

Dec. 14 , 1926.

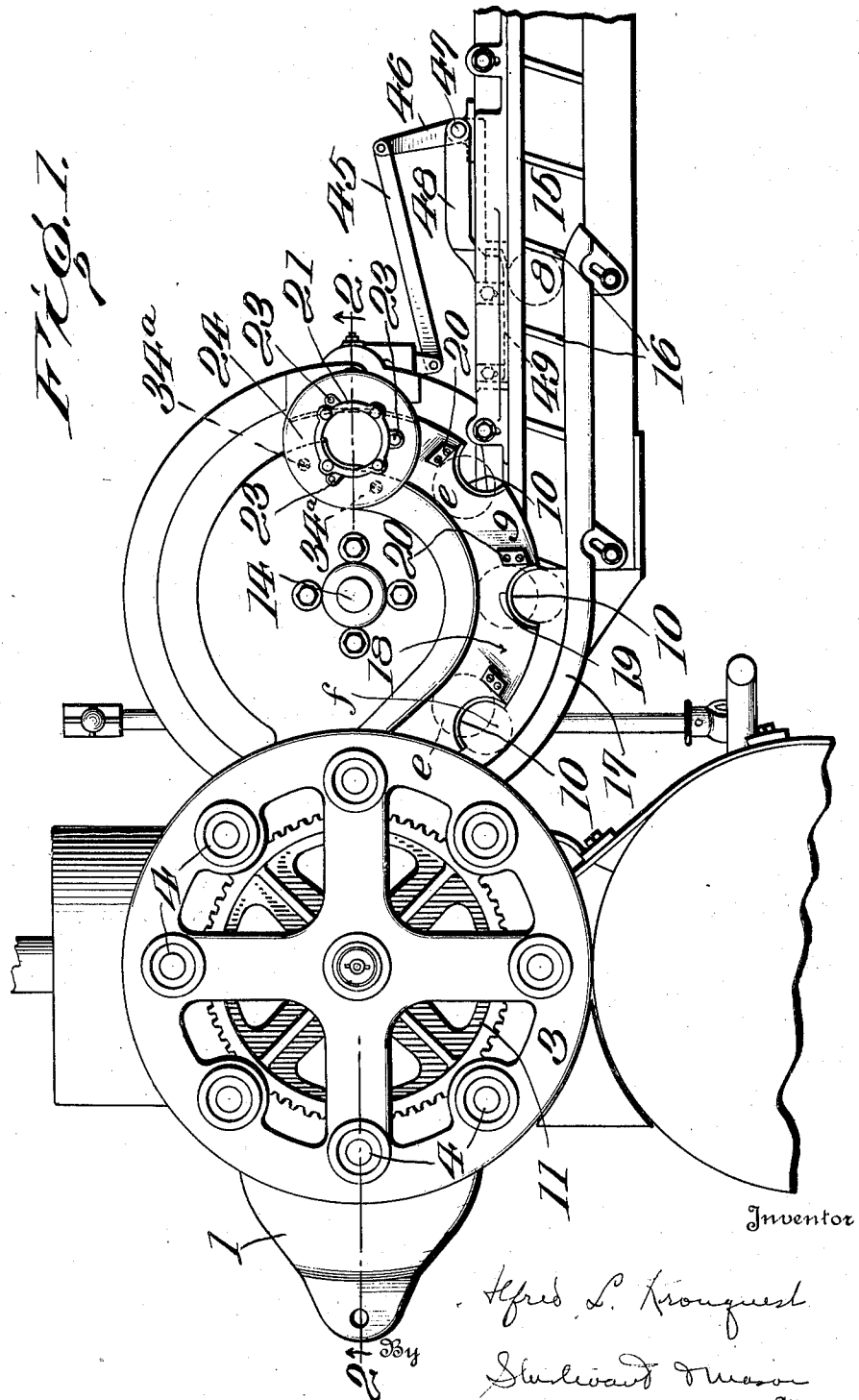
A. L. KRONQUEST

1,610,862

CAN END APPLYING MECHANISM FOR CLOSING MACHINES

Filed July 5, 1923

5 Sheets-Sheet 1



Dec. 14, 1926.

