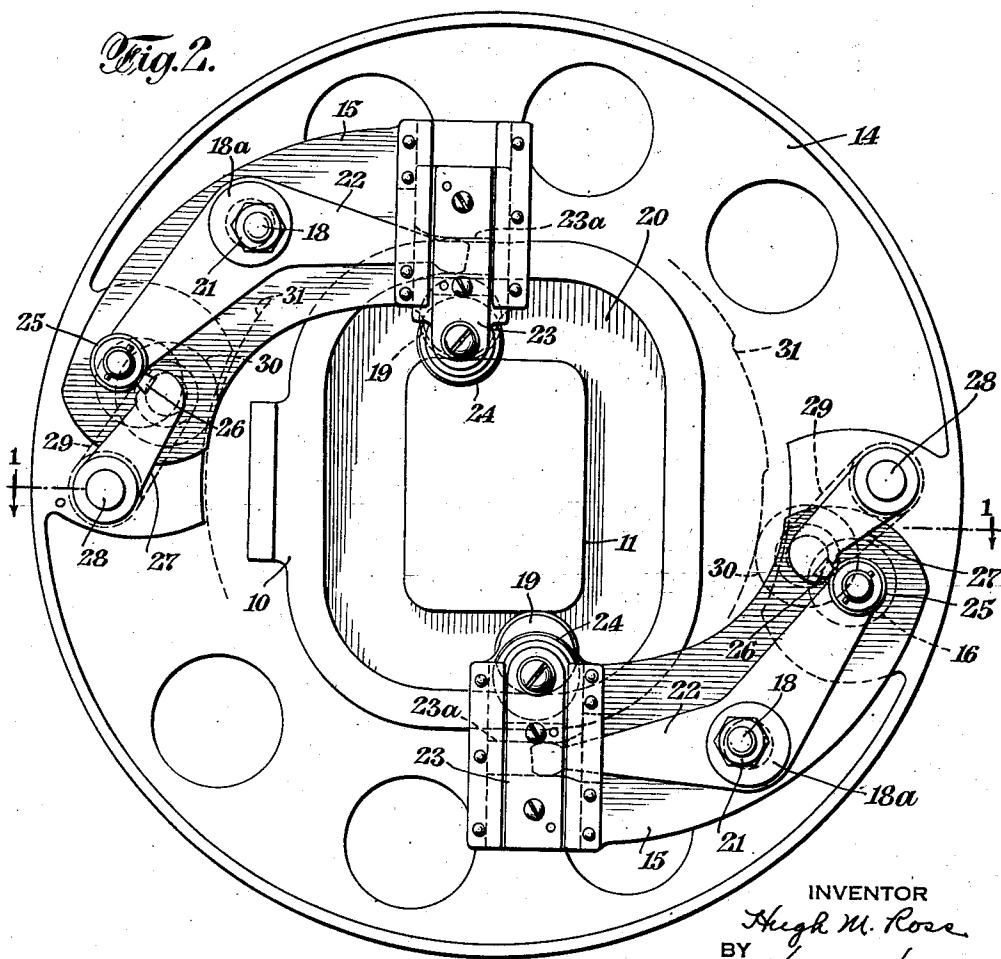
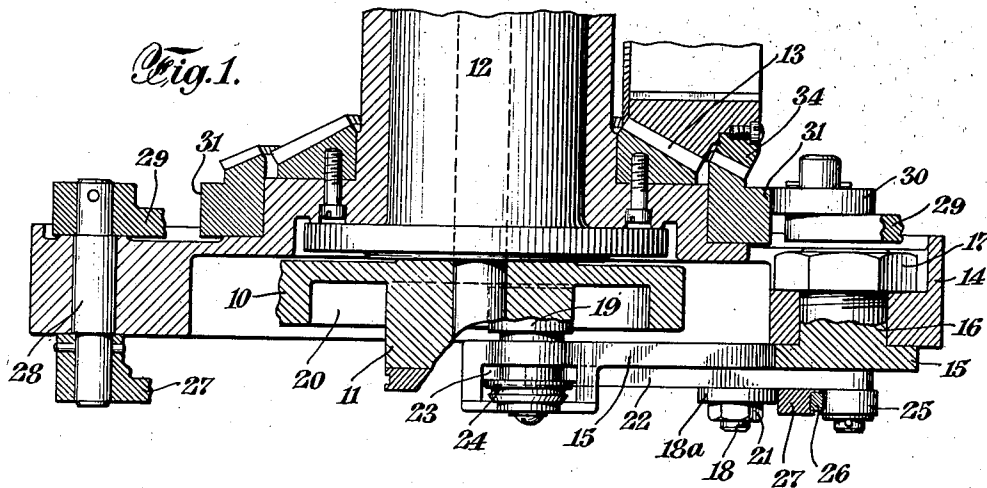
H. M. ROSS

