

No. 695,521.

Patented Mar. 18, 1902.

G. WILCOX.

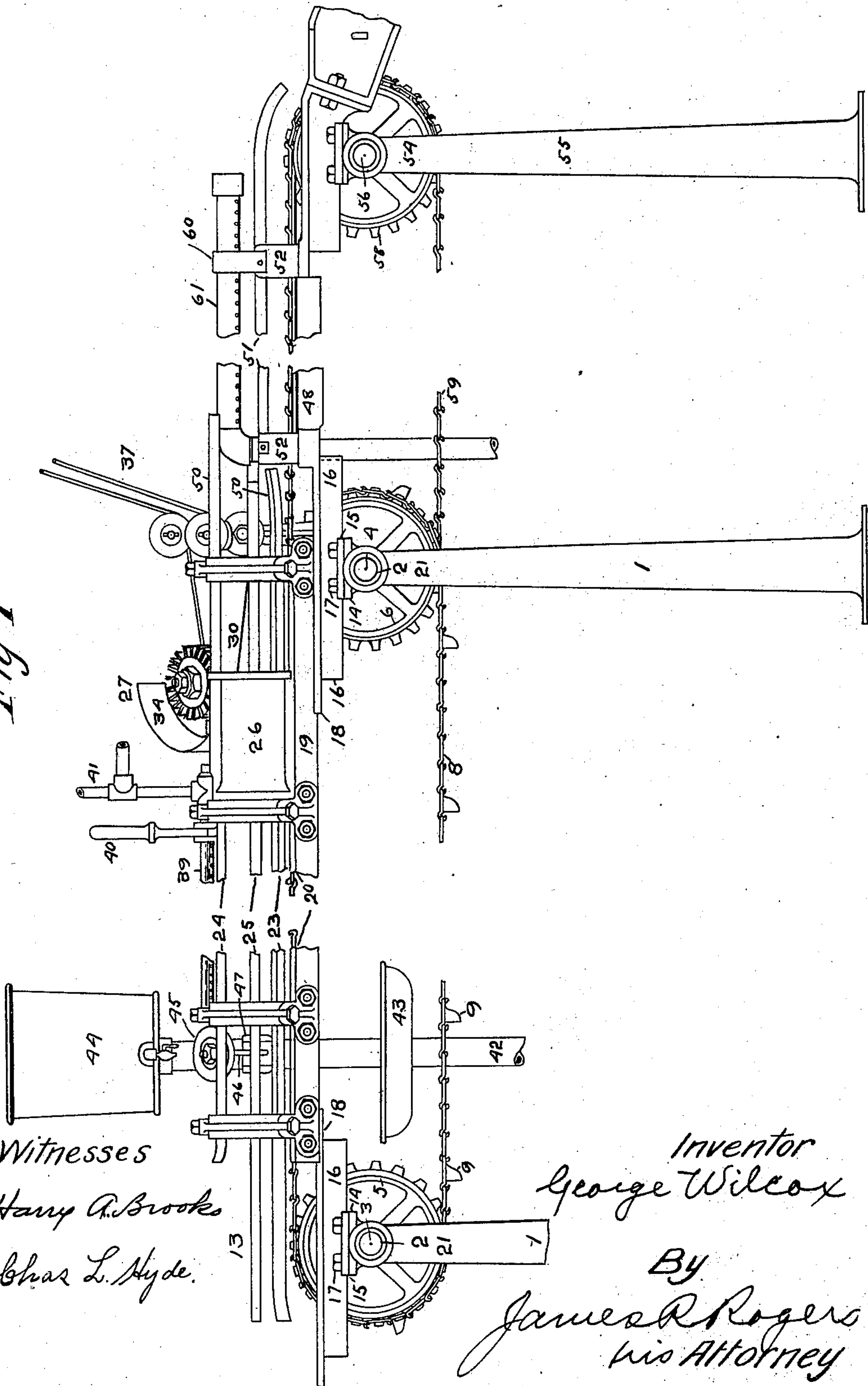
APPARATUS FOR SIDE SEAMING METAL CANS.