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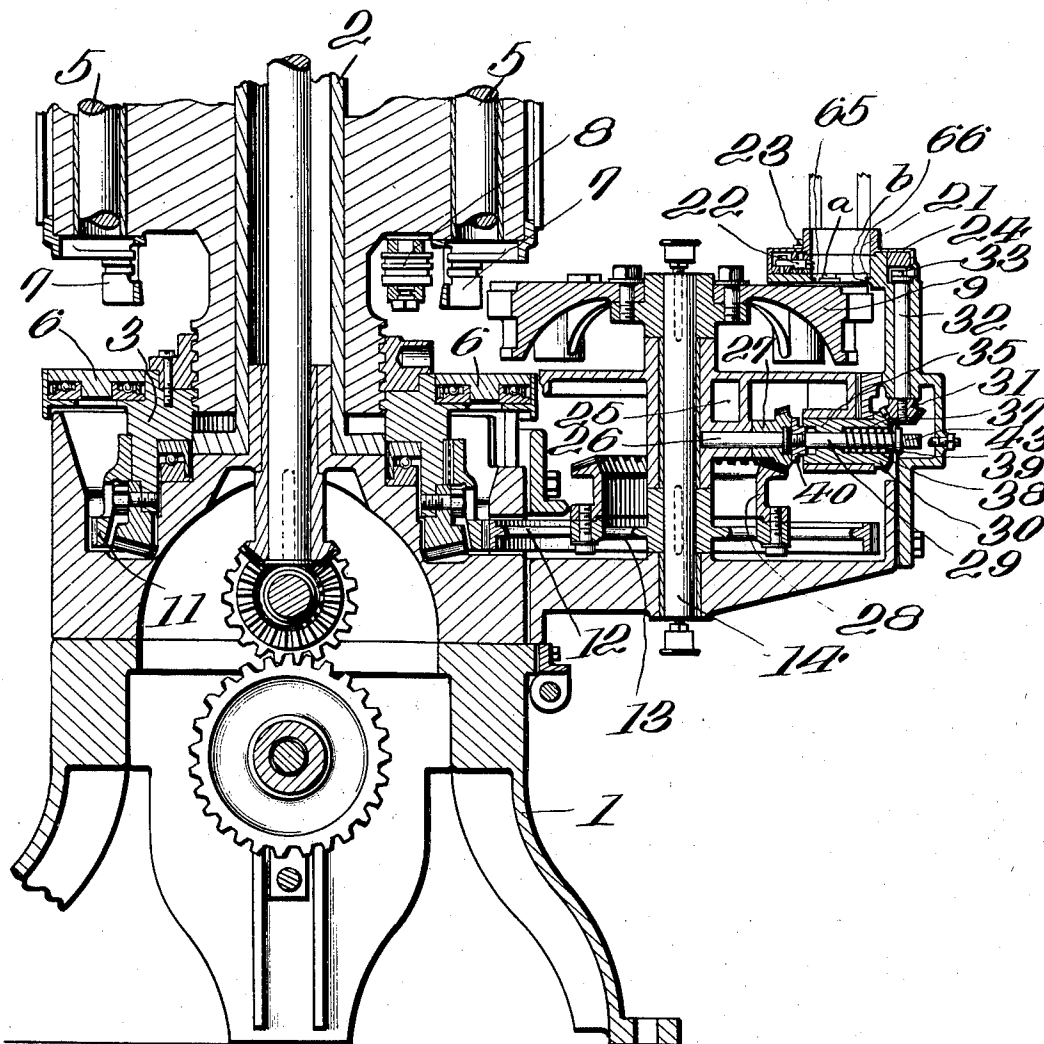
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CAN END APPLYING MECHANISM FOR CLOSING MACHINES

Filed July 5, 1923

5 Sheets-Sheet 2

FIG. 2.



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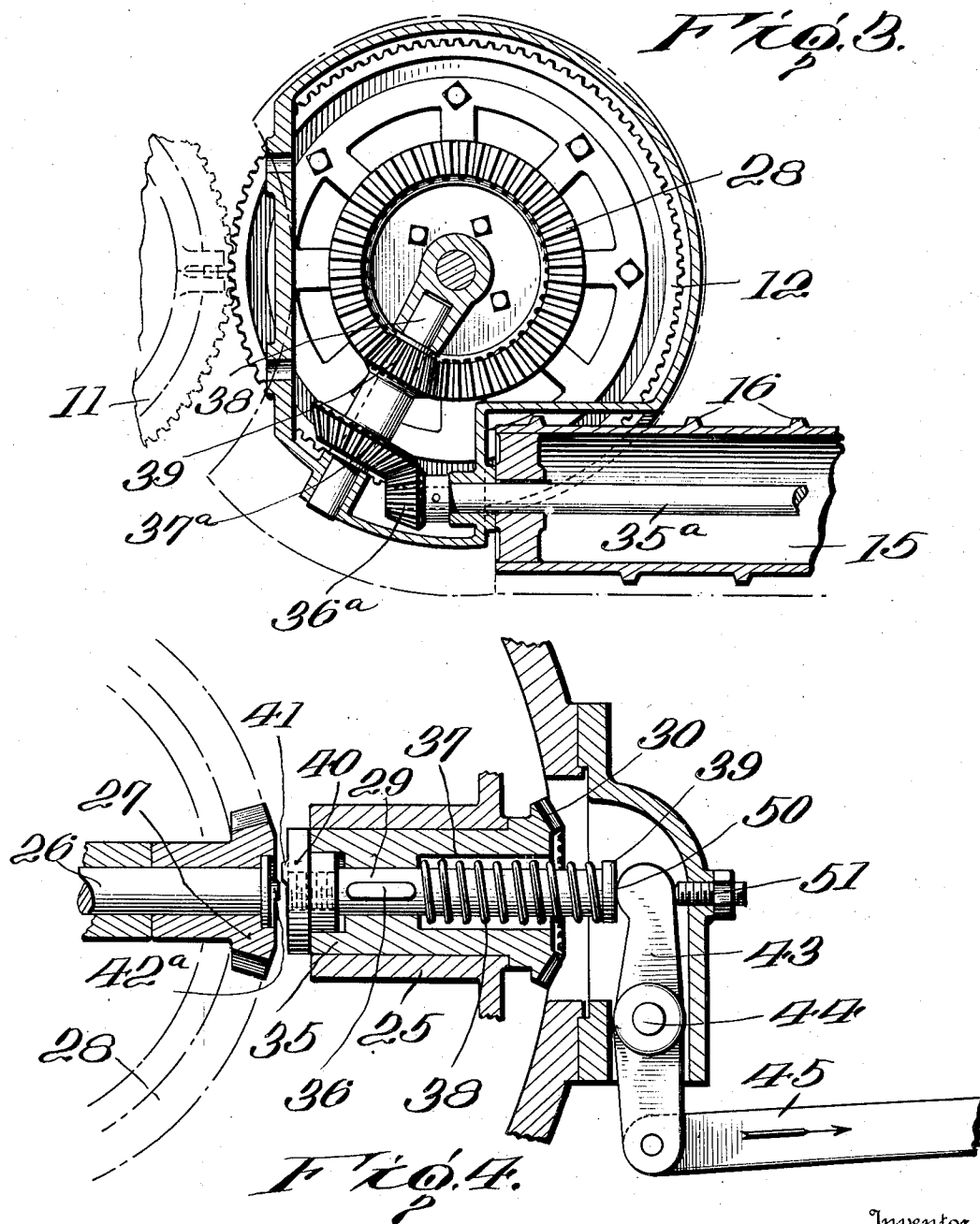
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CAN END APPLYING MECHANISM FOR CLOSING MACHINES