2,083,401

SEAMING MACHINE

Filed Dec. 7, 1935

2 Sheets-Sheet 1



INVENTOR
Hugh M. Ross
BY *Kenneth Kenyon*
ATTORNEYS

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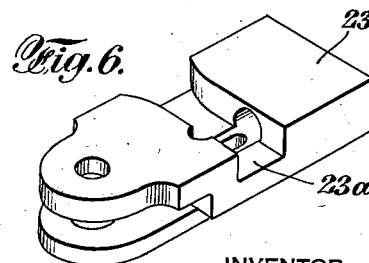
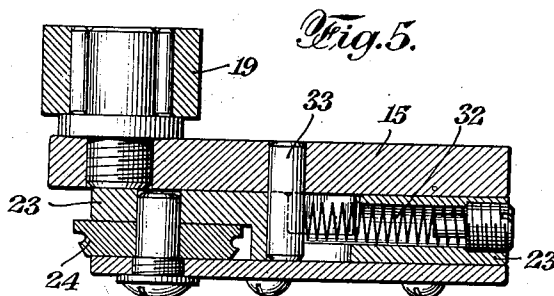
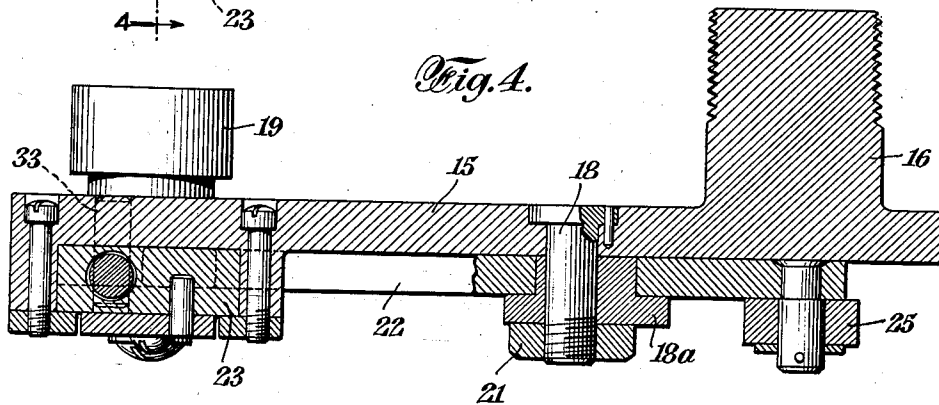
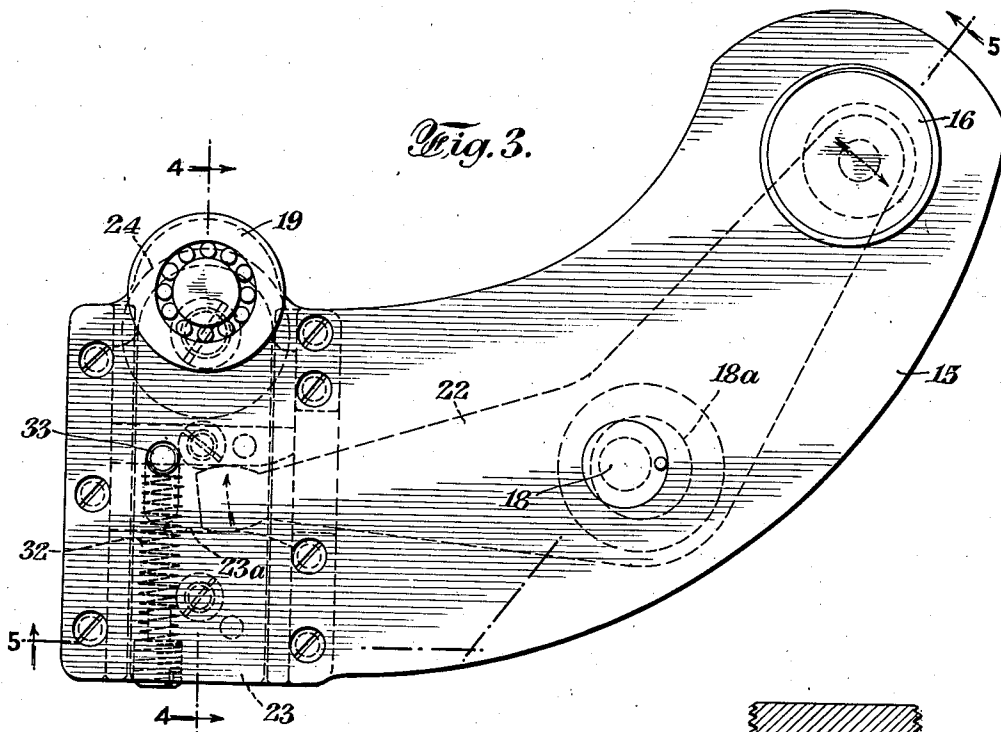
H. M. ROSS

