

No. 717,360.

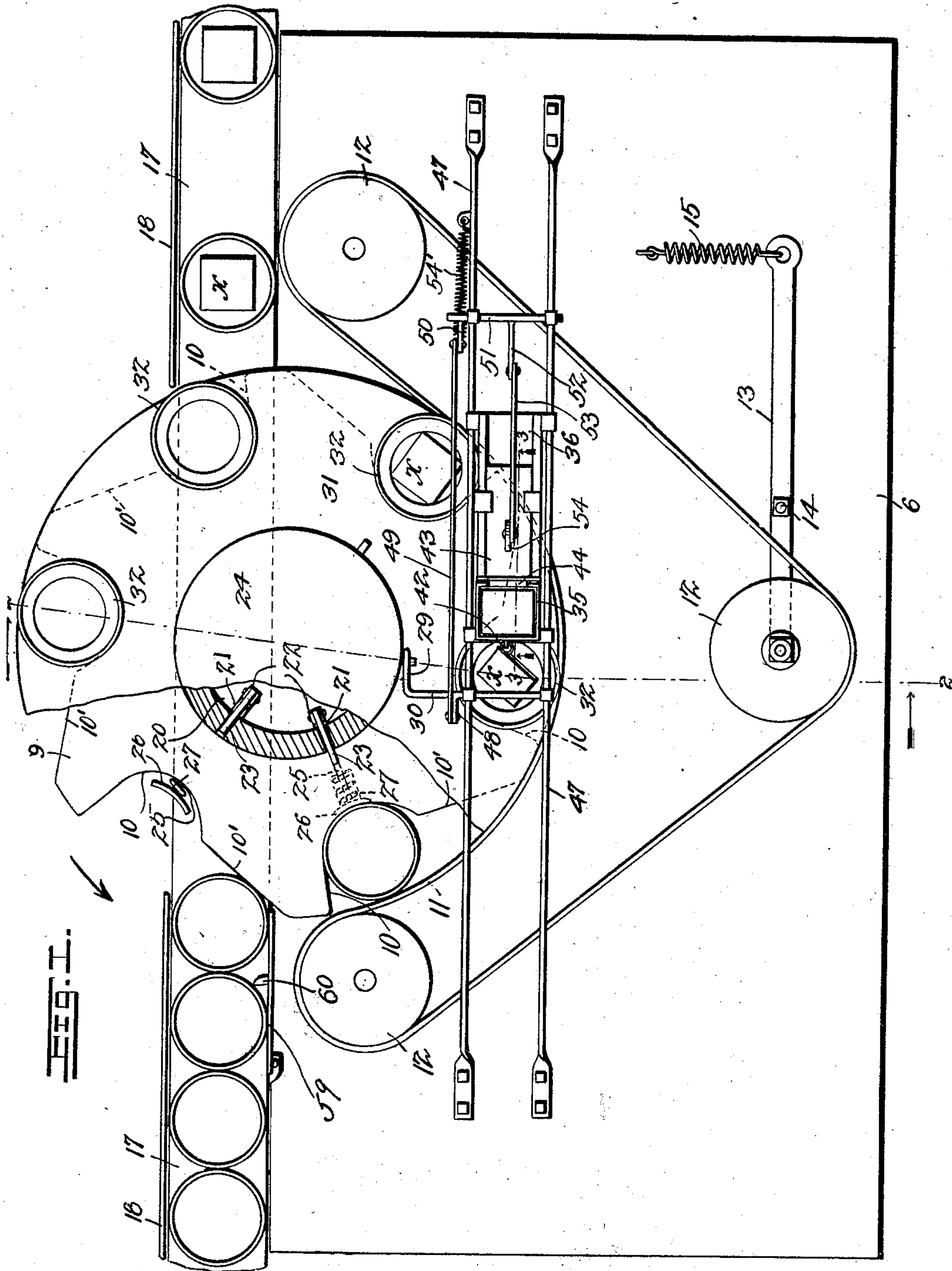
Patented Dec. 30, 1902.