Filed July 5, 1923

5 Sheets-Sheet 3



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CAN END APPLYING MECHANISM FOR CLOSING MACHINES

Filed July 5, 1923

5 Sheets-Sheet

FIG. 5.

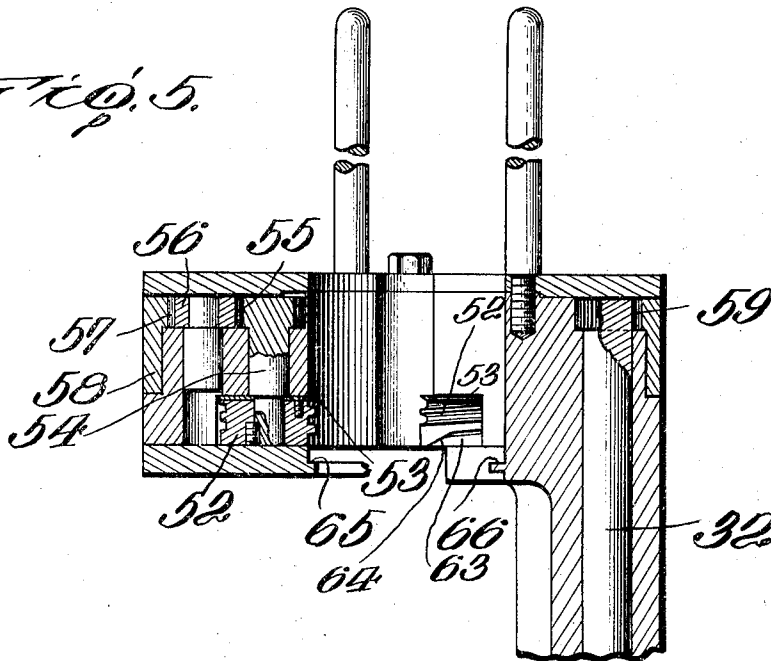
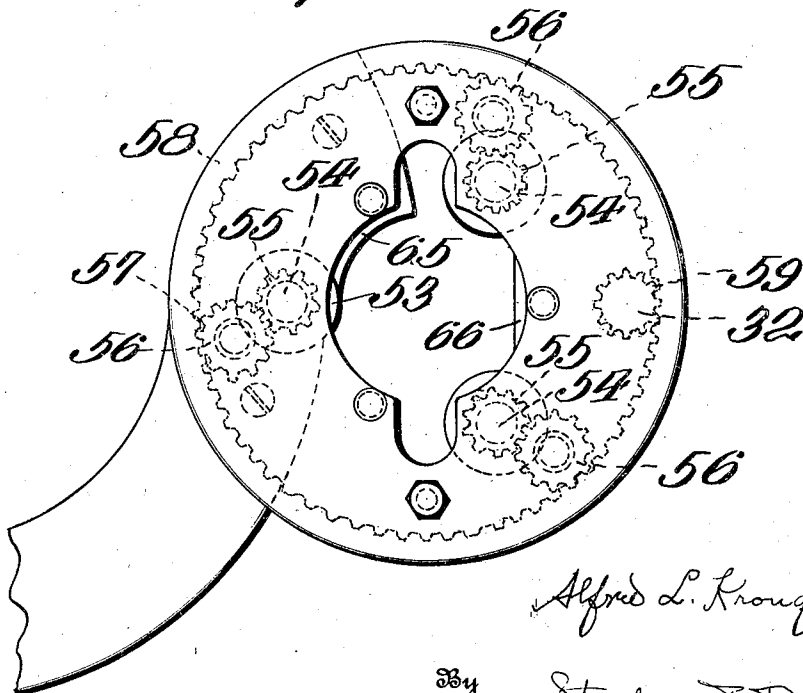


FIG. 6.



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CAN END APPLYING MECHANISM FOR CLOSING MACHINES

Filed July 5, 1923

5 Sheets-Sheet 5

FIG. 7.

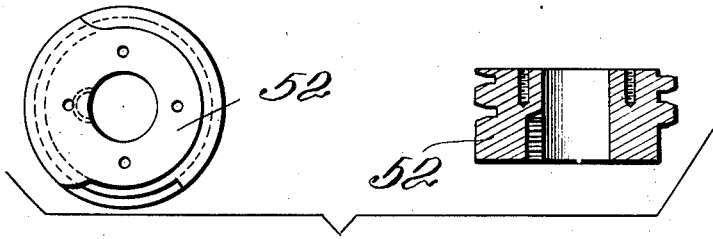


FIG. 8.

