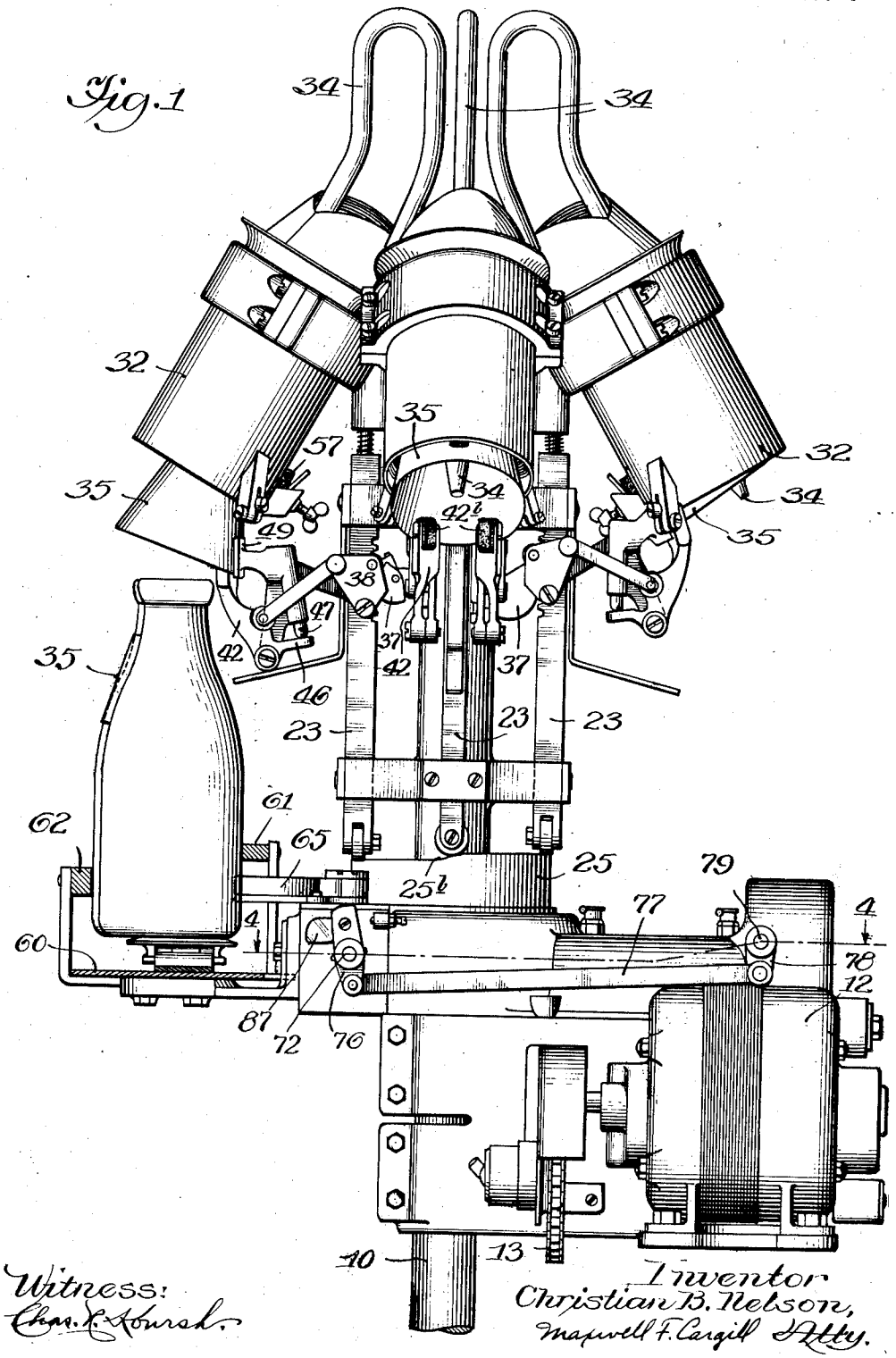
Aug. 28, 1934. C. B. NELSON 1,971,576

BOTTLE COLLARING MACHINE

Filed Oct. 2, 1933 7 Sheets-Sheet 1

Fig. 1



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Aug. 28, 1934. C. B. NELSON 1,971,576