W. E. DEMENT.
MACHINE FOR PLACING SHIELDS IN CANS.

(Application filed Jan. 29, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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J. H. Parker

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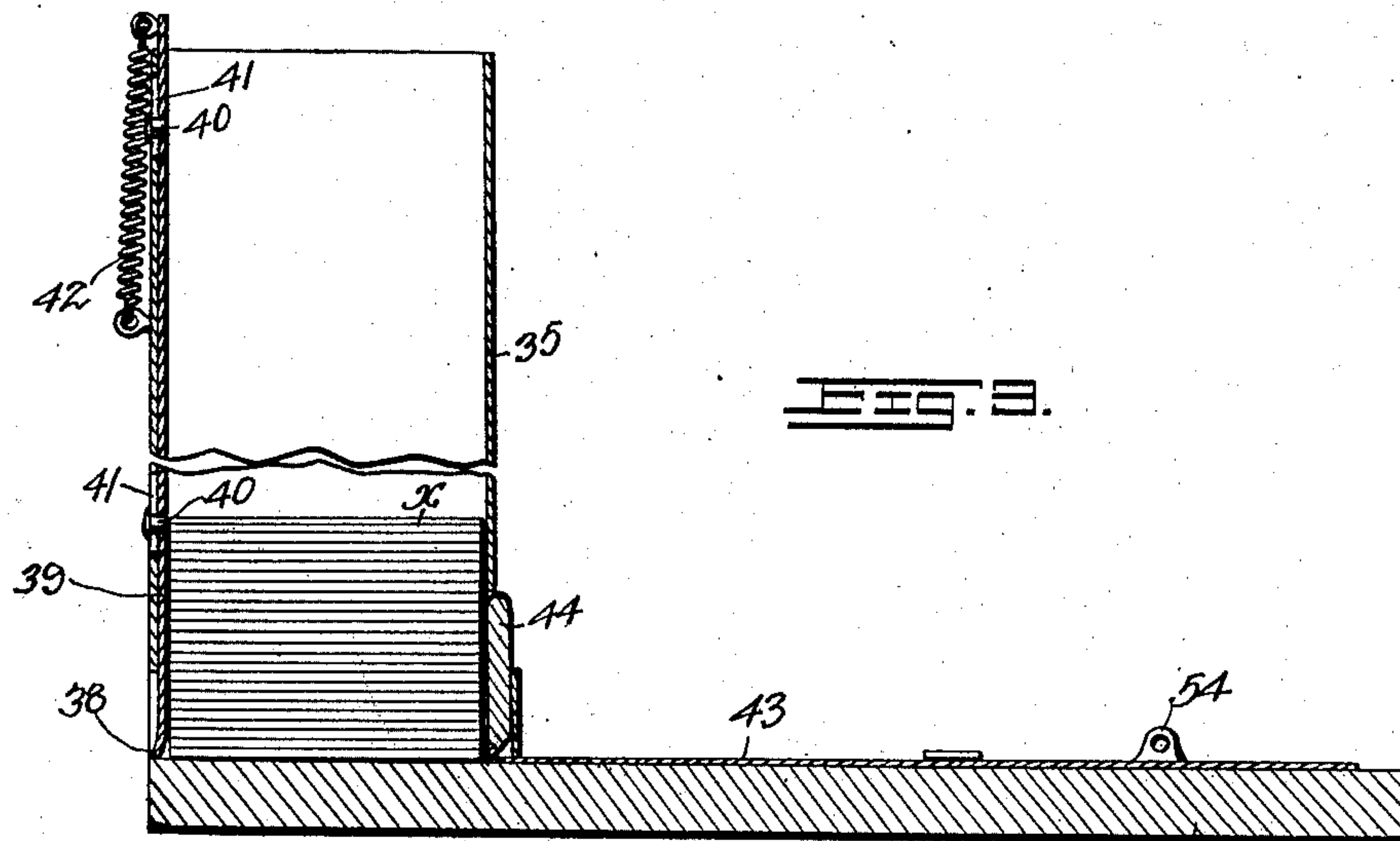


Fig. 3.