(Application filed Oct. 23, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig 1



Witnesses

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Chas L. Hyde.

Inventor  
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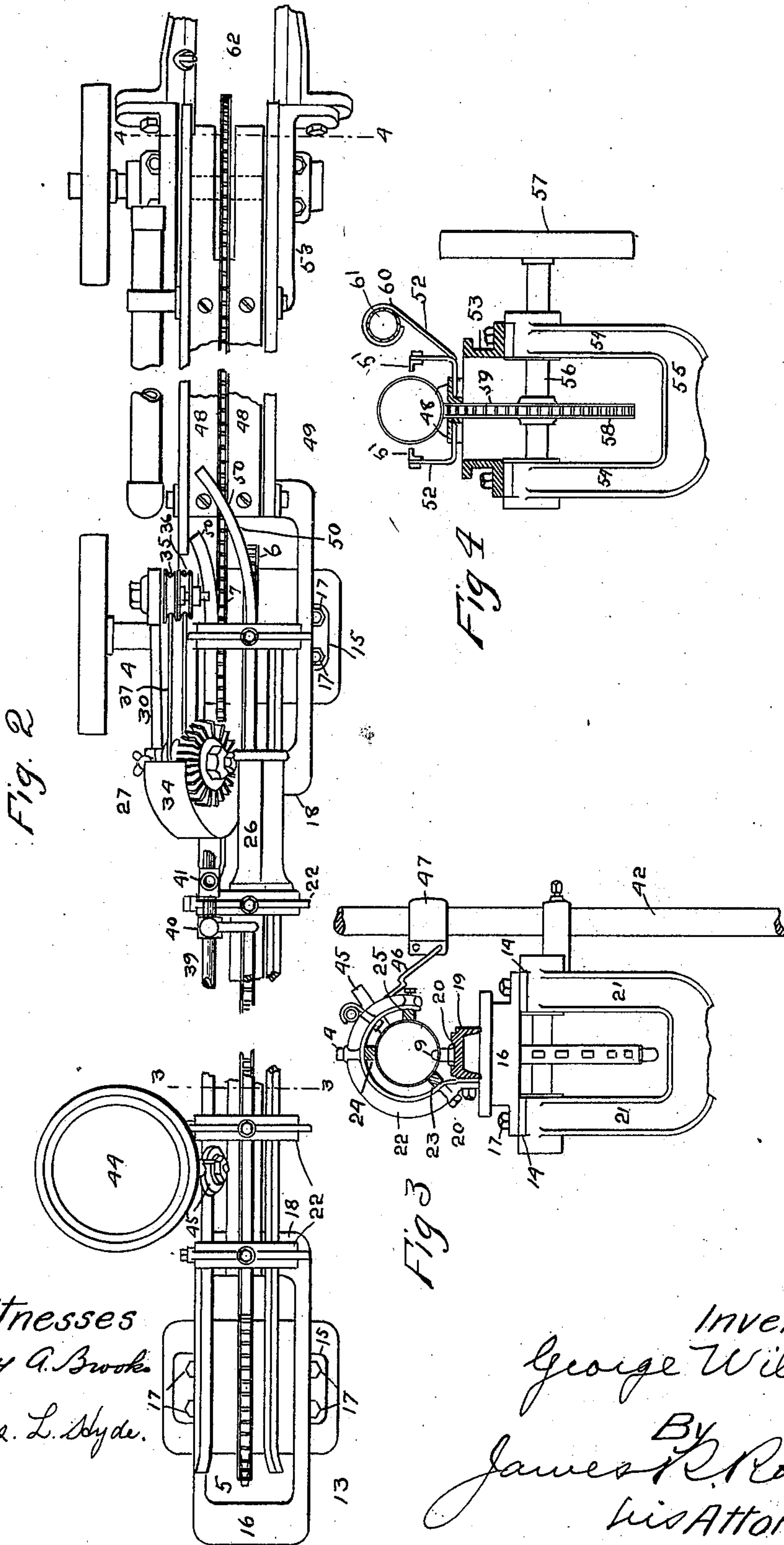
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