BOTTLE COLLARING MACHINE

Filed Oct. 2, 1933 7 Sheets-Sheet 2

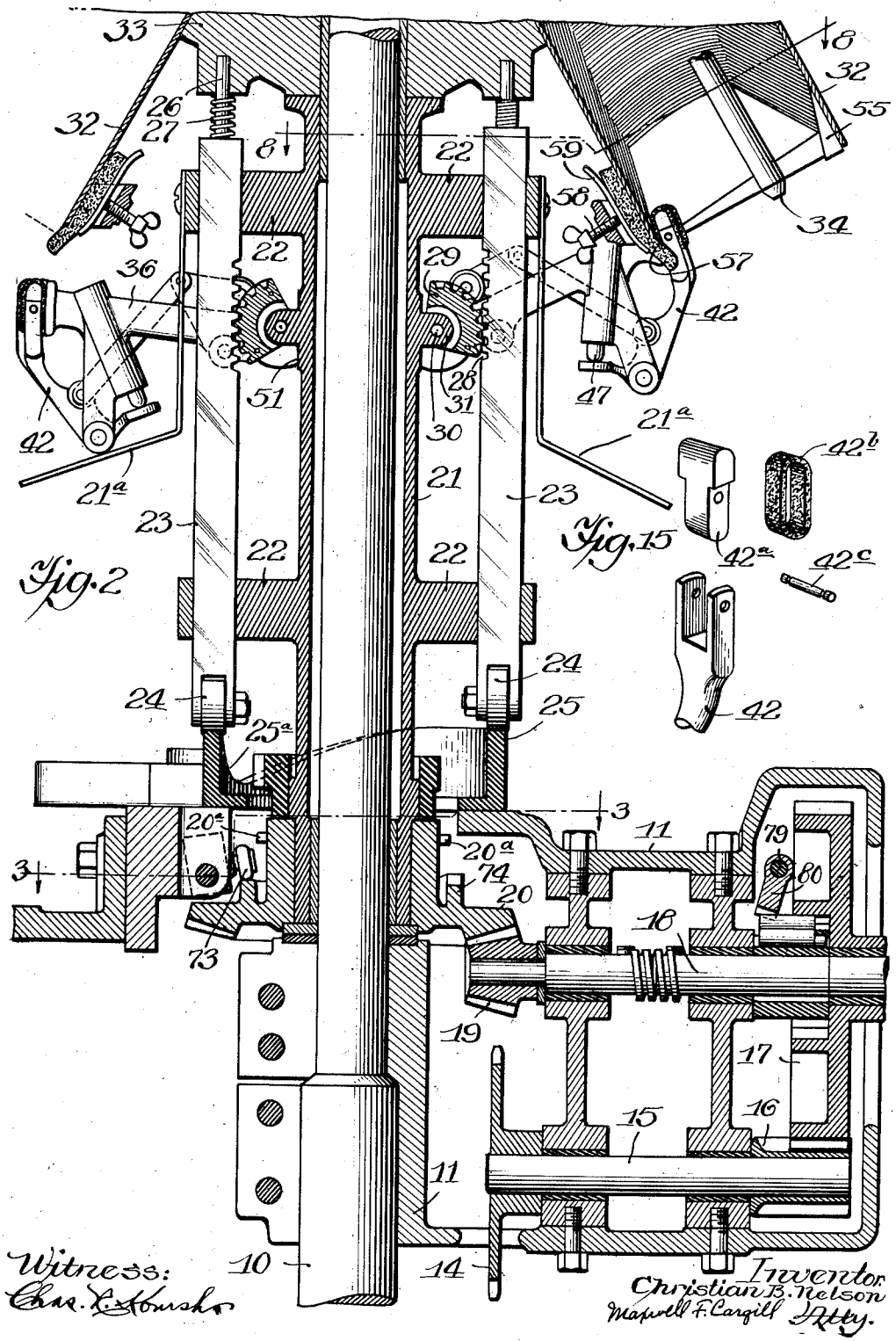


Fig. 2

Fig. 15

Witness:
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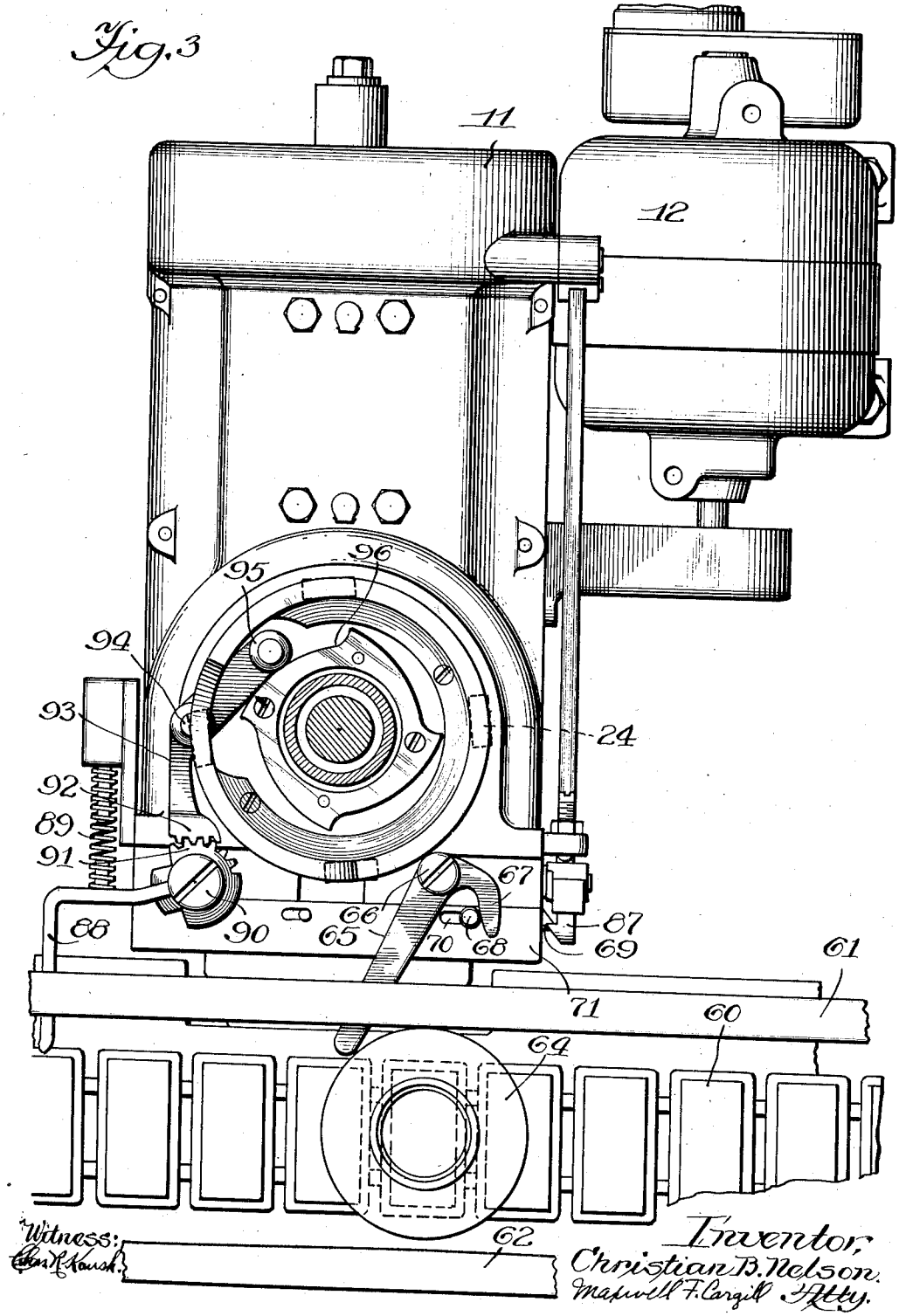
Inventor
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Maxwell F. Cargill Atty.