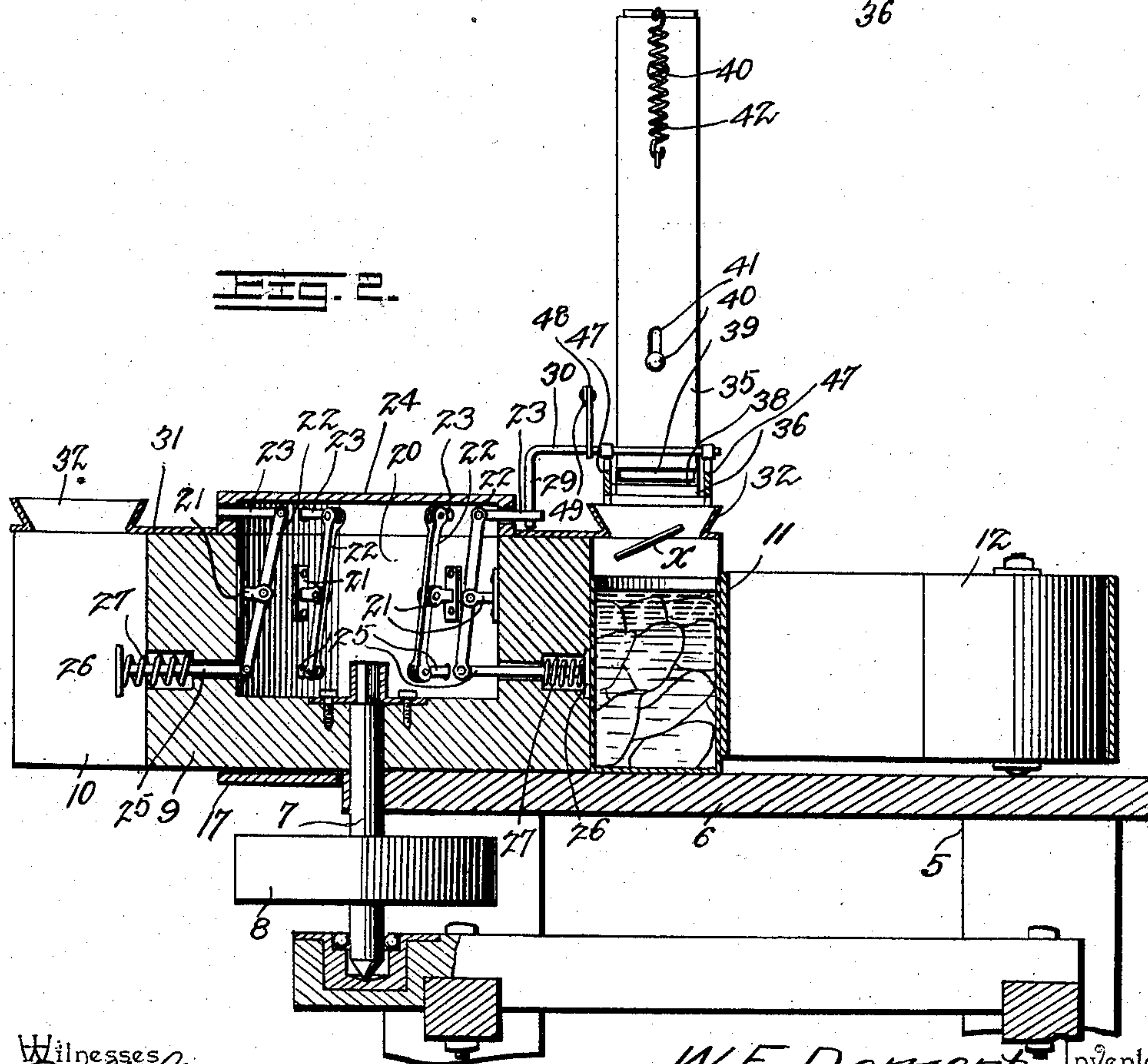


Fig. 2.

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UNITED STATES PATENT OFFICE.

WALLACE E. DEMENT, OF BLAINE, WASHINGTON, ASSIGNOR OF TWO-THIRDS TO JAMES MARCUS AND MORRIS ARONSON, OF BLAINE, WASHINGTON.