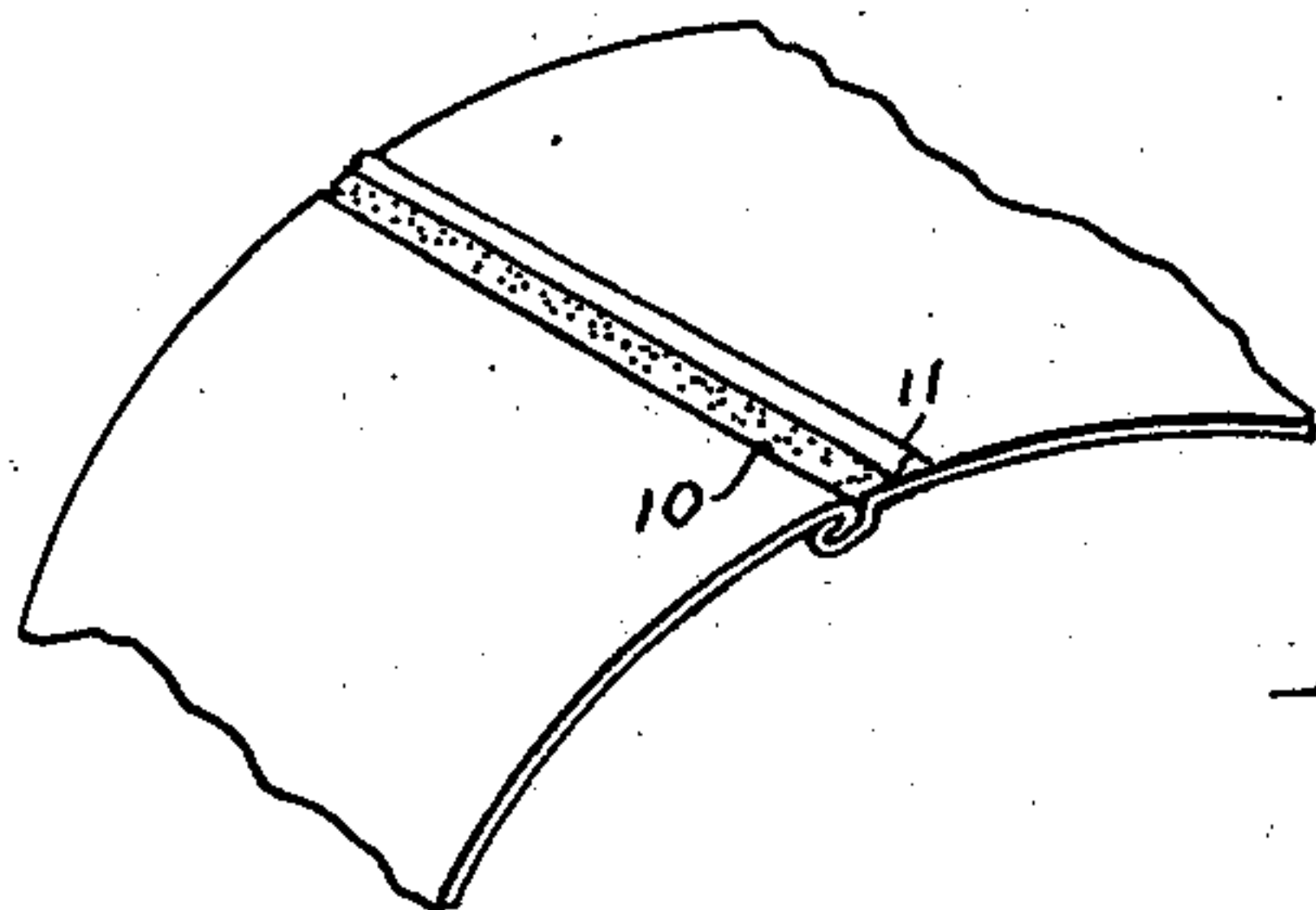


Fig. 5

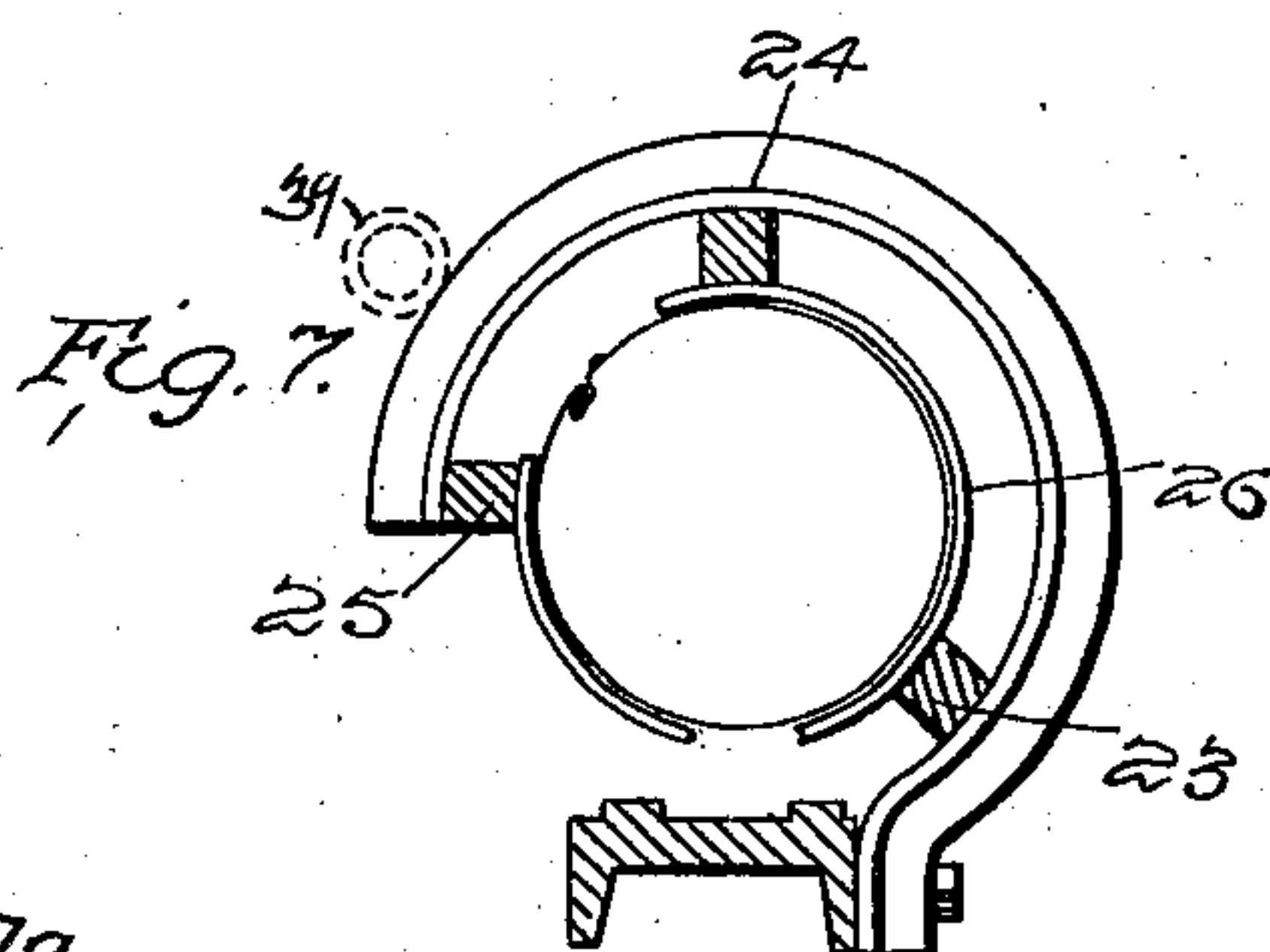