Aug. 28, 1934. C. B. NELSON 1,971,576

BOTTLE COLLARING MACHINE

Filed Oct. 2, 1933 7 Sheets-Sheet 3

Fig. 3



Aug. 28, 1934. C. B. NELSON 1,971,576

BOTTLE COLLARING MACHINE

Filed Oct. 2, 1933 7 Sheets-Sheet 4

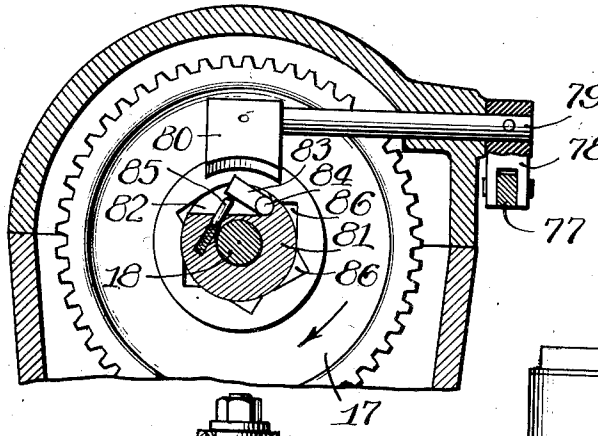


Fig. 5

Fig. 4

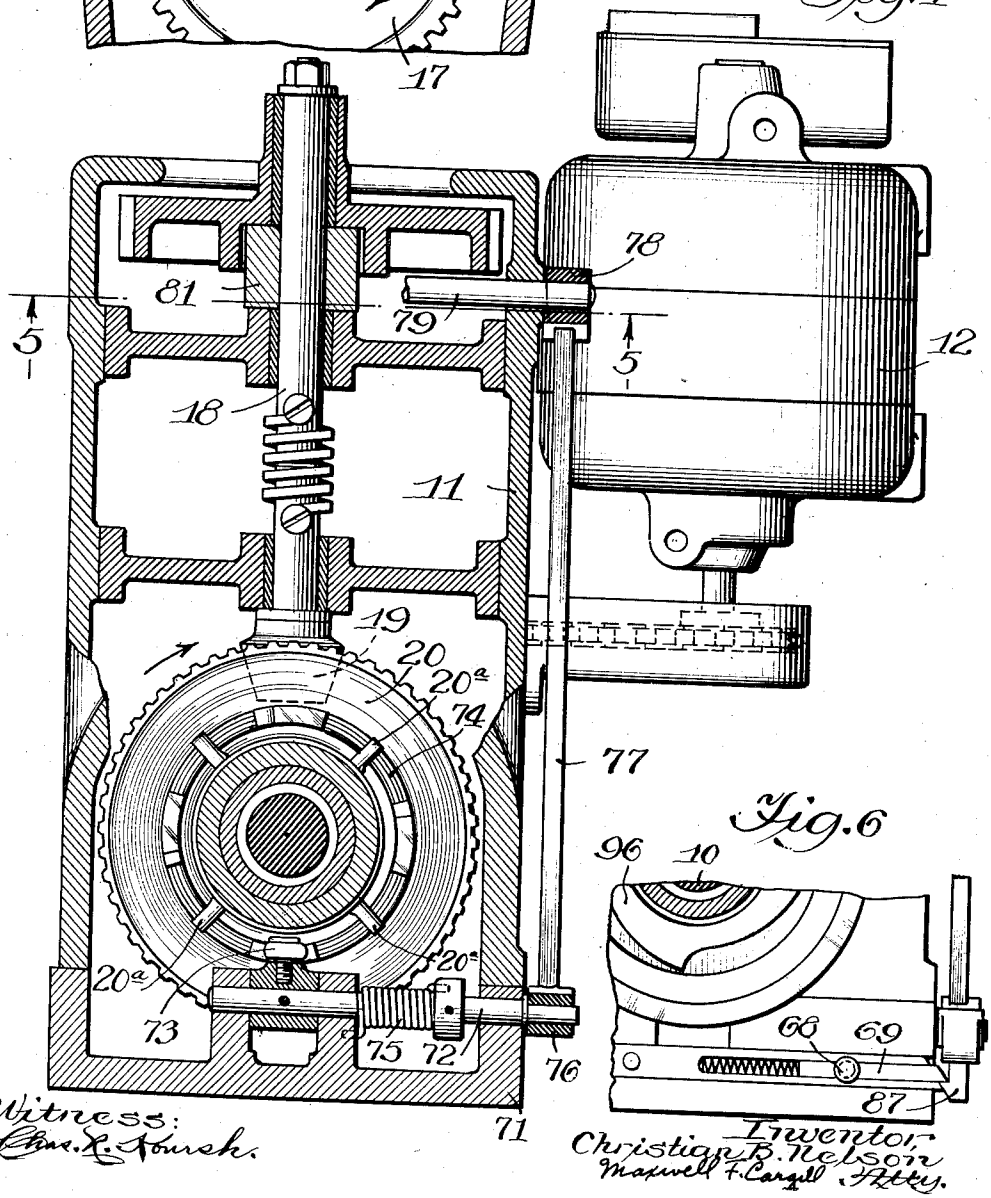


Fig. 6

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Aug. 28, 1934. C. B. NELSON 1,971,576

BOTTLE COLLARING MACHINE

Filed Oct. 2, 1933 7 Sheets-Sheet 5

Fig. 7

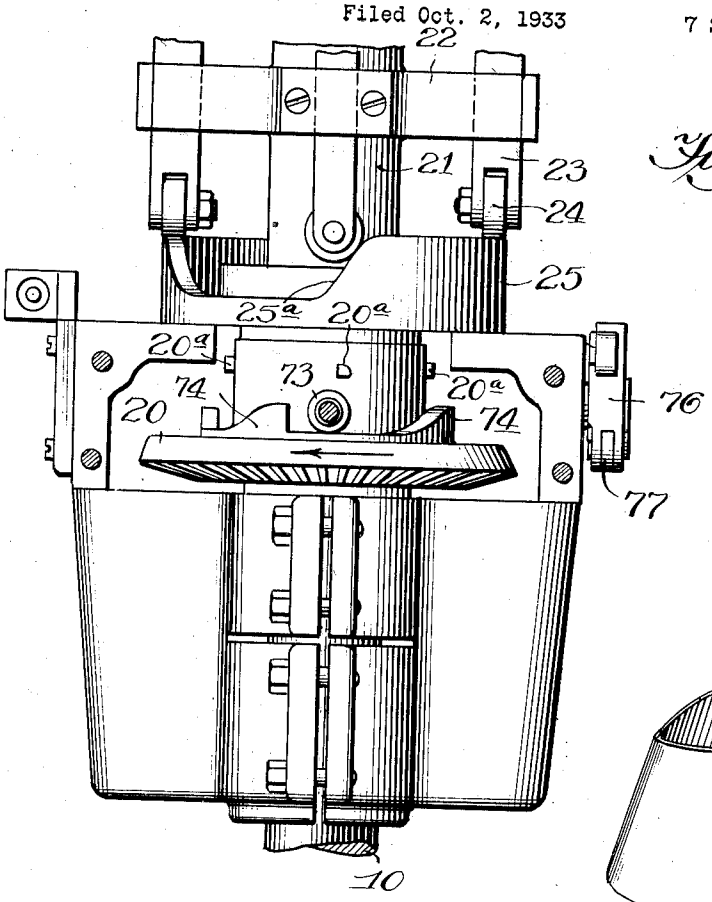


Fig. 16

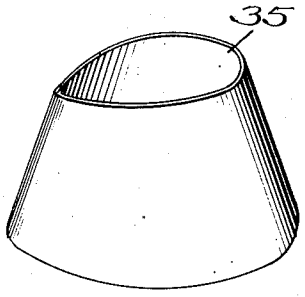
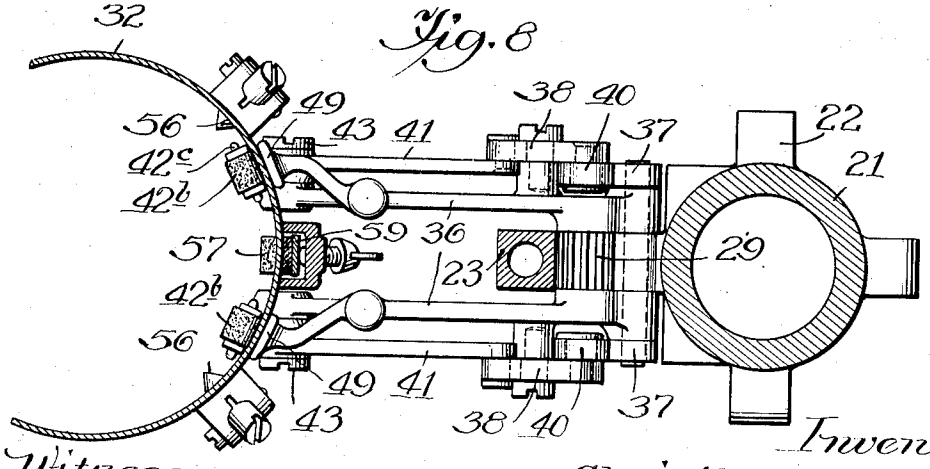