2,083,401

SEAMING MACHINE

Filed Dec. 7, 1935

2 Sheets-Sheet 2



INVENTOR
Hugh M. Ross
BY
Kerwin Kerwin
ATTORNEYS

UNITED STATES PATENT OFFICE

2,083,401

SEAMING MACHINE

Hugh M. Ross, Woodhaven, N. Y.

Application December 7, 1935, Serial No. 53,282

2 Claims. (Cl. 113—24)

This invention relates to seaming machines and more especially to machines for seaming the ends or heads of non-circular cans to the sides or bodies thereof. In previous seaming machines of this type, it has often been the case that in the seaming of cans long and narrow in horizontal cross-section, the seam was not tightly closed at certain points.

An object of this invention is a seaming machine which is effective to produce a tight seam and is provided with easily operated means for adjusting the seaming mechanism without interfering with the accuracy of operation thereof.

Other objects, novel features and advantages of this invention will become apparent from the following specification and accompanying drawings, wherein:

Fig. 1 is a vertical section through a seaming machine embodying the invention, the section being taken substantially on the line 1—1 of Fig. 2;

Fig. 2 is a bottom plan view of Fig. 1;

Fig. 3 is a plan view of the support for the seaming tool;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is a section on the line 5—5 of Fig. 3; and

Fig. 6 is a perspective view of the seaming tool carrier.

The can or other article to be operated upon is supported upon a suitable table or base (not shown). The head of the machine includes a member 10 which has a chuck portion 11 to hold the can body and end assembly while being operated upon. The member 10 is carried by a stud 12 forming a fixed or stationary part of the machine. Rotatably mounted upon the member 10 and stud 12 is a disk or head member 14 which is driven by a ring and bevel gear combination 13. At spaced points around the member 14 are arranged sets of devices for controlling the seaming tools and as such devices are identical except for the tools per se, only one of these devices will be described. A lever 15 is arranged on the underside of the rotatable member 14 and is pivotally supported from that member by the vertical stud 16 which passes into the member 14 and is secured in place by a nut 17. The free end of the lever 15 carries a roller 19 which runs in a cam groove 20 in the bottom of the member 10. This groove is made to conform to the outline of the can so that when the disk or movable head member 14 rotates about the stud 12; the roller follows a path coinciding with the outline of the cam. As shown, the outline is rectangu-