Fig. 7

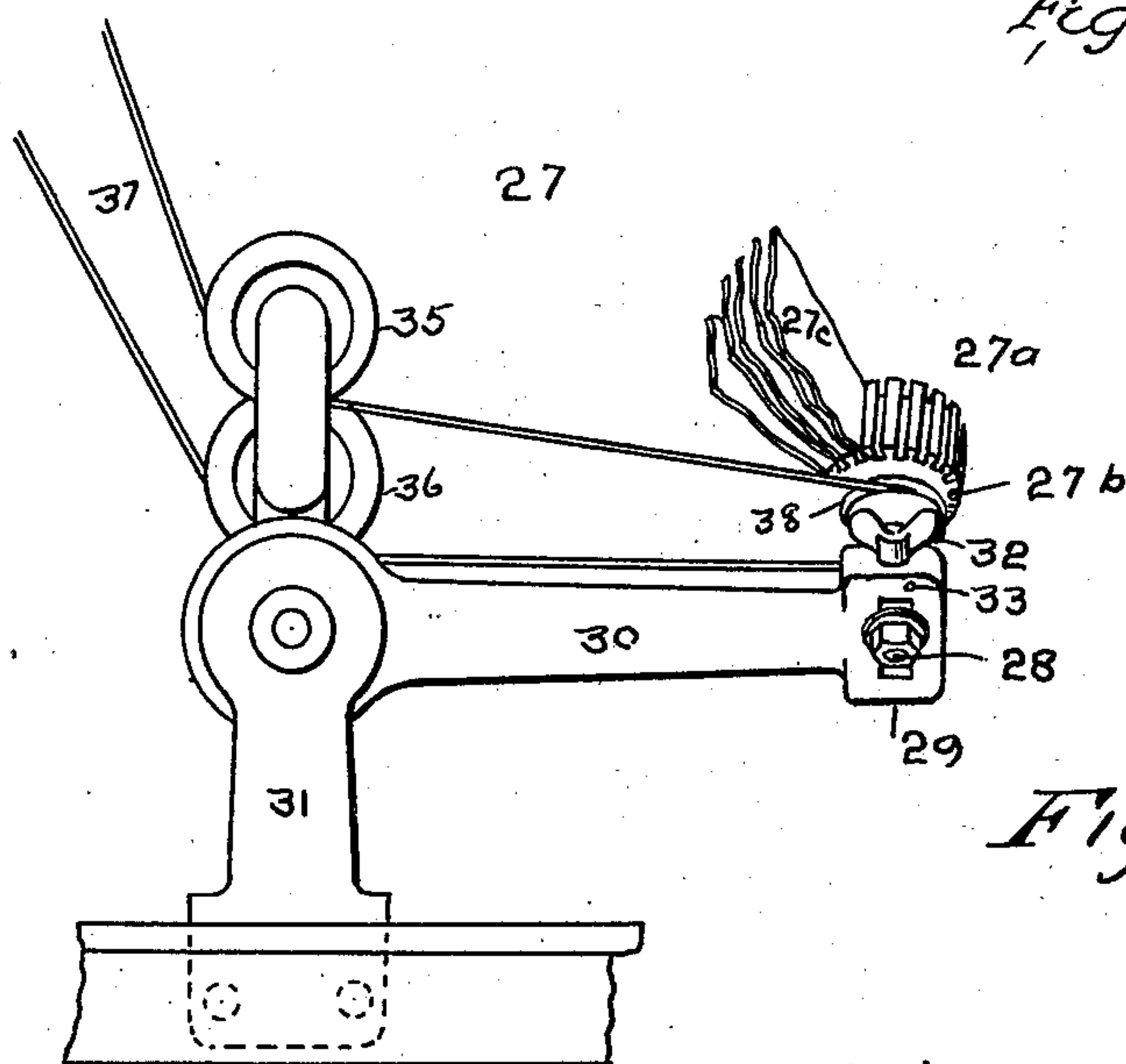


Fig. 6

Witnesses  
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# UNITED STATES PATENT OFFICE.