Fig. 8



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Aug. 28, 1934. C. B. NELSON 1,971,576

BOTTLE COLLARING MACHINE

Filed Oct. 2, 1933 7 Sheets-Sheet 6

Fig. 9

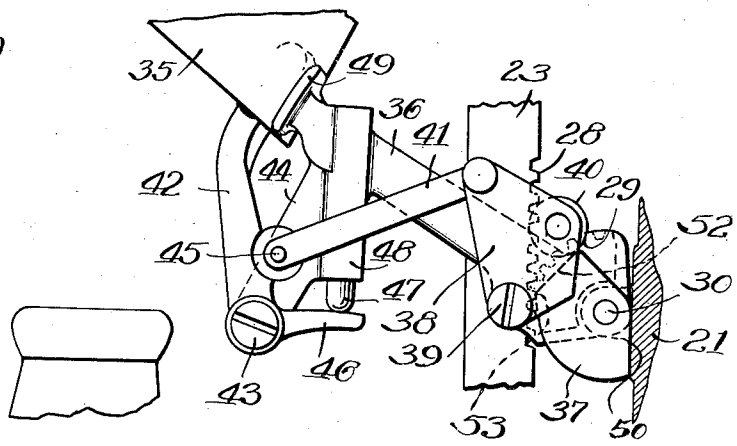


Fig. 10

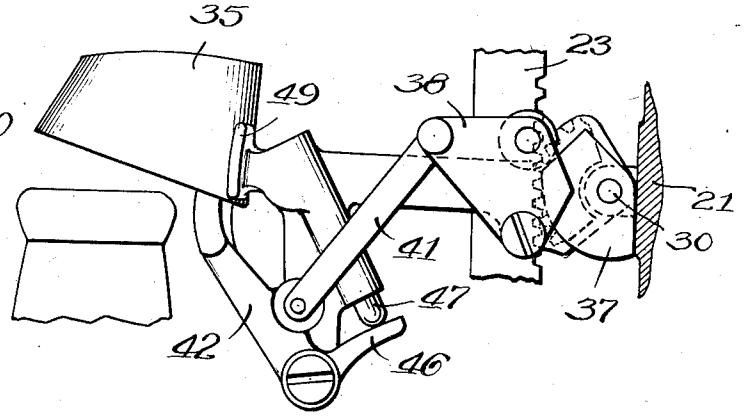
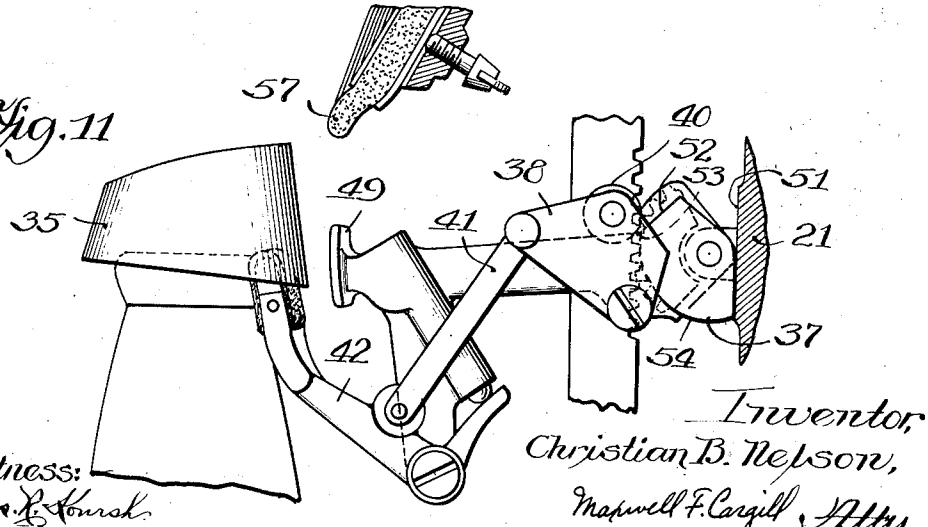


Fig. 11



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Aug. 28, 1934. C. B. NELSON 1,971,576

BOTTLE COLLARING MACHINE

Filed Oct. 2, 1933 7 Sheets-Sheet 7

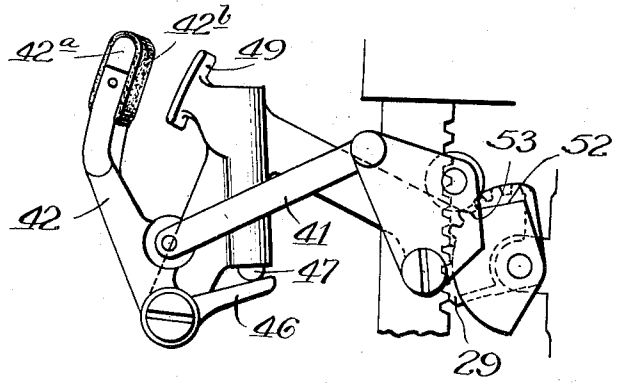


Fig. 14

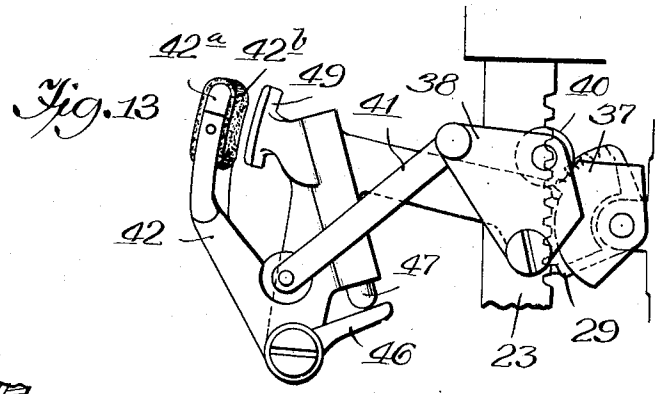
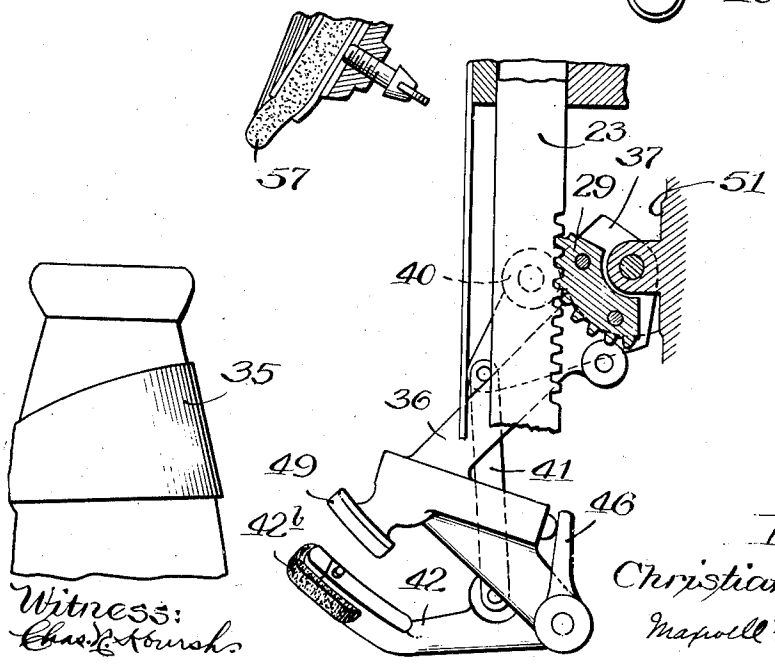


Fig. 13

Fig. 12



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Patented Aug. 28, 1934 1,971,576

UNITED STATES PATENT OFFICE

1,971,576

BOTTLE COLLARING MACHINE

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Application October 2, 1933, Serial No. 691,785

21 Claims. (Cl. 216—13)

This invention relates to bottle collaring machines.