lar, the cam groove being coaxial with the member 14. A stud 18 extends through the lever 15 and on the stud 18 is arranged an eccentric bushing 18a which is held in place by a nut 21. A second lever 22 is rotatably supported by the bushing 18a. On the under face of the lever 15 adjacent the roller 19 is slidably mounted a carrier 23 in one end of which is rotatably supported the seaming tool 24 which is shown as in the form of a narrow roller rotatable about a vertical axis. The carrier 23 is mounted for rectilinear movement in such manner that at one end of its stroke the seaming tool 24 is in axial alinement with the roller 19. In the carrier 23 is provided a transverse slot 23a in which is received one end of the lever 22 by which reciprocatory movement is imparted to the carrier 23.

The other end of the lever 22 carries a thrust roller 25 which engages a bearing block 26 carried by the lower arm 27 of a lever which has a vertical pivot portion 28 extending through the rotatable head member 14 and which has a lever arm 29 secured to its upper end. The arm 29 carries a follower roller 30, which is arranged to coast with a cam 31.

The various tools 24 are designed and arranged to effect the desired shaping of the metal to form the seam between the head and body. For example, when two of these tools are used, the first may be employed to effect the first stage of the seaming operation and the second to perform the final seaming operation. During the rotation of the head member 14, the seaming tools 24, together with the carriers supporting the same take their general direction of movement from the lever 15, whereby the tools 24 are caused to move in approximate coincidence with the contour of the article to be seamed. The actuation of the tools whereby they are caused to change the shape of the metal is imparted thereto by the action of the cam 31 on lever 29 and 27, whereby the levers 22 are shifted upon their pivots so as to move the carriers 23 and seaming tools 24 toward the article being operated upon. The carriers and seaming tools are returned to their initial position after a seaming operation has been completed by the springs 32 which are mounted in the carrier and bear against studs 33 supported by the levers 15. The cam 31 is provided with a gear 34 by which it is driven at a different speed than the head 14. The relative rotation of the cam and head brings out portions of the cam 31 into engagement with the rollers 29, thereby effecting step by step move-

ment of the seaming tool during each step of the seaming operation.

By reason of the provision of a seaming tool carrier mounted for rectilinear movement, it is 5 apparent that as the tool 24 is moved inwardly by movement of the lever 22 about its axis during the formation of the same, the tool moves substantially in a straight line extending from the axis of the tool to the vertical axis of the can or 10 other article operated upon. This results in the formation of a very tight seam. Adjustment of the initial position of the seaming tool 24 is effected by means of the eccentric bushing 18a. This bushing may be rotated about the stud 18 15 to vary the location of the pivotal point of the lever 22 and thus move inwardly or outwardly the end of the lever which engages the carrier 23. The adjustment of the tool can be made only along a straight line as the carrier 23 is capable 20 only of rectilinear movement.

I claim:

1. In a seaming machine, a rotatable head, a lever pivotally mounted on said head, a guideway on said lever, a carrier mounted in said guideway 25 for rectilinear movement, a seaming tool supported by said carrier, means for swinging said

lever to guide said seaming tool in approximate coincidence with the contour of said article, a second lever pivoted to said first lever for pivotal movement about an axis intermediate its ends 5 and having one end engaging a portion of said carrier for causing rectilinear movement thereof upon pivotal movement of said second lever, and means for actuating said second lever.

2. In a seaming machine, a rotatable head, a lever pivotally mounted on said head, a guideway 10 on said lever, a carrier mounted in said guideway for rectilinear movement, a seaming tool supported by said carrier, means for swinging said lever to guide said seaming tool in approximate coincidence with the contour of said article, a 15 second lever pivoted to said first lever for pivotal movement about an axis intermediate its ends and having one end engaging a portion of said carrier for causing rectilinear movement thereof upon pivotal movement of said second lever, and means 20 for actuating said second lever comprising a cam and a third lever having one end engaging said cam and the other end engaging the remaining end of said second lever.

HUGH M. ROSS. 25