No. 813,034. PATENTED FEB. 20, 1906.

O. S. BEYER.

SEAMING MACHINE.

APPLICATION FILED MAY 6, 1904.

2 SHEETS—SHEET 1.

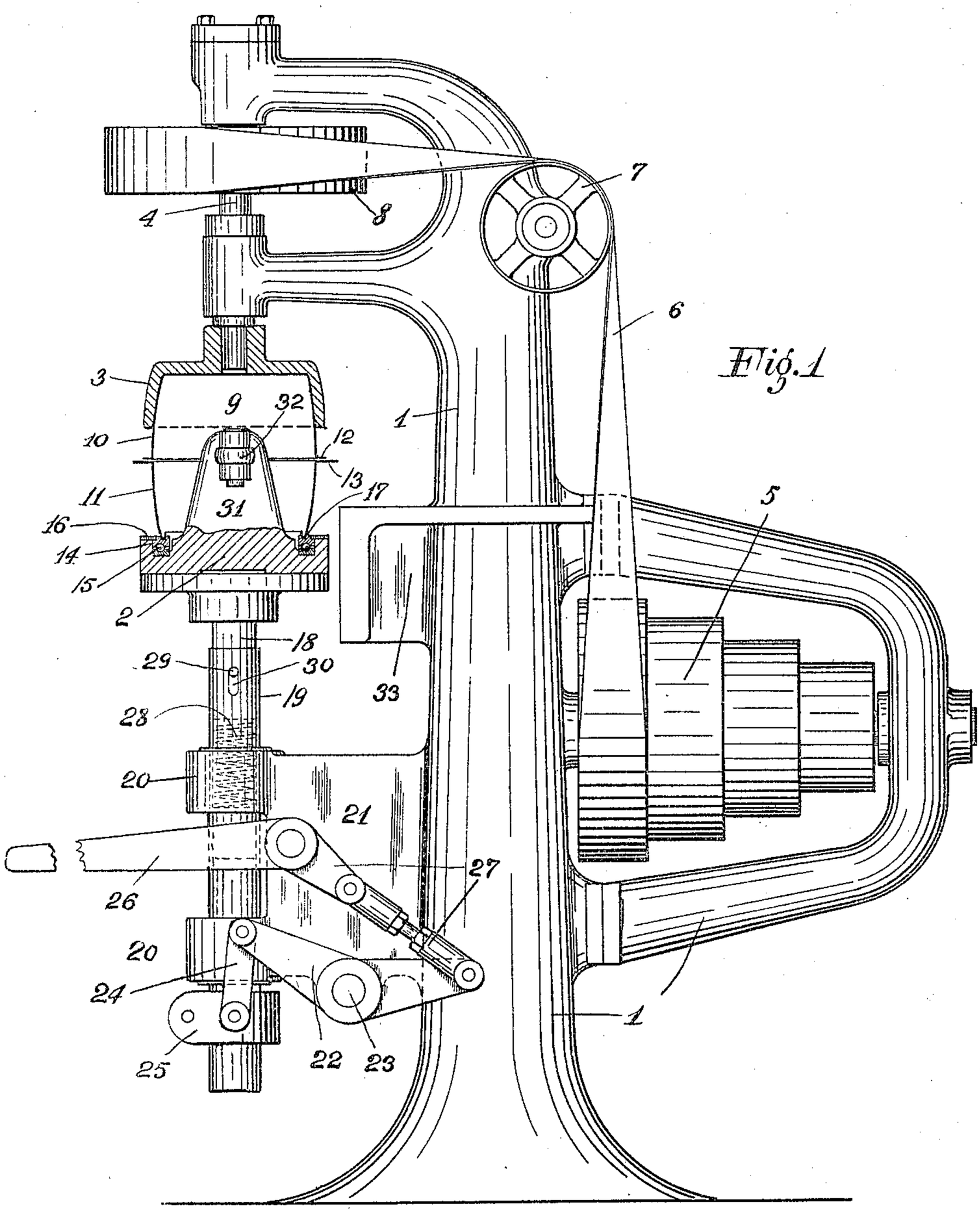

Fig. 1

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2 SHEETS—SHEET 2.