GEORGE WILCOX, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO AMERICAN CAN COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## APPARATUS FOR SIDE-SEAMING METAL CANS.

SPECIFICATION forming part of Letters Patent No. 695,521, dated March 18, 1902.

Application filed October 23, 1901. Serial No. 79,724. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE WILCOX, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Apparatus for Side-Seaming Metal Cans, of which the following is a specification.

This invention relates to apparatus for constructing vessels or receptacles, and particularly to an apparatus for side-seaming metal cans; and some of the objects of this invention are to produce an apparatus of this general character constructed to melt and direct the adhesive medium into the seam of a can-body after the same shall have been formed and seamed.

Another object of this invention is to provide an apparatus constructed to operate upon an adhesive medium disposed at a distance from the seam of the can-body.

A further object of the invention is to provide means for wiping or removing the surplus adhesive medium after the operation of seaming shall have been completed.

It is also an object of this invention to provide means for cooling the can-body along the seam thereof.

With these and other objects in view the invention consists, essentially, in the construction, combination, and arrangement of parts, substantially as more fully described in the following specification and illustrated in the accompanying drawings, forming part of this application, in which—

Figure 1 is a side elevational view, partly broken away, of an apparatus embodying the invention. Fig. 2 is a top plan view of the same. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 2. Fig. 4 is a section taken on line 4 4 of Fig. 2. Fig. 5 is a detail view of a portion of a can, and Fig. 6 is a detail of the wiper mechanism. Fig. 7 is a detail view showing a shell through which the cans pass, this view illustrating in dotted lines the position of the burner-tube to the seam to be soldered.

Similar characters of reference designate corresponding parts throughout the several views.

Referring to the drawings, and particularly

to Figs. 1 and 2 thereof, the reference character 1 designates standards or supports preferably provided with bearings 2, in which are journaled, respectively, shafts 3 and 4, the former carrying a sprocket-wheel 5 and the latter desirably being provided with two sprocket-wheels 6 and 7, and over the sprocket-wheels 5 and 6 passes a sprocket-chain 8, preferably provided with hooks or lugs 9, constructed to engage the end of a can-body after the same has been formed and seamed and project the same through the seamer portion of the apparatus.

In Fig. 5 there is illustrated a detail of a can-body as the same is constructed when discharged from the body-making machine after the ends of the body-blank have been bent upon themselves and interlocked and forced upon each other to lock the seam, as indicated at 10, while the reference character 11 designates a rib of solder along the can-body, preferably parallel to and at a distance from the seam 10, so that when the can-body is introduced into the apparatus at the end 13 thereof the seam 10 will occupy a position slightly to one side of the vertical longitudinal axis of the apparatus in order that the solder after being melted will run into and close the seam 10, substantially in the manner disclosed in my application, Serial No. 32,983, filed October 13, 1900, for a process for side-seaming metal cans.

The standards 1 are preferably provided with attaching-flanges 14, constructed to receive similar flanges 15, formed on or connected with frames 16, preferably rectangular in form, which may be secured in a removable manner upon said standards by means of attaching-bolts or similar devices 17, and the frames 16 are desirably provided with end extensions or flanges 18, constructed to receive and support a channel-iron 19, which may be secured thereon in any desired manner, and upon the upper surface of the channel-iron are suitably secured parallel bars to form the channel for the reception of the sprocket-chain 8, or a belt or cable may be used instead of the sprocket-chain 8, if found desirable in practice.