MACHINE FOR PLACING SHIELDS IN CANS.

SPECIFICATION forming part of Letters Patent No. 717,360, dated December 30, 1902.

Application filed January 29, 1902. Serial No. 91,786. (No model.)

To all whom it may concern:

Be it known that I, WALLACE E. DEMENT, a citizen of the United States, residing at Blaine, in the county of Whatcom and State of Washington, have invented a new and useful Machine for Placing Shields in Cans, of which the following is a specification.

My invention relates to certain improvements in canning-machines, and has for its principal object to provide an automatic machine for placing solder-shields in the filled cans before the can-tops are placed and soldered in position.

With this and other objects in view the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view, partially in section, of a shield-placing machine constructed and arranged in accordance with my invention. Fig. 2 is a transverse sectional elevation of the same on the line 2 2 of Fig. 1. Fig. 3 is a longitudinal sectional elevation on the line 3 3 of Fig. 1 and drawn to a somewhat larger scale in order to more clearly illustrate the construction of the shield-hopper.

Similar letters and figures of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In the canning of salmon and other materials it is usual to place on the top of the contents of the can a small metallic shield during the travel of the can from the washing or filling machine to the topping-machine, the shields being placed by hand, and under ordinary circumstances the attendant is likely to insert two or more shields in a can in place of the single shield necessary for the purpose.

In carrying out my invention I employ a machine which will automatically deposit in each can a single shield, the can itself serving to effect the delivery of the shield from the shield-containing hopper and the latter being actuated only at such times as a can is in proper position below the hopper.

Referring to the drawings, 5 represents a

suitable frame having a table or platform 6 and provided with suitable bearings for the reception of a vertical shaft 7, having a belt or other driving wheel 8. The shaft 7 supports a turret 9, having at its periphery a series of can-receiving openings 10, the innermost portions of which are in the form of semicircular sockets in which the can is seated, the outer edge of the can being arranged on the peripheral line of the turret and held in position during its travel with the turret by an idler-belt 11, carried by a series of belt-guiding wheels 12, one of which is carried by a lever 13, fulcrumed at 14 and held by a spring 15 in such position as to keep the belt taut. The openings 10 in advance of the socket portion are inclined, as indicated at 10', in order to guide the cans gradually into the recesses. The cans are fed to and delivered from the machine by a conveyer-belt 17, being held in position by guides 18, as shown in Fig. 1. The belt passes directly under the turret and in operation gradually feeds the cans into the recesses until the cans are fully entered in the socket portions, the further movement being in a circular direction under the influence of the turret and the cans being moved under a suitable shield-delivering device and finally passing from the turret to the conveyer-belt and from thence to the topping-machine, or separate belts may be employed to feed and to deliver the cans.

In the central portion of the turret is a circular opening 20, on the wall of which are secured a series of brackets 21, equal in number to the number of can-receiving openings, and to each bracket is fulcrumed a lever 22, having at its upper end a pin 23, adapted to a guiding-opening formed in a top plate or cover 24, the pin being adapted for radial movement in said opening. The inner wall of each of the sockets 10 is provided with a guiding-opening for the reception of a rod 25, the inner end of which is pivotally connected to the lower end of a lever 22, said rods being provided with curved plates 26, against which the cans are pressed, the plates being normally held in a position some distance away from the socket-wall by suitable springs 27, arranged on the bars 25 and adapted to

recesses in the turret. When the can is fully seated within a socket 10, the belt 11 will force the can firmly against the plate 26, moving the bar 25 toward the center of rotation of the turret and projecting the connected pin 23 beyond the periphery of the cap 24 and in line with a rocker-arm 29, carried by a rock-shaft 30, which is connected to the shield-delivering mechanism.

10 The height of the turret is greater than the height of the cans, and the top of the turret is covered by a plate 31, having a series of small hopper-like guides 32, arranged one above each of the can-receiving sockets 10, these guides acting to insure the proper delivery of the shield to the can.