Fig. 2

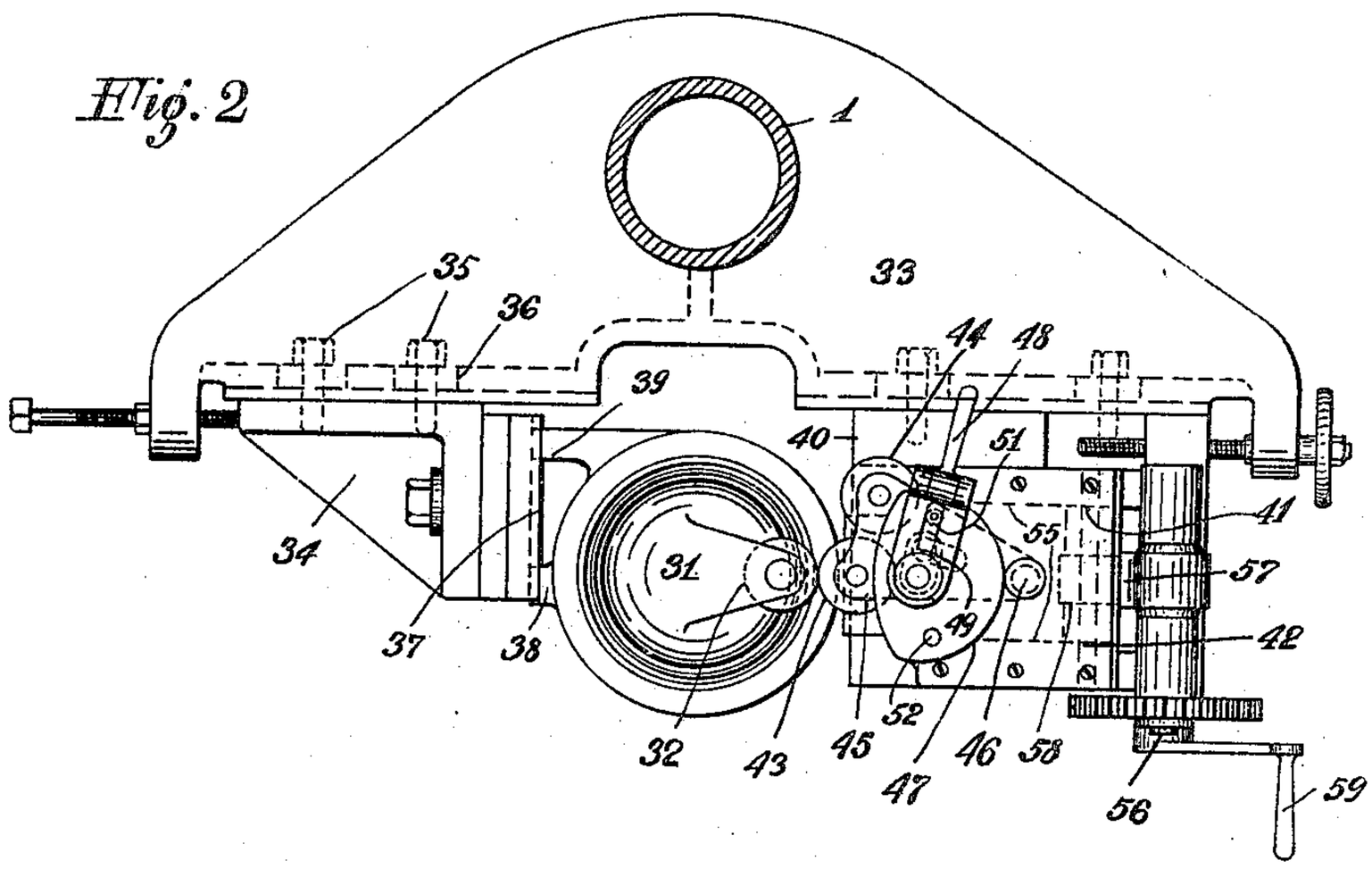