Paper collars carrying advertising matter thereon have been developed for use on bottles of milk and cream distributed by dairy companies and since distribution of such advertising costs nothing after the collars have been placed on the bottles ready for delivery, it has been recognized that advertisement by such medium can be made profitable if the cost of placing the collars on the bottles can be kept sufficiently low.

Large dairy companies fill and distribute thousands of bottles of milk and cream daily, and the cost of placing collars by hand on the bottles is such that this available medium of advertising or distribution of information to the customers of the large dairy companies has not been utilized as extensively as is possible.

An important object of the invention, therefore, is to provide a machine for placing preformed collars on bottles, the machine being automatic in operation and requiring attention only in supplying collars thereto from time to time during the operation of the apparatus.

Another object of the invention is to provide automatic mechanism for placing collars on bottles as the same travel along a conveyor in either regularly or irregularly spaced relation, the individual collar positioning movements of the mechanism being controlled by each bottle as it is moved into predetermined position with respect to the machine.

Another object of the invention is to provide a machine of the class described which may be operatively associated with a conventional bottle conveyor and is adapted to place the collar on the bottles as the latter are moved in the normal manner at the bottling plant, as for example, from the bottle filling and capping machine to the loading or packing station.

A further object of the invention relates to the provision of a machine having a plurality of associated collar magazines and collar extracting and positioning members which are moved in succession into operative position for placing collars one at a time over bottles moving uninterruptedly past the machine on a conveyor.

Other objects of the invention relate to various features of construction and arrangement of parts which will be apparent from a consideration of the following specification and accompanying drawings, wherein:

Fig. 1 is an elevation of a machine embodying the present improvements.

Fig. 2 is a vertical sectional view thereof.

Fig. 3 is a horizontal view partially in section taken on line 3—3 of Fig. 2.

Fig. 4 is a horizontal sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a vertical section taken on line 5—5 of Fig. 4.

Fig. 6 is a fragmentary plan view of a portion of the clutch controlling mechanism.

Fig. 7 is a broken elevation illustrating two cams and associated parts.

Fig. 8 is a sectional view somewhat enlarged, taken on line 8—8 of Fig. 2.

Figs. 9 to 14 inclusive are progress views of one of the collar extracting and positioning mechanisms.

Fig. 15 is a perspective of one of the collar extracting fingers with parts shown in detailed relation.

Fig. 16 is a perspective view of a paper collar of the type adapted to be handled by the present improvements.

In the drawings, 10 is a stationary shaft which may be supported by any approved means such as a standard, not shown. Secured to the shaft is a housing 11 at one side of which is mounted an electric motor 12 which by means of a chain 13 drives a sprocket 14 carried by one end of the shaft 15 suitably journaled within the housing 11.

The opposite end of the shaft 15 is provided with a drive pinion 16 which in turn operates a gear 17 mounted on the shaft 18. A clutch mechanism is provided for effecting a driving relation between the gear 17 and the shaft 18 as hereinafter described.

The left hand end of the shaft 18 as viewed in Fig. 2 carries a beveled pinion 19 which meshes with the gear 20 which may be splined or otherwise secured to the rotatable tube or support 21.

The member 21 is provided with a number of radially extending arms 22 through which pass bars or rods 23 having rollers 24 at their lower ends which travel on the upper surface of the cam ring 25. Thus as the support 21 is rotated, the members 23 will be moved vertically or reciprocated by the stationary cam 25.

The upper ends of the members 23 are recessed and receive guide pins 26 around which are disposed springs 27 which tend to force the members 23 downwardly. Each of the members 23, four of which are employed in the present embodiments of the improvements, is provided with a tooth or rack section 28 which meshes

with a segmental gear 29 pivotally attached as at 30 to ears 31 carried by the member 21.

By means of the up and down movement of the members 23 as determined by the cam 25, each of the collar extracting and positioning members hereinafter described, is actuated.

The four collar holding magazines 32 are carried by the head 33 and rotate with the support 21. Extending into each of the magazines 32 is a looped tube 34 which assists in the supporting of the collars 35. The upper ends of the magazines proper are open as shown in Fig. 1, and thus a nest of collars may extend up along the tube 34 to the upper bend thereof as suggested in Fig. 1. The collars are formed of paper and are somewhat frusto-conical in shape, as shown in Fig. 16. These collars carry any suitable advertising matter thereon or information to the consumer of the milk contained in the bottles on which the collars are placed.

The nest of collars may be inserted into each magazine from the lower open end thereof and will be held in place against accidental displacement by means hereinafter described.

The collar extracting mechanisms, one of which is provided for each magazine, are actuated by the respective racks 28 as the members 23 are moved by the cam 25.

In Figs. 9 to 14 inclusive, progress views of the collar extracting and positioning mechanism are shown. As shown in Fig. 1, the extracting mechanism for each magazine is of dual construction, while in the progress views it has been shown in single form.

Each mechanism comprises an arm 36 which is mounted on the pivot 30 previously referred to. A floating cam 37 is also mounted on the pin 30 and is of the shape shown particularly in Fig. 9. A plate 38 is pivoted at 39 to the arm 36 and carries a cam roller 40. The plate is also connected by means of a link 41 to the finger 42 which is pivoted at 43 to a depending portion 44 of the arm 36. The link 41 is pivoted at 45 to the finger 42. This finger is provided with rearwardly extending lever 46, with which contacts a spring pressed plunger 47 carried in a recess in the depending portion 48 of the arm 36. The arm 36 is provided with a contact member 49 which cooperates with the free end of the finger 42 in extracting the lower collar from a nest of collars carried in one of the magazines.

In Fig. 9 the mechanism is shown in initial collar engaging position. In this figure it will be noted that the flat surface 50 of the cam 37 is in contact with the flat portion 51 of the member 21, (see Fig. 2).

The arm 36 has a segmental gear 29 which, as previously mentioned, meshes with the teeth 28 of the member 23. As the member 23 moves downwardly under the action of its spring 27 when permitted by the cam 25, the arm 36 is swung counter-clockwise, as viewed in Fig. 9. During the initial portion of this swinging movement the cam 40 rolls on the flat face 52 of the cam 37 and as it approaches the point 53 of the cam, the plate 38 is moved to the position shown in Fig. 10.