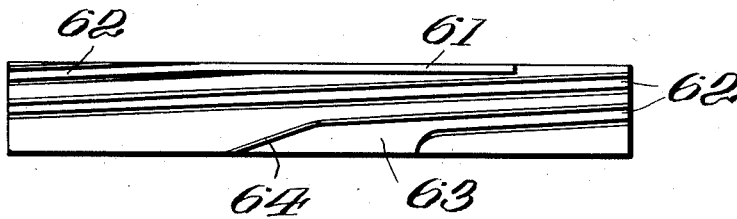
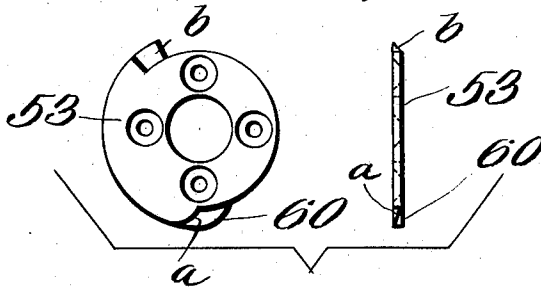


FIG. 9.



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CAN-END-APPLYING MECHANISM FOR CLOSING MACHINES.

Application filed July 5, 1923. Serial No. 649,519.

The invention relates to new and useful improvements in can end feeding and applying devices, and more particularly to devices for applying can ends to filled cans preparatory to closing the same.

An object of the invention is to provide a traveling turret operating to feed filled cans into a closing machine with a supporting ledge on to which the can ends are fed, one at a time, with cooperating means for moving the can ends outwardly on the supporting ledge over the filled cans as the filled cans are placed one after another in the closing machine.

A further object of the invention is to provide a traveling turret of the above type with half molds for receiving, conveying and timing the filled cans into the closing machine.

A still further object of the invention is to provide placing ribs adjacent each half mold, which cooperate with the means for moving the can ends outwardly for centering the can ends over the can.

A still further object of the invention is to provide a can applying means of the above type with can end feeding means for feeding can ends, one at a time, from a stack on to the supporting ledge back from, but adjacent the half molds.

Another object of the invention is to provide a can end feeding means wherein the releasing means is operated from a continuously rotating shaft, with means for disconnecting said releasing means from the shaft when there is no can to be closed.

Still another object of the invention is to provide a can end feeding mechanism wherein the can ends are positively stripped from the stack and are carried downwardly to a point well beneath the stack where they are released so that the ends will drop on to the guideway therefor.

These and other objects will in part be obvious and will in part be hereinafter more fully disclosed.

In the drawings which show by way of illustration one embodiment of the invention—

Figure 1 is a plan view showing in part a closing machine having my improved can end applying means embodied therein;

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1, the upper portion of the closing machine being omitted;

Fig. 3 is a horizontal sectional view showing the manner of driving the drum;

Fig. 4 is an enlarged sectional view showing the means for permitting the can end releasing mechanism to be disconnected from its actuating means;

Fig. 5 is a view partly in section showing another and my preferred form of can end releasing means;

Fig. 6 is a plan view of the parts shown in Fig. 5;

Fig. 7 is an enlarged plan view and a sectional view through one of the cover feed screws;

Fig. 8 is a development of the screw shown in Fig. 7, and

Fig. 9 is a plan view of the separator used in conjunction with each feed screw.

The invention is shown as applied to a closing machine which is formed with a continuously rotating series of seaming stations. This closing machine may be of any well-known type, but the closing machine shown and described in the patent granted to Kronquest & Taliaferro, August 3, 1920, No. 1,348,650, is the type of closing machine which I prefer to use. This machine has been modified by applying thereto my improved means for feeding the filled cans and the can ends to the seaming stations, and also, by increasing the number of seaming stations. I prefer to use the machine in connection with a filling machine, and to this end have provided a rotating drum having a spirally wound thread thereon, which drum takes the cans while they are still in the filling machine and without losing the timing of the cans and feeds these filled cans forward in a straight line into my improved can feeding and can end applying turret, which in turn delivers the cans with the can ends placed directly above the same to the seaming stations. The type of machine just referred to, to which I have applied my improvements, is shown, described and claimed in the co-pending application filed by Taliaferro & Kronquest, June 28, 1921, Serial No. 481,126, and I do not claim herein this substantially straight line feed from a continuously rotating filling machine, to a continuously rotating seaming machine without losing timed control of the filled cans.

My improved can feeding and can end applying means consists broadly in a rotating turret provided with a series of half molds

into which the cans are delivered in succession by the feeding drum. These half molds carry the can forward and cooperate with the half molds in the closing machine for centering the cans underneath the seaming heads and rounding the same up to receive the can ends. The can ends are placed in a stack located above the rotating turret, and associated with the stack is means for feeding the can ends, one at a time, on to a supporting ledge forming a part of the rotating turret. This supporting ledge contains the half molds for feeding and timing the cans. The can ends are dropped onto the supporting ledge some distance back from the periphery of the supporting ledge, and the can end is supported entirely by this ledge. Adjacent each half mold is a placing rib. The can ends are dropped on to the ledge in front of these placing ribs. The forward or outer end of the placing rib terminates at the edge of a can end seating recess extending about the half mold and concentric with the half mold. Mounted above the turret and held from rotation, is a cam. The can ends are placed on the supporting ledge in front of this stationary cam, and as the turret rotates, these can ends are caused to contact with the stationary cam which forces the can ends outwardly along the placing ribs. The stationary cam is so constructed as to have moved the can end outwardly so that it is centered over the filled can in the half mold just as the filled can reaches the closing station and is centered underneath the seaming head. In other words, the turret is entirely free of any supporting rail at the outer edge of the can ends, and the can ends are carried entirely by this supporting ledge and are not forced outwardly far enough so as to fall off the ledge, but merely so as to become centered over the can in the half mold just as the filled can is centered underneath the seaming head at the closing station. By doing away with all outer rails for supporting the can end, I have greatly simplified the machine and have avoided any overhanging rail underneath which the filled can has to pass on its way to the closing machine.