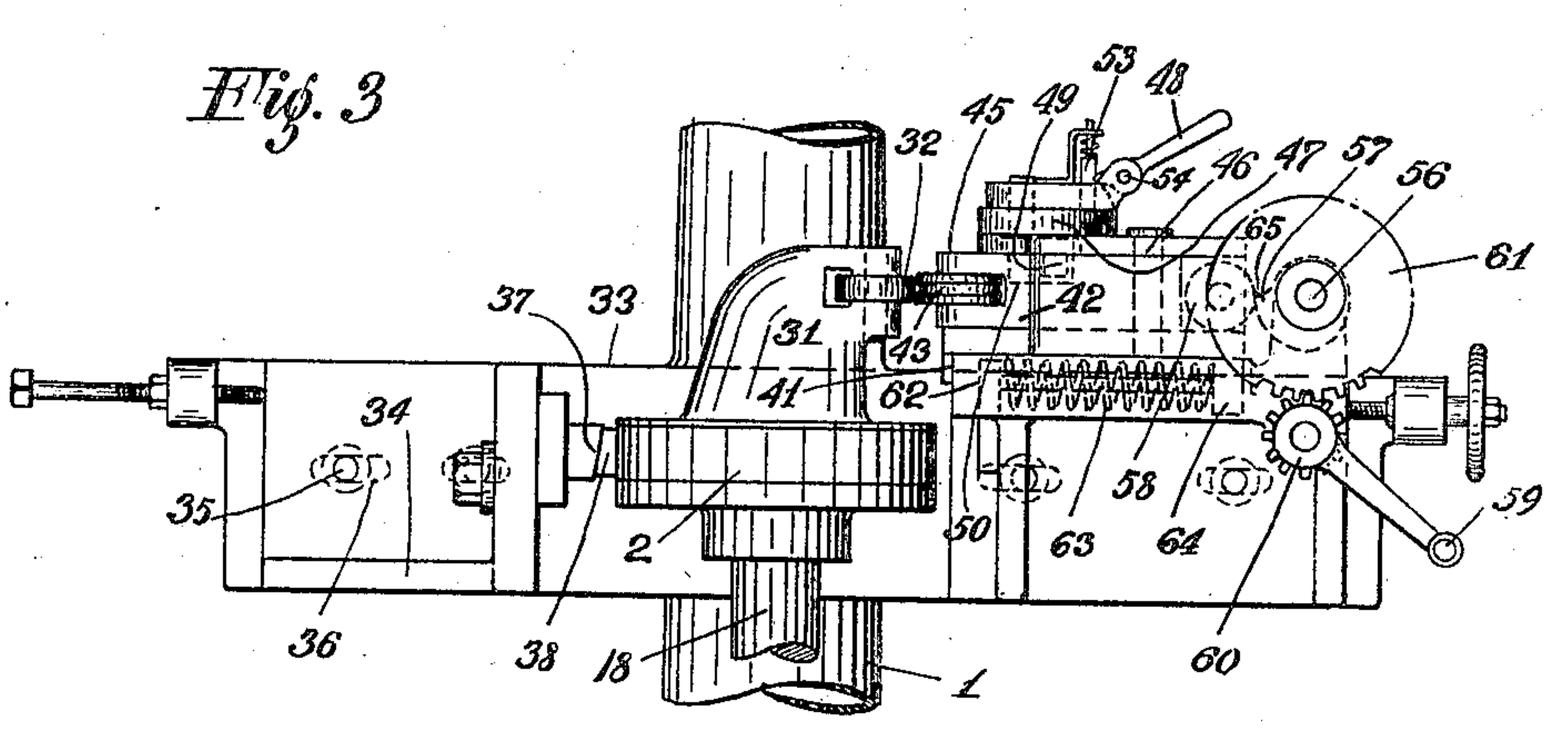