The standards 1 are preferably provided



with a bifurcated portion, forming arms 21, between which the sprocket-wheels 5, 6, and 7 are preferably mounted, substantially as shown in Figs. 3 and 4 of the drawings.

5 Formed on or connected with the channel-iron 19 are yokes 22, constructed to support the rails 23, 24, and 25, constituting the cage of the apparatus, constructed to receive and guide the can-body while the same is being  
10 propelled by the lugs 9 upon the sprocket-chain 8, and a shell or casing 26, Fig. 7, is preferably mounted upon the bars by being bolted or otherwise secured thereto, substantially as shown, and the shell 26 is preferably  
15 cut away at one side to allow a wiper 27 to remove the surplus solder from the edge or side of the can-body after the bead of solder 11 shall have been melted and the requisite amount thereof shall have been run into the  
20 seam of the can-body. The wiper 27 preferably consists of a hub portion 27<sup>a</sup>, desirably provided with transverse dovetailed slots 27<sup>b</sup> to receive strips of canvas 27<sup>c</sup>, which are preferably bent upon themselves intermediate of  
25 their length and forced into said slots, where they are held by their own expansibility. The wiper is preferably mounted on the shaft or spindle 28, which is preferably adjustably mounted in the slotted end 29 of an arm 30,  
30 supported on a standard 31, secured to one of the frames 16, and a set-screw 32 is preferably mounted in the end of said arm to regulate the position of said shaft or spindle 28, and the set-screw may be provided with an  
35 annular recess to receive a stop-pin 33 to retain the set-screw in position. A segmental shield 34 may be mounted adjacent to the wiper to prevent the particles of solder from being projected to a distance from the appa-  
40 ratus during the operation of the wiper, which preferably rotates in a direction opposite to the feed of the can-bodies, and the wiper is preferably held obliquely to the cage, substantially as shown. The standard 31 is desirably  
45 extended above the connection of the arm 30 therewith to support idle pulleys or sheave-wheels 35 and 36, which are preferably mounted in a different vertical and horizontal plane with relation to each other and which are con-  
50 structed to receive a belt 37, driven in any suitable manner, which desirably passes over a pulley or sheave-wheel 38 upon the hub of the wiper to impart motion thereto.

Movably mounted upon the yokes 22 in any  
55 suitable manner is a pipe 39, preferably provided with one or more rows of lateral orifices for the escape of the medium employed, preferably gas, whereby a row of jets of flame is directed upon or over the bead 11 of solder  
60 upon the body of the can in such a manner that said bead is melted, and the melted solder is caused to flow into and fill the seam by reason of the inclined position of the surface of the can-body above the bead, it being  
65 understood that the flame is desirably directed tangentially upon the body of the can. A handle 40 may be secured upon the pipes to

rotate the same when it is desired to temporarily remove the flame from the can-body during an interruption in the operation of the apparatus, and the pipes 39 will be provided with the necessary supply connections 41 in the usual manner.

A post or standard 42 may be mounted adjacent to the apparatus and may carry a drip basin or receptacle 43 to receive the surplus fluid that drips from the reservoir 44, preferably upon a flux-disk 45, carried by an arm 46, formed on or connected with a collar 47 upon the post 42, substantially as shown in Figs. 1 and 3 of the drawings, and by means of this construction the flux-disk is caused to rotate by the action or passage of the can-body thereunder and during such rotation to apply a solution of chlorid zinc or other suitable fluid upon or over the solder bead 11 and the seam 10 to facilitate the operation of soldering the latter, as will be readily understood.