The can ends are dropped, one at a time, on to this supporting ledge by a cover releasing means which is operated by the continuously rotating shaft, and devices are provided for disconnecting said cover releasing means from said shaft and connecting the same thereto only when there is a filled can entering the turret and closing machine to be closed.

Referring more in detail to the drawings, it is not thought necessary to describe at length the closing machine, but reference may be made to the Taliaferro & Kronquest Patent No. 1,348,650 for a more detailed disclosure thereof and a full understanding

of the machine. It may be noted that the closing machine includes a supporting base 1 having a central standard 2 on which is mounted a rotating turret 3. This rotating turret 3 in the present embodiment of the invention is provided with eight closing stations indicated at 4. Each of these closing stations includes a chuck spindle 5 carrying a chuck. Cooperating with the chuck is a rotatable support 6 on which the can is centered by means of a half mold 7. It is understood, of course, that there is a half mold 7 for each rotatable support. This half mold 7 cooperates with the half mold on the rotating turret in rounding up the can body and in centering the same underneath the chuck preparatory for the securing of the can end to the can body. For this purpose, there are provided seaming rolls, one of which is indicated at 8 in Fig. 2 of the drawings. It will be understood, of course, that this seaming means may be modified without departing from the spirit of the invention as set forth in the appended claims.

The filled cans are placed on the rotating supports by a rotating turret 9. This rotating turret 9 is provided with a series of half molds 10. It is understood that the turret has as many molds as there are seaming stations, and the turret travels at the same speed as the seaming stations. The filled can feeding turret 9 is rotated from the turret of the closing machine. The turret of the closing machine is provided with a gear 11 which meshes with a gear 12 (see Fig. 3) adapted to rotate about the axis of the turret 9, and this gear 12 is mounted in an extension 13 carried by the main frame. The gear 12 is splined on to a shaft 14 mounted in a suitable bearing in the frame extension 13. The turret 9 is splined to this shaft. The gears 11 and 12 are of the same diameter and likewise the turret of the closing machine is of the same diameter as the turret of the can feeding machine, so that these two turrets travel at the same speed. The filled cans are fed to this rotating turret 9 by a feeding drum 15 having a spiral thread 16 thereon. The cans are moved along a suitable support by this spiral thread and the thread is so wound as to increase the speed of the filled can and properly time the cans into the half molds formed in the turret 9. The outer guide rail 17 holds the cans in the half molds so that the filled cans are carried forward from the drum into the closing machine and are properly spaced for the stations of the closing machine, and these half molds at each can feeding turret 9 cooperate with the half molds at each seaming station in rounding up the can preparatory to the seating of the can end therein.

The rotating turret 9 is provided with a relatively smooth wide ledge 18, and these

half molds 10 are formed in the outer edge of this supporting ledge. At the upper end of the half molds, there is a can end seating recess 19 which is concentric to the half mold. 5 Adjacent this can end seating recess and at the rear side thereof, considering the direction of travel of the turret, which is clockwise, is a rib 20. There is a rib for each half mold in the turret 9. The can ends are placed in the stack 21, and the can ends are supported by a series of releasing dogs 22, which are three in number, as herein shown. These dogs are pivoted at 23, and the dogs are oscillated by an oscillating ring 24. This 15 ring oscillates or swings the dogs so as to gradually lower the stack and release one can end at a time. The can end releasing means described above is of the type shown in the patent granted to Sedwick, July 20, 20 1920, Number 1,347,295.

Instead of the can end releasing means above described, I have provided a new and improved form of releasing and feeding means which I prefer to use. This releasing and feeding means is shown in Figures 25 5 to 9, inclusive. Said means comprises a plurality of feed screws, preferably three, each of which is positively driven, and a separator which is attached to each feed screw. The separator positively separates the lowermost can end from the remaining can ends in the stack and drops the same on to the feed screws. The feed screws take up the can end and positively carry it forward 35 or downward to a point well below the stack where it is dropped from the feed screws on to the runway for the can ends. This can end feeding mechanism will be described in detail later.

I have also provided an improved means for releasing the can ends only when there is a can to be closed. Mounted in the supporting frame 25 of the can feeding turret, is a fixed stub shaft 26 carrying a loose 45 bevel gear 27. This bevel gear 27 meshes with a gear 28, which is fixed to the gear 12 and rotates therewith. This gear 27 rotates a shaft 29 which carries a bevel gear 30 and the bevel gear 30 meshes with a gear 50 31 carried by a vertical shaft 32 which carries a crank 33. This crank 33 as it rotates will operate to oscillate the releasing ring 24 and will release one can end for each rotation of the shaft 32.