Fig. 3



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UNITED STATES PATENT OFFICE.

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SEAMING-MACHINE.

No. 813,034. Specification of Letters Patent. Patented Feb. 20, 1906.

Application filed May 6, 1904. Serial No. 206,618.

To all whom it may concern:

Be it known that I, OTTO S. BEYER, a citizen of the United States of America, and a resident of East Rutherford, county of Bergen, and State of New Jersey, have invented certain new and useful Improvements in Seaming-Machines, of which the following is a specification.

My invention relates generally to seaming-machines, and has more particular reference to improved means for bringing the seaming-rolls into and out of seaming position in a hand-operated machine, to means for relieving the work-holder from the severe strain arising in machines for seaming cans or containing vessels of heavy stock, and to improved means for clamping the can so as to cause it to rotate.

The invention consists in the combination of parts and features of construction, as will more fully hereinafter be described.

In the drawings I have embodied my invention in a suitable form; but changes of structure may of course be made and parts altered or omitted without departing from my invention.

In the said drawings, Figure 1 is a general view of a seaming-machine embodying my invention. Fig. 2 is a plan view of the work-holder, seaming members, and adjacent parts, Fig. 3 is a front view of the parts shown in Fig. 2.

Similar characters of reference indicate corresponding parts in the different views.

1 is a framework of suitable construction properly mounting the several parts comprising the machine.

The containing vessel to be seamed is rotated continuously and is placed on the work-supporter 2, provided with suitable means for moving the vessel or can against the clamp 3, carried by the vertical shaft 4. Motion is imparted to this shaft 4 in any suitable way, as from the cone 5, belt 6, idler 7, and pulley 8. The can 9 in the present instance is made of two parts 10 and 11, whose contiguous flanges 12 and 13 are to be seamed to form a complete can.

The work-supporter 2 is constructed in any suitable way and is normally stationary, but is provided with a rotatable ring 14, resting in ball-bearings 15 and held in position by means of the circular plate 16. The rotatable ring 14 is provided with an annular depression 17, in which the lower part 11 of the can to be seamed is placed. The work-holder 2 is carried by the spindle 18, mounted in the sleeve 19, supported by the bearings 20, mounted on the plate 21 of the framework.

Suitable means are provided for raising and lowering the work-holder into and out of contact with the clamp 3, comprising a bell-crank 22, mounted on the stud 23 of the plate 21 and connected to the sleeve 19 by means of the links 24 (one of which only is seen) and collar 25, fast on the said sleeve 19. The said bell-crank 22 is connected to the operating-handle 26 by means of the toggles 27. In the sleeve 19 there is a spring-cushion 28, upon which the spindle 18 rests, so as to allow for any unevenness of the machine during the seaming operation. The spindle 18 is held in position in the sleeve 19 by means of the pin 29, playing in the slot 30.

With the particular style of can herein described it is usual to provide the work-holder with a gooseneck 31, carrying a truck-roller 32, which when the can is placed in position is inside of the said can and in juxtaposition to the seaming-rolls located outside the can. Owing to the fact that with this construction a severe strain falls directly upon this gooseneck and upon the work-supporter, I provide means for relieving this strain and for transferring the thrust of the seaming-rolls to the framework of the machine. To this end there is mounted a bracket 33 on the framework, carrying an angular plate 34, adjustably attached to the said bracket by means of the set-screws 35 and slots 36 at a point opposite to the seaming-rolls and on the other side of the work-holder from the said seaming-rolls. This angular plate has a beveled shoulder 37, adapted to receive the thrust of the abutting shoulders 38 and 39, carried by the stationary work-supporter in apposition to the shoulder 37. The shoulder 38 imparts the direct thrust to the shoulder 37, and hence to the bracket and framework, while the shoulder 39 imparts the torsional thrust due to the rotation of the work. On the other side of the work-holder there is mounted a second angular plate 40, adjustable in a similar way upon the bracket 33 and provided with the ways 41, in which moves the slider 42. The slider 42 carries in the present instance two seaming-rolls 43 and 44, mounted on the segment 45, pivoted at 46 and located inside of the slider

42. Mounted on top of the slider 42 is a stationary portion 47, to which is pivoted the handle 48, carrying the roller 49, engaging in the slot 50 of the segment. By turning the handle 48 either of the two seaming-rolls is brought into operating position with regard to the work. On the stationary portion 47 are two holes 51 and 52, marking the limit of the movement of the handle 48. Moving with the said handle 48 is, further, a latch 53, adapted to spring into either of the said holes when brought into alinement with the same. This latch is lifted by means of the handle 48, the outer part of which is pivoted at 54, so that it has a minor pivotal motion at right angles to its major pivotal motion. The segment 45 is further limited in its motion by the two side walls 55 of the slider 42.

Mounted on the stationary angular plate 40 and in rear of the slider 42 is a shaft 56, provided with a cam 57, engaging with the roller 58 on the slider 42. This shaft 56 is properly geared to the handle 59 through the pinion 60 and spur-gear 61, whereby the rotation of the said handle 60 moves the slider forward into seaming position. Located inside the slider 42 and bearing on the shoulder 62 of the angular plate with one end is the spring 63, whose other end bears against the shoulder 64 of the slider. The cam 57 has a sudden drop, as 65, adjacent to its highest point, so that as soon as the said cam is turned beyond the said highest point with relation to the roller 58 the spring 63 will snap the slider 42 back. Obviously the seaming position of the seaming-roller is reached when the highest point of the cam comes opposite to the roller 58

In practice the can is placed in position on the work-holder and the operating-handle 26 is moved into the position shown in Fig. 1, thereby straightening the toggles 27 and raising the work-supporter so as to clamp the can, thereby causing its rotation. One of the seaming-rolls 43 and 44 is now brought into operating position by manipulating the handle 48. The handle 59 is then turned, causing the cam 57 to move the seaming-roll into seaming position. When the can has rotated a sufficient number of times to properly effect the seaming operation of one roll, the handle 59 is turned an additional distance to bring the sudden drop 65 opposite to the roller 58, thereby allowing the spring to snap the slider carrying the seaming-rolls back. The other seaming-roll is then brought into operating position by manipulating the handle 48 and the operation just described repeated. The operating-handle is then moved back and the can released and removed.