The shield-hopper 35 is mounted on a bed or table 36, suitably supported at a point immediately above the turret. The hopper comprises a suitable box or casing open at top and bottom and having at the bottom a shield-delivery opening 38, which is normally closed or partly closed by a slide 39, having suitable guiding bolts or pins 40, extending through vertical slots 41 in one wall of the hopper. The slide is depressed by a spring 42, connected at one end to the slide and at the opposite end to the wall of the hopper. This slide has a slightly curved or inclined lower edge, which will permit of the yielding movement of the slide to allow the passage of the lowermost of the can-shields x , but on occasion may yield to a greater extent in order to prevent breakage should the delivery-slide tend to force two or more shields from the hopper at one operation. The delivery-slide 43 is in the form of a sheet of metal a trifle thinner than the shields and is guided on a bed 36, its forward edge engaging with the lowermost slide and forcing the same out through the hopper. At the rear wall of the hopper is a vertically-movable plate 44, having a beveled lower edge against which the slide strikes at each movement, the plate being raised to permit the entrance of the slide and the delivery of the shield, but preventing the passage of shields with the slide on the rearward movement thereof. This construction is found much better than a simple opening, owing to the fact that the shields are very thin, and the employment of a simple opening would tend to permit the withdrawal or partial withdrawal of one or more shields with the slide and render the device inoperative. In the construction herein shown the plate 44 presses firmly against the top of the slide and prevents any rearward movement of a shield when the slide is moving to the rear, and when the slide passes from under the plate 44 the latter descends and comes into contact with the bed 36. On the forward movement of the slide its front edge engages with the beveled lower edge of the plate 44 and raises the same to an extent equal to the thickness of the slide, the further forward movement of the latter resulting in the delivery of the lowermost shield in the hopper.

The rock-shaft 30 is held in suitable bearings in supporting-frames 47 and is provided with a vertically-disposed arm 48, connected by a rod 49 to a rocker-arm 50 on a rock-shaft 51, the latter being also held in bearings on the frame 47. The shaft 51 has an arm 52, connected by a link 53 to a pin 54 on the delivery-slide, and at each operation the tappet-pin 23 of a can will engage with the rocker-arm 29, causing a forward or delivery movement of the slide through the connecting-arms and rock-shaft, forcing a shield from the hopper 35 over the end of the bed 36, the shield falling through the hopper-like guide 32 into proper position within the can. After each operation the rock-shafts are returned to initial position and the slide is withdrawn from the hopper by a tension-spring 54', connecting the rocker-arm 50 to a fixed point on the frame.

Should there be no can in the turret recess or socket below the delivery-point of the hopper, there will be no operation of the delivery-slide, owing to the fact that the tappet-pin 23 is held out of operable relation with the arm 29 by the compression-spring 27.

In order to prevent the entrance of more than one can to each turret-pocket or to prevent any jamming of the cans at the point where they are fed into the turret, I employ a guard comprising a spring 59, forming the inner side of the end portion of the can-guide 18, the end of the spring projecting slightly within the peripheral line of the turret and being provided with a guard or finger 60, adapted to engage in front of successive cans and prevent the movement of the latter in the direction of the turret. When a can in front of the guard has passed into one of the turret-recesses, the substantially radial wall of the recess will engage the spring and move the guard or finger from the path of movement of the cans, permitting the feed-belt to travel the cans in the direction of the turret until a single can has passed beyond the guard or finger. By this time the peripheral portion of the turret has passed beyond the end of the spring and the latter reassumes the position shown in Fig. 1, the guard or finger engaging and holding all of the cans except the one being moved into the turret-recess. After the cans have received a shield from the hopper the further travel of the turret will move the can to a point where the belt 11 leaves the turret tangentially, and the spring 27 then acts to impart an initial outward movement to the can in advance of its reception by the conveyer-belt 17.

While the device 11 has been described as a traveling belt, it will be understood that a stationary plate may be employed instead, although in most cases the traveling belt is preferred, owing to the reduction in friction on the can.

Having thus described my invention, what I claim is—

1. In a device of the class specified, a shield-

containing hopper, shield-delivering mechanism, means for feeding cans beneath the hopper, and mechanism controlled by the position of the cans in the feeding means for effecting an operative movement of the shield-delivery mechanism.