Of course, in this type of machine, no can end should be fed when there is no can to be closed, and in order to operate the can end releasing mechanism only when a filled can enters the machine to be closed, I have 60 provided means whereby the shaft 29 is disconnected from the operating gear 27 therefor, and thus the can end releasing mechanism put out of operation. The gear 27 is mounted so as to rotate on the shaft 26. The gear 30 is carried by a sleeve

35. The shaft 29 is mounted in said sleeve and is splined thereto by means of a suitable spline 36 so that the shaft 29 and sleeve 35 turn as one, but said shaft 29 is capable of endwise movement in the sleeve. Said sleeve 70 is formed with a recess 37 and a spring 38 surrounding the shaft 29 is in part disposed in said recess 37 and bears against the inner end of the recess in the sleeve. The outer end of this spring bears against a collar 39 75 fixed on the end of the shaft 29. On the inner end of the shaft 29 there is a clutch member 40. This clutch member 40 is provided with a projecting dog 41 which is adapted to be moved into the path of one of 80 the dogs 42^a carried by the shaft 26. The spring 38 normally moves the shaft 29 endwise so as to disconnect the clutch dogs and this disconnects the can end releasing means from the rotating shaft 26. A lever 43 is 85 provided, which lever is pivoted at 44 and is connected at its lower end to a link 45 which in turn is connected to an arm 46 pivoted at 47. This arm 46 is rigidly connected to an arm 48 provided with an adjustable 90 shoe 49 which lies along the path of travel of the cans as they enter the turret associated with the closing machine. The filled can indicated in broken lines in Fig. 1 is just engaging this shoe which will rock the arm 95 46 to the right as viewed in this figure, and this through the link 45 will pull on the lower end of the lever 43 and cause the upper rounded end 50 thereof to bear against 100 the end of the shaft 29 and move the same to the left, compressing the spring 38 and causing the clutch dogs to be engaged. The clutch dogs are held in engagement for a sufficient length of time to release one can end only. When the shaft 29 is moved to 105 the right, as viewed in Fig. 4, the upper end of the lever engages a set screw stop 51, and this determines the right amount of movement for the clutch pin shaft 29. By this means, the entering filled cans connect the 110 releasing mechanism for the can ends to the continuously rotating shaft and insure the release of one can end only, and said release at the proper time in the rotation of the turret. The vertical shaft 32 rotates once 115 to every two rotations of the shaft 26. I have, therefore, provided the gear 27 with two diametrically opposed dogs, while the gear 40 has only one dog. The dog 40 may connect with either of the dogs on the gear 27 120 and a half rotation of the gear 27 will rotate the shaft 32 one complete rotation.

Secured to the bracket carrying the stack holder is a stationary cam 24. This cam 24 125 is secured to said bracket by means of screws 34^a (see Fig. 1). The cam lies over the top of the turret and is held slightly spaced therefrom as indicated in Fig. 2. At the outer edge of this cam directly beneath the 130 stack holder is a ledge *a*. At the other side

of the stack holder there is a ledge *b*. The can end when dropped from the stack rests on these ledges *a* and *b* temporarily until the ribs 20 engage the can ends and move them forward. While a rib is moving a can end forward, the stationary cam moves the can end outwardly along the rib and it will drop on to the turret ledge and will be carried along with the rotating turret. The cam 24 does not move and is so shaped that it pushes the can ends outwardly on the supporting ledge. In Fig. 1 of the drawings, the can ends are indicated at *e* and the filled cans are indicated at *f*. The edge of the rib is parallel to a radial line passing centrally through the can end and the center of the turret, and said rib is so positioned that when the can end is moved outwardly it will pass directly over the center of the filled can in the half mold in the feeding-in turret. The cam is so shaped as to gradually move the can end outwardly and finally center the can end over the filled can. This centering of the can end over the filled can is not accomplished, however, until the filled can is beneath the chuck of the closing machine. At this time, the can end will be supported in the can end seat formed by the can end seating recess in the half mold of the closing machine and the feeding-in turret.

It is to be noted that the can end is supported entirely by the turret, and that there is no outer rail for holding the outer edge of the can end, and consequently no overhead rail underneath which the filled can would have to pass. It will also be noted that the can end applying means is very simple and positive in its action, and insures that a can end will be properly placed over the filled can preparatory to the closing of the same.

The drum 15 is driven by a shaft 35^a which carries a bevel gear 36^a with a bevel gear 37^a carried by a shaft 38, and this shaft 38 in turn carries a bevel gear 39 which meshes with the gear 28.

In Figures 5 to 9, inclusive, I have shown my preferred form of can end releasing and feeding means. Said feeding means consists of three feed screws which are similar in construction and have been numbered alike 52 in the drawings. Associated with each feed screw is a separator 53 which operates to separate the lowermost can end from the stack and direct it into the feed screw. The separator is rigidly carried by the feed screw and the feed screw is in turn mounted on a short vertical shaft 54, there being a supporting shaft for each feed screw.

At the upper end of each shaft is a gear 55 which meshes with a gear 56, and the gears 56 mesh in turn with an internal gear 57 on a ring 58 mounted to rotate freely on the stack holder. On the upper end of the shaft 32 in this form of the invention, there

is a gear wheel 59 which meshes with the internal gear 57, and thus it is that the ring is rotated, and as the ring rotates, it will in turn rotate the gears 55 and 56, and each of the shafts 54, and this will impart rotation to the feed screw and separators.