The cooling portion of the apparatus embodies by preference parallel angle-bars 48, which may be bolted or otherwise secured to one of the frames 16, but preferably out of alignment with the channel-iron 19, so that the bars 23, 24, and 25 of the cage are preferably curved or bent, substantially as shown at 50, to direct the can-bodies upon the angle-iron 48, where they are retained or from whence they are prevented from accidental removal by means of parallel bars 51, preferably carried or supported by arms 52, suitably secured upon the angle-irons 48, essentially in the manner illustrated in Figs. 2 and 4 of the drawings, which latter figure illustrates a can-body in the cooling-machine. The free ends of the angle-iron 48 are preferably supported upon a frame 53, secured upon the bifurcated portion 54 of a standard or support 55, Fig. 4, and within said bifurcated portion is preferably journaled a shaft 56, carrying a pulley or band-wheel 57 and a sprocket-wheel 58, over which passes a sprocket-chain 59, with or without engaging lugs or shoulders, and also passing over the sprocket-wheel 7 upon the shaft 4, journaled in one of the standards 2 of the fusing-machine, as will be readily understood.

Suitably mounted in a bracket or support 60 is a pipe 61, designed to convey cool air to the cooling-machine and liberate the same directly upon the seam of the can-body to cool the same quickly, thereby facilitating the soldering process.

The pulley or band-wheel 57 may be driven by a suitable belt to actuate the sprocket-chain 59, which preferably passes between the angle-bars 48 and acts as a conveyer to transport the can-bodies to a discharge or runway 62 or into any other machine or apparatus.

It will be understood that this invention is capable of employment with a body-making machine and can be used as an attachment therefor, and it will also be understood that the cool-air pipe will be provided with suit-



able connections with the source of the cooling medium employed.

The operation of the invention will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following explanation thereof: After the can-body shall have been locked and supplied with a bead of solder, substantially as indicated at 10 and 11 in Fig. 5 of the drawings, the same may be introduced within the cage or upon the sprocket-chain 8, where it is taken up by the lugs or shoulders 9 thereof and conveyed in contact with the gravity-acting flux-disk 45, which applies the fluid upon the bead and seam by the frictional rotation of said disk thereon, and the can-body is then conveyed along and adjacent to the gas-pipe 39, when the flames from the latter melt the solder bead 11 and cause the solder to flow by gravity around a portion of the circumference of the can-body into the seam 10 and close the same, whereupon the sealed seam is brought under the action of the wiper 27, which removes all surplus solder from the seam by rotating in contact therewith. Then the sprocket-chain 8 discharges the can-body into the cooling-machine, where it is taken up and carried forward by the sprocket-chain 59, and the seam of the can is subjected to the action of a jet or current of cooling fluid from the cold-air pipe 61 to cool the same.

It is not desired to confine this invention to the specific construction, combination, and arrangement of parts herein shown and described, and the right is reserved to make all such changes in and modifications of the same as come within the spirit and scope of this invention.

I claim—

1. An apparatus for side-seaming metallic bodies comprising heating means directed to heat the attached solder rib-like deposit above the seam and the seam while the same lies to

one side of the axial vertical plane of the body and means for holding the body with the seam so located to one side of the vertical axial plane of the body, whereby the solder is caused to flow down into the seam, substantially as described.

2. In combination in a soldering-machine with heating means, means for holding and carrying a can with its side seam and its solder rib-like deposit thereabove located to one side of the vertical axial plane of the can, said holding and carrying means being arranged to convey the can-body so that its side seam and solder rib will be carried longitudinally past the heating means, whereby the solder is caused to flow down into the seam, substantially as described.

3. In combination, a conveyer for holding and conveying a can-body with its side seam and its solder rib-like deposit thereabove substantially horizontal and to one side of the vertical axial plane of the can-body, and a soldering device consisting of a heating-jet directed to the said side seam and solder rib, whereby the solder is caused to flow down into the seam, substantially as described.

4. In combination, a conveyer for holding and conveying a can-body with its side seam and its solder rib-like deposit thereabove, substantially horizontal and to one side of the vertical plane of the can-body, a soldering device consisting of a soldering-jet directed to the side seam and the soldering-rib thereabove, whereby the solder is caused to flow down into the seam and a wiper acting after the soldering operation to wipe the surplus molten solder from the exterior of the can.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE WILCOX.

Witnesses:

J. W. KEMP,  
L. B. ALDERETE.