2. In a device of the class specified, a shield-containing hopper, mechanism for delivering the shields from the hopper, means for feeding cans beneath the hopper, and mechanism normally in inoperative position and movable into position to actuate the shield-delivery mechanism by engagement with the cans.

3. In a device of the class specified, a shield-containing hopper, mechanism for delivering the shields from the hopper, mechanism for feeding cans beneath the hopper, and mechanism engaged by the cans and movable thereby into operative position to actuate the shield-delivering mechanism.

4. In a device of the class specified, a shield-containing hopper, a feeding device for the cans, mechanism for delivering the shields from the hopper, and an actuating mechanism movable into operable relation to the hopper delivery mechanism, said actuating mechanism being adjustable to operative position by contact with the can as the latter enters the feeding mechanism.

5. In a device of the class specified, a shield-containing hopper, a recessed turret adapted to receive the cans and to move the same under the hopper, means for feeding the cans into the turret-recesses, shield-delivery mechanism, and movable pins carried by the turret and adjustable into operable relation to the shield-delivery mechanism by the entrance of the cans into the recesses of the turret.

6. In a device of the class specified, a shield-containing hopper, mechanism for delivering shields from the hopper, a recessed turret adapted to receive the cans and to move the same successively beneath the hopper, means for maintaining the cans in position in the recesses, and mechanism carried by the turret and adapted to operate on the shield-delivering mechanism, said turret mechanism being moved into operative position by engagement with the cans on the entrance of the latter into the recesses.

7. In a device of the class specified, a shield-containing hopper, mechanism for delivering shields therefrom, a turret having peripherally-disposed can-receiving recesses, a belt adapted to embrace a portion of the turret and to retain the cans within the recesses, and mechanism carried by the turret and engaged and actuated by the cans on the entrance of the latter into the turret-recesses to thereby effect an operative movement of the shield-delivering mechanism.

8. In a device of the class specified, a shield-containing hopper, mechanism for delivering shields therefrom, a turret having a can-recess, a spring-pressed plate arranged within the recess and adapted to be depressed by the can, and a tappet-pin carried by the turret

and connected to said plate, said tappet-pin being moved into operable relation with the shield-delivering mechanism by the yielding of said spring-pressed plate, substantially as specified.

9. In a device of the class specified, a hopper, a shield-delivery mechanism for said hopper, a revoluble turret having a series of can-receiving recesses, a spring-pressed plate disposed within said recess and adapted to be engaged by the entrance of a can, a rod secured to each plate, a vertically-disposed lever connected to said rod, a tappet-pin also connected to said lever, said tappet-pin being movable into operable relation to the shield-delivery mechanism on the yielding of said spring-pressed plate, and means for holding the cans in position within the recesses.

10. In a device of the class specified, a revoluble turret having a series of peripherally-disposed can-receiving recesses, each provided with a tapering guiding-opening in advance of the recess to permit the gradual entrance of the cans into said recesses, a feed-belt adapted to move the cans gradually into the opening and thence into the recesses, means for retaining the cans in position in said recesses, means for automatically feeding a shield to each can, and means for delivering the cans from the turret-recesses.

11. In a device of the class specified, a shield-containing hopper, means for delivering shields therefrom, a turret having can-receiving recesses, spring-pressed plates adapted to be engaged and repressed against the action of the springs on the entry of the cans into the turret-recesses, means for holding the cans in position during the delivery of shields thereto, whereby on the release of the cans from the holding means the springs act to impart an initial discharge movement to said cans, and mechanism movable by said plates into operable relation with the shield-delivery mechanism.

12. In a device of the class specified, a continuous can-conveying belt, a revoluble turret arranged above said belt and in the path of movement thereof, a series of peripherally-disposed can-receiving recesses arranged in the turret and adapted to successively remove the approaching cans from the belt and to again deposit the same thereon, and an automatic shield-delivery mechanism adapted to deliver a shield into each can during the travel thereof in said recessed turret.

13. In a device of the class specified, a shield-containing hopper, mechanism for delivering shields therefrom, a revoluble recessed can-receiving turret, mechanism adapted to be engaged by the cans and moved into operable relation with the shield-delivering mechanism on the entrance of the cans to the turret, and an idler-belt surrounding the portion of said turret and adapted to hold the cans in position therein.