The separator as shown in Fig. 9, is cut away circumferentially from the point *a* to the point *b*. The diameter of the cut away part is such that the can ends can pass thereby, while the diameter of the remainder of the separators is such that the stack will rest thereon. This separator is substantially the thickness of the curled edge of the can end so that when the lowermost can end passes down into the cut away portion of the separators, the beveled off entering portion of the separator indicated at 60 will pass between the lowermost can end and the remainder of the stack, and raise the stack on to the separators, and thus force the lowermost can end forward into the feed screw. The feed screw as clearly shown in Fig. 8, where the screw has been shown in development, has a cut away portion 61 on to which the lowermost can end is delivered by the separator, and this cut away portion leads into a spiral groove 62 which finally terminates in a cut away portion 63 at the lower side of the feed screw. It is understood that the feed screws are all alike, and the can end will be carried forward by this spiral groove, a small portion of each can end extending into one of the grooves. This will forcibly carry a can end forward and separate it some distance from the lower end of the stack. When the space 63 is reached, the can end can drop freely on to the supporting ledge below the stack. If for any reason it does not drop quickly, then the inclined face 64 will engage it and force it down. After the can end has dropped on to the supporting ledge therefor, it will be carried forward as described above in connection with the other form of releasing mechanism.

It will be noted in the drawings that the spiral groove in each feed screw encircles a screw more than once. As a result, two can ends will be carried by the feed screws in spaced relation to each other, and be positively fed forward at the same time. This insures a proper separation of the can ends from the stack and a positive carrying of the can ends forward to a position well down close to the runway or guides on which the can ends drop and prevents any possible rebound of the can ends which might result in a wedging of the can end in the runway. In other words, the can ends are picked off from the stack holder and are in a sense, laid in the runways therefor as distinguished from dropping them as has been done heretofore. The runways referred to are indicated at 65 and 66 in the drawings.

These runways are very short and the turret which carries the can ends forward moves directly beneath these relatively thin supporting guides or runways so that the ribs 20 on the turret will move the can ends along the guides, and as the can ends leave the guides, they will drop on to the turret as described above.

It is thought that the operation of my machine will be perfectly obvious from the description which has been given. The filled cans are brought to the machine by the drum, which not only positively moves the cans, but times the cans into the rotating turret. This drum is located so as to feed the cans in a line which is tangential of the feeding-in turret, so that the cans have no side movement as they enter the turret, and the cans gradually partake of the curved path of travel of the turret and are thus placed in the closing machine without any sudden lateral movements or without any sudden stopping or forward movements, and therefore, with little or no spilling. The can ends are released one at a time whenever there is a filled can to be closed, and these can ends are positively moved forward on the traveling supporting ledge, and are positively moved outwardly on said supporting ledge and centered over the cans to be closed.

It is obvious that minor changes in the details of construction may be made without departing from the spirit of the invention as set forth in the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters-Patent, is—

1. A can end applying mechanism for closing machines including a traveling turret for feeding the filled cans to the closing machine, said turret having a supporting ledge for the can ends, and means for moving the can ends outwardly on the ledge over the filled cans as the filled cans are placed in the closing machine, means for feeding can ends, one at a time from the stack on to said supporting ledge, said cover feeding means including cover releasing means, a continuously rotating shaft for operating the same, and means actuated by the filled cans for connecting said releasing means to said shaft when there is a can to be closed.

2. A can end applying mechanism for closing machines including a traveling turret for feeding the filled cans to the closing machine, said turret having a supporting ledge for the can ends, and means for moving the can ends outwardly on the ledge over the filled cans as the filled cans are placed in the closing machine, said traveling turret having means for timing the filled cans and placing the same in the closing machine, means for feeding can ends one at a time from a stack on to said supporting ledge,

said cover feeding means including cover releasing means, a continuously rotating shaft for operating the same, and means actuated by the filled cans for connecting said releasing means to said shaft when there is a can to be closed.

3. A can end applying mechanism for closing machines including a traveling turret for feeding the filled cans to the closing machine, said turret having a supporting ledge for the can ends, and means for moving the can ends outwardly on the ledge over the filled cans as the filled cans are placed in the closing machine, said turret having half molds for timing the filled cans and placing the same in the closing machine, and means for feeding the cans one at a time on to the supporting ledge, said cover feeding means including cover releasing means, a continuously rotating shaft for operating the same, and means actuated by the filled cans for connecting said releasing means to said shaft when there is a can to be closed.

4. The combination with a closing machine, a support along which the filled can is moved into the closing machine, means for moving the can along said support including a rotating turret located above the support for the cans, said turret having a ledge operating as the sole support for the covers, and stationary means above said turret adapted to engage the can ends as the turret rotates to gradually force the can ends outwardly over the filled cans, said stationary means being so shaped as to place the can ends centrally over the can as it reaches the closing machine.

5. The combination with a closing machine, a support along which the filled can is moved into the closing machine, means for moving the can along said support including a rotating turret located above the support for the cans, said turret having a ledge operating as the sole support for the covers, and stationary means above said turret adapted to engage the can ends as the turret rotates to gradually force the can ends outwardly over the filled cans, said stationary means being so shaped as to place the can ends centrally over the can as it reaches the closing machine, said turret having half molds for timing the filled cans and placing the same in the closing machine.