Formerly it has been customary to move the slider carrying the seaming-rolls back and forth by means of a lever thrown in opposite direction to effect the said back-and-forth movement. In that way, however, much time is lost, an objection which is overcome by the simple rotatable cam and spring. Less power is also required to be applied when my device is used.

What I claim is—

1. In a machine of the character described, the combination of a rotating clamp, a vertically-movable work-supporter, bearings for slidably supporting the said work-supporter, a bell-crank, links connecting said bell-crank to the work-supporter, a pivoted operating-lever, and toggles connecting the said operating-lever and bell-crank.

2. In a machine of the character set forth, the combination of a rotating clamp, a work-supporter, a vertically-movable sleeve, bearings slidably supporting said sleeve, a spindle carrying the work-supporter mounted in the sleeve, a spring-cushion in the said sleeve on which the said spindle rests, a bell-crank, links connecting said bell-crank to the sleeve, a pivoted operating-lever, and toggles connecting the said operating-lever and bell-crank.

3. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, seaming members located on one side of the said work-supporter, and means on the opposite side of the said work-supporter for imparting the thrust to the said bracket.

4. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, seaming members located on one side of the said work-supporter, and shoulders on the work-supporter and on the bracket in apposition to each other located on the side opposite to that of the seaming members for imparting the thrust to the said bracket.

5. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, seaming members located on one side of the said work-supporter, a shoulder on the bracket located on the opposite side of the work-supporter, and shoulders on the work-supporter in apposition to the shoulder on the bracket for imparting the thrust to the said bracket.

6. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, seaming members located on one side of the said work-supporter, a shoulder on the bracket located on the opposite side of the said work-supporter, a shoulder on the work-supporter in apposition to the shoulder on the bracket for imparting the direct thrust of the seaming members to the said bracket, and a second shoulder on the said work-supporter also in apposition to the shoulder on the bracket for imparting the torsional thrust due to rotation to the bracket.

7. The combination with a non-rotating

work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, seaming members located on one side of the said work-supporter and adjacent to the truck-roller on the gooseneck, and means on the opposite side of the said work-supporter for imparting the thrust to the bracket.

8. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, seaming members located on one side of the said work-supporter, and shoulders on the work-supporter and on the bracket in apposition to each other located on the side opposite to that of the seaming members for imparting the thrust to the said bracket.

9. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, seaming members located on one side of the said work-supporter and adjacent to the truck-roller on the gooseneck, a shoulder on the bracket located on the opposite side of the said work-supporter, and shoulders on the work-supporter in apposition to the shoulder on the bracket for imparting the thrust to the bracket.

10. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, seaming members located on one side of the said work-supporter and adjacent to the truck-roller on the gooseneck, a shoulder on the bracket located on the opposite side of the said work-supporter, a shoulder on the work-supporter in apposition to the shoulder on the bracket for imparting the direct thrust of the seaming members to the said bracket, and a second shoulder on the said work-supporter also in apposition to the shoulder on the bracket for imparting the torsional thrust due to rotation to the bracket.

11. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, angular plates adjustably secured to the bracket on either side of the said work-supporter, seaming members on one of said angular plates, a shoulder on the other of said angular plates, a shoulder on the work-supporter for imparting the direct thrust of the seaming members to the bracket and a second shoulder on the work-supporter adapted to impart the torsional thrust to the said angular plate.

12. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, angular plates adjustably secured to the bracket on either side of the said work-supporter, seaming members on one of said angular plates, a shoulder on the other of said angular plates, a shoulder on the work-supporter for imparting the direct thrust of the seaming members to the bracket, and a second shoulder on the work-supporter adapted to impart the torsional thrust to the said angular plate.

Signed at Brooklyn, New York, this 5th day of May, 1904.

OTTO S. BEYER.

Witnesses:
J. H. TEMPLIN,
H. KLOCKE.