This movement of the arm draws the collar 35 from the nest of collars but without releasing the gripping action of the fingers 42 and the shoe 49 from the collar. As the collar is moved downwardly over the end of a bottle, as shown in Fig. 11, the movement of the roller 40 over the point 52 of the cam 37 causes the plate 38 and the link 41 to move the finger 42 to releasing position with respect to the shoe 49. This permits the collar to drop on the shoulder of the bottle. The strippers 21*a*, carried by the member 21 momentarily engage the adjacent edges of the collars 35 during the descent of the same upon the bottles when the fingers 42 are in releasing position to permit the fingers to clear the collars as the fingers rotate from collar releasing position. As the strippers 21*a* move away from the bottles the collars settle upon the shoulders of the same.

The cam 37 which is freely movable upon the pin 30 will be swung in a clockwise direction by the pressure of the roller 40 thereon as it passes over the high point 52 of the cam to the curved face 54 thereof, (see Figs. 12 to 14 inclusive). The finger 42 is still held in open position against the action of the spring pressed plunger 47 as the mechanism is moved to the lowermost position by the reciprocating bar 23, as shown in Fig. 12. When the member 23 starts upwardly and thus moves the arm 37 and associated mechanism in clockwise direction, the link 41 and plate 38, being controlled by the roller 40 and the cam 37, remain in open position until the roller passes over the high point 52 of the cam. This final stage of the return movement of the mechanism is shown in Fig. 14. As the roller rides over the point 53 on to the upper flat face 52 of the cam, the latter moves clockwise of the position shown in Fig. 9, and permits the plunger 47 to move the finger 52 into engagement with the next collar held in the respective magazine.

To prevent the collars from slipping from the magazine, a wedge shaped stop 55 is positioned at the lower edge of the magazine 32 remote from the fingers 42. As the lowermost collar is drawn from the magazine, the collar will be bent inwardly slightly and freely slip past the member 55, while the remaining collars will remain in position.

To further assist in holding the collars against accidentally sliding from the magazine, two adjustable collar seats or pins 56 are provided, as shown in Fig. 8, which project slightly inwardly of the magazine to add slight friction to the collars. A rubber friction member 57 is located between the dual arms 42, as shown in Figs. 2 and 8, with the lower end thereof pressed, by means of a screw 58 acting on a suitably shaped plate 59, slightly beyond the inner periphery of the magazine 32. The rubber offers some resistance to the sliding of the collars past the same. Thus by means of the wedge member 55 and the collar seats 56 and the friction member 57, the collars are prevented from sliding from the magazine. When one has been removed by the positioning mechanism above described, the rest may gravitate until stopped by these various stop devices, when the lowermost collar will be in position ready to be grasped by the fingers 42 upon return of the positioning mechanism.

As shown in Fig. 15, the free ends of the fingers 42 are bifurcated and are adapted to carry therebetween the pivoted member 42*a* over which may be placed a rubber band 42*b*. The upper portions of the bifurcated ends of the member 42 are slightly curved, which permits the member 42*a* to rock slightly on the pivot 42*c*. Thus when the arm 42 has been moved into the position shown in Fig. 9, the member 42*a* can adjust itself into frictional contact with the lowermost collar in the nest, and draw it from the magazine when the positioning mechanism moves from the position of Figure 9 to that of Figure 10.

As shown in Fig. 3 the improvements are designed to be employed in conjunction with a conveyor mechanism 60. This conveyor may be a conveyor which carries the filled and capped bottles from a filling machine, for example, and adjacent the collaring mehcanism. The conveyor is provided with a pair of guide rails 61 and 62, between which must pass the bottles carried on the conveyor. As each bottle approaches the position of the bottle 64 shown in Fig. 3, it will engage a trip lever 65 which is pivoted as at 66, and which carries an arm 67 adapted to engage a stud 68 carried by the spring pressed catch 69. The stud 68 projects through a slot 70 in the housing 71, as shown in Fig. 3.

Also carried in the housing is a rock shaft 72 journaled in the housing 71, and which is provided with a cam roller 73 which is arranged to travel on the cam ring 74, shown in Figures 2 and 4 as being integral with the gear 20.

Thus as the gear operates, the roller 73 will ride up the cams of the ring 74, see Fig. 7, and place tension on the spring 75 carried on the shaft 72. Thus as the roller 73 is moved vertically by the cam surfaces of the cam 74, the shaft 72 will be oscillated.

The forward end of the shaft 72 carries an arm 76 which is connected by a link 77 with an arm 78 mounted on the end of the rock shaft 79 which extends into the housing 11.

The inner end of the shaft 79 carries a clutch disengaging member 80, see Figs. 2 and 5.

The shaft 18 carries a collar 81 having a recess 82 within which a clutch member 83 is pivotally mounted as at 84. A spring pressed plunger 85 tends to move the detent or clutch member 83 outwardly to the position shown in Fig. 5. This detent may seat in any one of the six notches 86 formed in the collar 81. The operating face of the clutch controlling member 79 is formed on an arc of the radius of the collar 81.

Thus, when the shaft 79 is rotated to move the member 80 into contact with the collar 81, the detent 83 will be pressed out of any one of the notches 86 in which it may have been positioned and disengage the clutch, thus stopping the driving of the shaft 18 and the collar positioning mechanism.

This disengagement of the clutch will take place whenever the catch arm 65 is permitted to return to the position shown in Fig. 3.

Thus should bottles coming from the bottle capping machine be spaced more than a given distance apart, the spring pressed catch 69 will move to the position shown in Fig. 6, and engage the latch 87 carried at the end of the arm 76 and hold the clutch disengaging member 80 against the surface of the collar 81 to hold the clutch 83 inoperative. When, however, the next bottle comes along on the conveyor 60, the arm 65 will again be moved in a clockwise direction, the clutch released, and the mechanism thrown into operation. As a bottle 64 passes to the left from the position shown in Fig. 3, it will come in contact with the retarding arm 88. This arm is provided with a spring 89 which tends to hold it in the position shown in Fig. 3, and is pivotally secured at 90 to the member 71.

A segmental gear 91 meshes with the teeth 92 of the cam arm 93 which is pivoted at 94, and carries a roller 95 at its opposite end. The roller 95 contacts with the cam surface of the cam 96 which, as shown in Fig. 2, is secured to the gear 20 and moves therewith.

The conveyor 60 should carry the bottles to the machine at a slightly greater speed than the rate at which the machine operates, and as the bottle strikes the arm 88 it is restrained momentarily, and caused to slip slightly along the carrier. It is at this moment that the cam 25, by means of the incline 25a shown in Fig. 2, permits the bar 23 to descend rapidly to actuate the collar positioning mechanism.

The continued rotation of the cam 96 moves the cam arm 93 counterclockwise, and thus moves the retarding arm 88 out of the path of the bottle to permit the same to move out of collaring position. Immediately after the bottle has cleared the arm 88 it is moved by the cam 96 back into position to retard the next bottle during the collaring operation. This arrangement assures that any bottle as it is about to receive the collar will be held in the precise position to receive the collar from the respective collar positioning mechanism.

As will be seen in Fig. 1, the collaring machine is positioned adjacent the conveyor 60 and the bottles move as from the filling and capping machine past the collaring machine. When the bottles are moving along the conveyor in closely spaced position the trip arm 65 is moved clockwise from the position shown in Fig. 3, and thus holds the catch 69 out of latching position with reference to the member 87.