6. The combination with a closing machine, a support along which the filled can is moved into the closing machine, means for moving the can along said support including a rotating turret located above the support for the cans, said turret having a ledge operating as the sole support for the covers, and stationary means above said turret adapted to engage the can ends as the turret rotates to gradually force the can ends outwardly over the filled cans, said stationary means being so shaped as to place the

can ends centrally over the can as it reaches the closing machine, and placing means cooperating with the means for moving the can ends outwardly for centering the can ends over the cans.

7. The combination with a closing machine, a support along which the filled can is moved into the closing machine, means for moving the can along said support including a rotating turret located above the support for the cans, said turret having a ledge operating as the sole support for the covers, and stationary means above said turret adapted to engage the can ends as the turret rotates to gradually force the can ends outwardly over the filled cans, said stationary means being so shaped as to place the can ends centrally over the can as it reaches the closing machine, and means for feeding can ends one at a time from a stack on to said supporting ledge.

8. The combination with a closing machine, a support along which the filled can is moved into the closing machine, means for moving the can along said support including a rotating turret located above the support for the cans, said turret having a ledge operating as the sole support for the covers, and stationary means above said turret adapted to engage the can ends as the turret rotates to gradually force the can ends outwardly over the filled cans, said stationary means being so shaped as to place the can ends centrally over the can as it reaches the closing machine, and means for feeding can ends one at a time from a stack on to said supporting ledge, said cover feeding means including cover releasing means, a continuously rotating shaft for operating the same, and means actuated by the filled cans for connecting said releasing means to said shaft when there is a can to be closed.

9. The combination with a closing machine, a support along which the filled can is moved into the closing machine, means for moving the can along said support including a rotating turret located above the support for the cans, said turret having a ledge operating as the sole support for the covers, and stationary means above said turret adapted to engage the can ends as the turret rotates to gradually force the can ends outwardly over the filled cans, said stationary means being so shaped as to place the can ends centrally over the can as it reaches the closing machine, said turret having half molds for timing the filled cans and placing the same in the closing machine, and placing means cooperating with the means for moving the can ends outwardly for centering the can ends over the cans.

10. The combination with a closing machine, a support along which the filled can is moved into the closing machine, means for moving the can along said support in-

cluding a rotating turret located above the support for the cans, said turret having a ledge operating as the sole support for the covers, and stationary means above said turret adapted to engage the can ends as the turret rotates to gradually force the can ends outwardly over the filled cans, said stationary means being so shaped as to place the can ends centrally over the can as it reaches the closing machine, said turret having half molds for timing the filled cans and placing the same in the closing machine, placing means cooperating with the means for moving the can ends outwardly for centering the can ends over the cans, and means for feeding can ends one at a time from a stack on to said supporting ledge.

11. The combination with a closing machine, a support along which the filled can is moved into the closing machine, means for moving the can along said support including a rotating turret located above the support for the cans, said turret having a ledge operating as the sole support for the covers, and stationary means above said turret adapted to engage the can ends as the turret rotates to gradually force the can ends outwardly over the filled cans, said stationary means being so shaped as to place the can ends centrally over the can as it reaches the closing machine, said turret having half molds for timing the filled cans and placing the same in the closing machine, placing means cooperating with the means for moving the can ends outwardly for centering the can ends over the cans, means for feeding can ends one at a time from a stack on to said supporting ledge, said cover feeding means including cover releasing means, a continuously rotating shaft for operating the same, and means actuated by the filled cans for connecting said releasing means to said shaft when there is a can to be closed.

12. A can end applying mechanism for closing machines comprising a stack holder, releasing means associated with the stack holder for releasing the can ends one at a time, a continuously rotating shaft, and means for connecting said rotating shaft to said releasing means when there is a can to be closed so that a can end will be released from said stack for said can.

13. A can end feeding mechanism for closing machines comprising a stack holder, an operating ring and releasing means associated with the stack holder for releasing the can ends one at a time, a rotating shaft having a connection with said ring for operating the same, a second continuously rotating shaft, and means controlled by the entering cans for connecting the first-named rotary shaft to said second-named continuously rotating shaft whenever a can end is to be released.

14. A can end feeding mechanism for closing machines including a stack holder, releasing means for releasing the can ends one at a time, a rotatable shaft for actuating said releasing means, a continuously rotating shaft, and devices between said continuously rotating shaft and said shaft for actuating said releasing means for connecting said two shafts, said devices including a sleeve shaft connected to said shaft for actuating the releasing means, an endwise movable shaft in said sleeve shaft which is in alinement with the continuously rotating shaft, a spring for moving said shaft endwise in the sleeve, clutch members intermediate the ends of the endwise movable shaft and the continuously rotating shaft, and means controlled by the filled cans for moving said shaft endwise against the tension of the spring for bringing the clutch members into engagement for releasing the can end.
15. A can end feeding mechanism for closing machines including a stack holder, releasing means for releasing the can ends one at a time, a rotatable shaft for actuating said releasing means, a continuously rotating shaft, and devices between said continuously rotating shaft and said shaft for actuating said releasing means for connecting said two shafts, said devices including a sleeve shaft connected to said shaft for actuating the releasing means, an endwise movable shaft in said sleeve shaft which is in alinement with the continuously rotating shaft, a spring for moving said shaft endwise in the sleeve, clutch members intermediate the ends of the endwise movable shaft and the continuously rotating shaft, and means controlled by the filled cans for moving said shaft endwise against the tension of the spring for bringing the clutch members into engagement for releasing the can end.
- In testimony whereof, I affix my signature.

ALFRED L. KRONQUEST.