14. In a device of the class specified, a shield-containing hopper, mechanism for delivering

shields therefrom, a revoluble turret having can-receiving recesses, a guiding-hopper carried by the turret above each of the recesses, and mechanism adapted to be engaged by the cans on the entrance of the latter into said recesses and thereby moved into operable position for effecting a movement of the shield-delivery mechanism.

15. In a device of the class specified, a shield-containing hopper having a delivery-opening, a yielding plate normally closing said opening and movable to open position by contact with a shield being delivered, a slide adapted to engage with and force the lowermost shield from the hopper, mechanism for feeding cans below the hopper, and means connected to said slide and operable by the can-feeding mechanism for effecting a reciprocation of said slide.

16. In a device of the class specified, a shield-containing hopper having a delivery-opening, a vertically-movable spring-pressed plate normally closing said opening, a slide adapted to force the lowermost shield into engagement with the spring-pressed plate to thereby elevate said plate and to move the shield through the delivery-opening, mechanism for feeding cans below the hopper, and mechanism indirectly operable by the cans for effecting the movement of the slide, substantially as specified.

17. In a device of the class specified, a shield-containing hopper, a slide adapted to deliver the lowermost shield therefrom, a vertically-movable plate carried by the hopper and having a beveled lower edge adapted to be engaged by the front edge of the slide on the beginning of the forward movement of said slide to thereby raise the plate and permit the entrance of the slide to the hopper, said plate being adapted to rest on the upper surface of the slide to prevent the withdrawal of a shield by the slide, and means for actuating said slide, substantially as specified.

18. In a device of the class specified, a shield-containing hopper, a delivery-slide adapted to engage with and force the lowermost shield from the hopper, a vertically-movable plate having an inclined lower face adapted to be engaged by the slide, said plate resting on the upper surface of the slide and preventing the withdrawal of a shield by said slide and the inclined lower face of the plate being engaged and raised by the slide on the beginning of the forward movement of the latter, and means for actuating said slide, substantially as specified.

19. In a device of the class specified, a revoluble turret having a series of can-receiving openings 10, means for gradually feeding a can into each of said openings, rods 25 arranged in the turret, a plate 26 carried by each rod and projecting into the can-receiving opening, a spring 27 adapted to project said plate, a fulcrumed lever 22 connected to said rod 25, a radially-guided tappet-pin 23 connected to the upper end of each lever, a belt 11 adapted to retain the cans in position against the pressure of the springs 27, a shield-containing hopper 35, a slide 43 for delivering shields therefrom, a rock-shaft 30, means for supporting the same, a rocker-arm 29 carried by the rock-shaft in the path of movement of the tappet-pins 23, a rock-shaft 51 having a rocker-arm 50, a rocker-arm 48 carried by the rock-shaft 30, a connecting-rod 49 extending between the rocker-arms 48 and 50, a rocker-arm 52 carried by the rock-shaft 51, a link 53 connecting the rocker-arm 52 to the slide 43, and a spring 54' for returning said slide to initial position after each operation.

20. In a device of the class specified, a shield-containing hopper, a recessed turret adapted to receive and move the cans beneath said hopper, a spring-guard arranged in the path of movement of the cans and adapted to engage with and prevent movement of the cans until a turret-recess is in proper position, and means for actuating said spring-guard.

21. In a device of the class specified, a feed belt or conveyer having side guards, a spring-guard for arresting the movement of the cans, a shield-containing hopper, a turret having peripherally-disposed recesses adapted to receive the cans from the conveyer and to move the same beneath the said hopper, and means for engaging and releasing the spring-guard at predetermined intervals.

22. In a device of the class specified, a revoluble turret having a series of can-receiving recesses, a guard encircling a portion of the turret to prevent the escape of the cans from the recesses, said guard being movable by contact with the turret, a shield-containing hopper, and means for delivering shields from said hopper into the cans.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WALLACE E. DEMENT.

Witnesses:

WM. J. GILLESPIE,
KAUFMAN ROSENFELD.