The clutch operating member 80, see Fig. 5, will thus be held in inoperative position, and the motor will drive the machine continuously. As each bottle moves beyond the arm 65 it will be retarded slightly, if necessary, by the arm 88, to insure that it will be in position to receive the collar from whichever magazine is in the position of the left hand magazine shown in Fig. 1. As the bottle reaches the collar placing position, the roller 64 of the rod 23 descends the incline 25a of the cam 25 and actuates the respective arm 36 and associated mechanism to place the collar on the bottle as described above. The member 21 will be rotating continuously whenever the bottles are moving along the carrier in regular and closely spaced relation and as the rods 23 move up the incline of the cam 25 the arms 36 will be elevated into such position that the fingers 42 will engage the next collar in the magazine.

It will be understood, of course, that the machine is operated at a speed correlated to the speed of travel of the bottles along the conveyor. Thus if bottles coming from some filling and capping machines in large dairy plants operate at the rate of one hundred eight bottles a minute, the speed of the collaring machine can readily be given the corresponding capacity by providing the proper ratio to the sprocket 14 with reference to the drive sprocket on the motor shaft.

Should the bottles not come from the filling machine in regular order, as for instance should bottles be picked out of the line through failure to properly fill or cap the bottles, the spring actuated catch 69 will be moved to the position shown in Fig. 6, and engage the catch 87 and thus hold the clutch member 80 in operative position to interrupt the driving relation of the gear 17 with reference to the shaft 18.

When this de-clutching action takes place the cam roller 73 will be held in elevated position by the engagement of the catch 69 with the member 87, the spring 75 being under tension.

The momentum of the machine will carry the gear 20 only to the position wherein one of the radially extending studs or stops 20a will engage the roller, thus stopping the mechanism in the

position wherein the pawl 83 is held in depressed or inoperative position by the clutch operating member 80. When the next bottle engages the arm 65, however, the member 69 will be retracted to release the member 87 whereupon the spring 75 will effect the movement of the link 77 to the left as viewed in Fig. 1, and effect the movement of the clutch member 80 to inoperative position whereupon the pawl 83 engages the next notch 86 formed in the hub of the rotating gear 17.

As will be seen, the machine thus is controlled precisely by the bottles as they move along on the carrier 60 and do not continue to throw the collars upon the carrier if there are no bottles in position to receive the same.

In the de-clutching action above described, the roller 73 reaches one of the highest positions on the cam 74 just before the detent 83 moves under the clutch actuating member 80. If there is no bottle on the carrier 60 to hold the arm 65 and the catch 69 in inoperative position, the latter will at this instant engage the member 87 and hold the clutch operating member 80 in contact with the collar 81. The detent 83 in moving under the member 80 will be moved to inoperative position, and the clutch will be disengaged.

The almost simultaneous engagement of one of the stops 20*a* with the roller which is held in elevated position against the action of the spring 75 will stop the movement of the mechanism and cause the detent 83 to be confined beneath the member 80 against the action of its plunger 85. Thus by timing the arrival of the detent 83 as described, the clutch is not disengaged at each rotation of the gear 17, notwithstanding the fact that the member 80 is moved down into clutch disengaging position each time the roller 73 moves up on one of the high points of the cam 74.

The cam 25 has a slight incline 25*b* intermediate its highest point and the steep incline 25*a*. This results in the slight downward movement of the arms 36 to gradually move the engaged collar partially from the magazine. This position is illustrated in Fig. 1 where the intermediate collar placing mechanism is shown with the collar partially extracted from the magazine. In this position the collar is still firmly held by the fingers 42, ready to be moved down over the bottle with a rapid movement when the placing mechanism is in the left hand position shown in Fig. 1.

By the gradual extraction of the collar from the nest of collars, the remaining collars are not disturbed but are held in the magazine by the members 55, 56 and 57 as previously described.

The improvements have been described with particular reference to placing of collars on milk bottles, but it will be apparent that the principles of the invention may be employed for placing differently shaped collars on other types of bottles.

While I have shown and described an embodiment of my improvemets for the purpose of illustration, I do not wish to be restricted specifically thereto except as so limited by the appended claims.

I claim:

1. A bottle collaring machine comprising mechanism for holding conical collars, a conveyor for moving bottles to said machine and presenting the necks of the bottles toward the larger ends of the collars, means for engaging the margins of the larger ends of and removing collars from said mechanism and placing the same over the bottle necks, and trip mechanism actuated by the bottles on said conveyor for controlling the actuation of said means.

2. A bottle collaring machine comprising mechanism for holding pre-formed conical collars in nested relation, a conveyor for moving bottles to said machine and presenting the necks of the bottles toward the larger ends of the nested collars, means for removing collars from said mechanism and placing the same over the bottle necks, and trip mechanism actuated by the bottles on said conveyor for controlling the actuation of said means.

3. A bottle collaring machine comprising mechanism for holding pre-formed conical collars in nested relation, a conveyor for moving bottles to said machine and presenting the necks of the bottles toward the larger ends of the nested collars, means for removing collars from said mechanism and placing the same over the bottle necks, and trip mechanism actuated by the bottles on said conveyor for controlling the actuation of said means, said trip mechanism comprising an arm adapted to extend over said conveyor in the path of the bottles.

4. A bottle collaring machine comprising a collar magazine for holding conical collars in nested position with the larger ends of the collars downwardly, collar placing mechanism for selecting the lowermost collar from the nest of collars and placing the same on a bottle as the latter moves past said machine on a conveyor, means for actuating said mechanism, and means controlled by the bottles on said conveyor for regulating said actuating means.

5. The combination with a bottle conveyor of a bottle collaring machine comprising apparatus for holding conical collars nested with the larger ends of the collars downwardly, means for selecting collars one at a time from the lower part of said apparatus and placing the same on the bottles as the latter move into collaring position on said conveyor, actuating mechanism for said means, and means for synchronizing the actuation of said mechanism with the movement of successive bottles into collaring position.

6. The combination with a bottle conveyor of a bottle collaring machine comprising collar holding apparatus, means for selecting collars one at a time from said apparatus and placing the same on the bottles as the latter move into collaring position on said conveyor, actuating mechanism for said means, and means for synchronizing the actuation of said mechanism with the movement of successive bottles into collaring position, said synchronizing means comprising an automatically operated clutch mechanism for controlling said actuating mechanism.

7. The combination with a bottle conveyor of a bottle collaring machine comprising collar holding apparatus, means for selecting collars one at a time from said apparatus and placing the same on the bottles as the latter move into collaring position on said conveyor, actuating mechanism for said means, and means for synchronizing the actuation of said mechanism with the movement of successive bottles into collaring position, said synchronizing means comprising a clutch mechanism for controlling said actuating mechanism and provided with a controlling arm extending over said conveyor into the path of said bottles.

8. A bottle collaring machine comprising a collar magazine open at its lower end for supporting conical collars with their larger ends downwardly, means for restraining the movement of the collars through said end, and mechanism for engaging the larger ends of said collars one at a time and moving the same past said re-

straining means and placing the same on bottles moving adjacent said machine on a conveyor.

9. A bottle collaring machine comprising a collar magazine open at its lower end, means for restraining the movement of the collars through said end, and mechanism for engaging said collars one at a time and moving the same past said restraining means and placing the same on bottles moving adjacent said machine on a conveyor, said mechanism comprising spring actuated collar gripping means and a cam for controlling the gripping movements of said means.

10. A bottle collaring machine for placing collars on bottles moving adjacent said machine on a conveyor comprising a collar magazine open at the bottom for holding collars therein in nested relation and located at an elevation above the bottles to be collared, collar placing mechanism for successively engaging the lowermost collar in said magazine and placing the same on bottles moving on said conveyor, said mechanism comprising a vertically swinging arm, means for swinging said arm from upper to lower position in synchronization with respect to the movement of bottles on said conveyor, and cam controlled collar gripping means carried by said arm for engaging a collar in said magazine upon completion of the upward movement of said arm and extracting said collar and releasing the same upon the downward movement of said arm to collaring position.

11. A bottle collaring machine for placing collars on bottles on a conveyor comprising a rotatable member adapted to be positioned adjacent said conveyor, means for rotating said member, a plurality of collar magazines carried by said member, a collar extracting and positioning device for each magazine, means for controlling the movements of each of said devices, and means controlled by the bottles traveling on said conveyor for synchronizing the rotation of said rotatable member for successively moving said devices into collar placing position with respect to sueccssive bottles on said conveyor.

12. A bottle collaring machine for placing collars on bottles moving along a conveyor comprising a stationary vertical shaft, a rotatable member on said shaft, drive means for rotating the same, a plurality of collar magazines carried by said member, a collar extracting and positioning device on said member for each of said magazines, vertically reciprocable actuating members for moving said devices successively from collar extracting to collar positioning positions, a cam for controllng the movements of each of said actuating members, and a clutch mechanism controlled by bottles on said conveyor for regulating said drive means.

13. In a machine of the class described a vertically positioned rotatable member, driving means therefor, a plurality of collar magazines carried by said member, collar extracting and positioning devices on said member for each of said magazines, cam controlled means for actuating said devices in sequence as the same are moved by said member into predetermined collaring position with respect to a bottle conveyor located adjacent said machine, a clutch for said driving means having an operating member for effecting the engagement and disengagement of the same, and mechanism for actuating said clutch operating member to release said clutch to delay the operation of said devices upon failure of said carrier to deliver bottles to the collaring position at predetermined intervals.

14. In a machine of the class described a vertically positioned rotatable member, driving means therefor, a plurality of collar magazines carried by said member, collar extracting and positioning devices on said member for each of said magazines, cam controlled means for actuating said devices in sequence at the same are moved by said member into predetermined collaring position with respect to a bottle conveyor located adjacent said machine, a clutch for said driving means having an operating member for effecting the engagement and disengagement of the same, and mechanism for actuating said clutch operating member to release said clutch to delay the operation of said devices upon failure of said carrier to deliver bottles to the collaring position at predetermined intervals, said mechanism comprising a spring actuated catch for holding said clutch operating member in clutch disengaging position.

15. In a machine of the class described a vertically positioned rotatable member, driving means therefor, a plurality of collar magazines carried by said member, collar extracting and positioning devices on said member for each of said magazines, cam controlled means for actuating said devices in sequence as the same are moved by said member into predetermined collaring position with respect to a bottle conveyor located adjacent said machine, a clutch for said driving means having an operating member for effecting the engagement and disengagement of the same, and mechanism for actuating said clutch operating member to release said clutch to delay the operation of said devices upon failure of said carrier to deliver bottles to the collaring position at predetermined intervals, said mechanism comprising a spring actuated catch for holding said clutch operating member in clutch disengaging position and a catch releasing arm extending over said conveyor in the path of approaching bottles for actuation thereby for rendering the clutch operative.

16. A bottle collaring machine comprising a rotatable member, a plurality of collar magazines carried thereby, a collar extracting and positioning device for each of said magazines, cam controlled reciprocating members for actuating said devices in sequence as the same are moved by said rotatable member into predetermined collaring position with respect to an adjacent bottle conveyor, driving means for said rotatable member, a rotatable clutch for said driving means having a disengageable member, a clutch releasing member for effecting the disengagement of said clutch member within a given arc of rotation thereof, a cam controlled mechanism for moving said releasing member to and from operative position prior to the arrival of said clutch within said given arc, and spring actuated catch means for holding said releasing member in operative position to halt the operation of said devices upon failure of said conveyor to deliver bottles to collaring position at pre-determined intervals.

17. A bottle collaring machine comprising a rotatable member, a plurality of collar magazines carried thereby, a collar extracting and positioning device for each of said magazines, cam controlled reciprocating members for actuating said devices in sequence as the same are moved by said rotatable member into predetermined collaring position with respect to an adjacent bottle conveyor, driving means for said rotatable member,

a rotatable clutch releasing member for effecting the disengagement of said clutch member within a given arc of rotation thereof, a cam controlled mechanism for moving said releasing member to and from operative position prior to the arrival of said clutch within said given arc, spring actuated catch means for holding said releasing member in operative position to halt the operation of said devices upon failure of said conveyor to deliver bottles to collaring position at predetermined intervals, and a member adapted to extend over said conveyor for actuation by a bottle thereon approaching the collaring position for retracting said catch means and effecting the release of said clutch releasing member.

18. A machine of the class described comprising an arm, a support to which said arm is pivoted, a gear segment carried by said arm, a reciprocable rack meshing with said segment for arcuately swinging said arm, a spring resisted finger pivotally attached to said arm for gripping an object between the same and a portion of said arm, a floating cam coaxially pivoted with reference to said arm, a link mechanism pivotally connected to said arm and finger, and a roller carried by said mechanism and contacting with said roller for controlling the movement of said finger to and from gripping position as said arm is moved arcuately.

19. A machine of the class described comprising an arm, a support to which said arm is pivoted, means for swinging said arm arcuately, a spring resisted finger pivoted to said arm for gripping an object between the same and a portion of said arm, a link mechanism pivoted to said arm and finger, a roller carried by said mechanism for controlling the movement of said finger relatively to said arm, and a floating cam pivoted coaxially with respect to said arm for guiding said roller, said cam being shaped to effect the gripping action of said finger and arm portion upon the completion of the stroke of said arm in one direction and during a portion of the opposite stroke and to release said finger during the remainder of the cycle of movement of said arm.

20. The combination with a bottle conveyor of a bottle collaring machine comprising a rotary series of collar holding devices, means for selecting collars one at a time from said devices and placing the same on the bottles as the latter are moved into collaring position by said conveyor, mechanism for actuating said means, and mechanism for synchronizing the actuation of said mechanism with the movement of successive bottles into collaring position.

21. The combination with a bottle conveyor of a bottle collaring machine comprising a rotary series of magazines for holding conical collars in nested relationship with their larger ends downwardly, and mechanism for removing collars one at a time from said nested series respectively and placing said collars on bottles adjacent thereto.

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