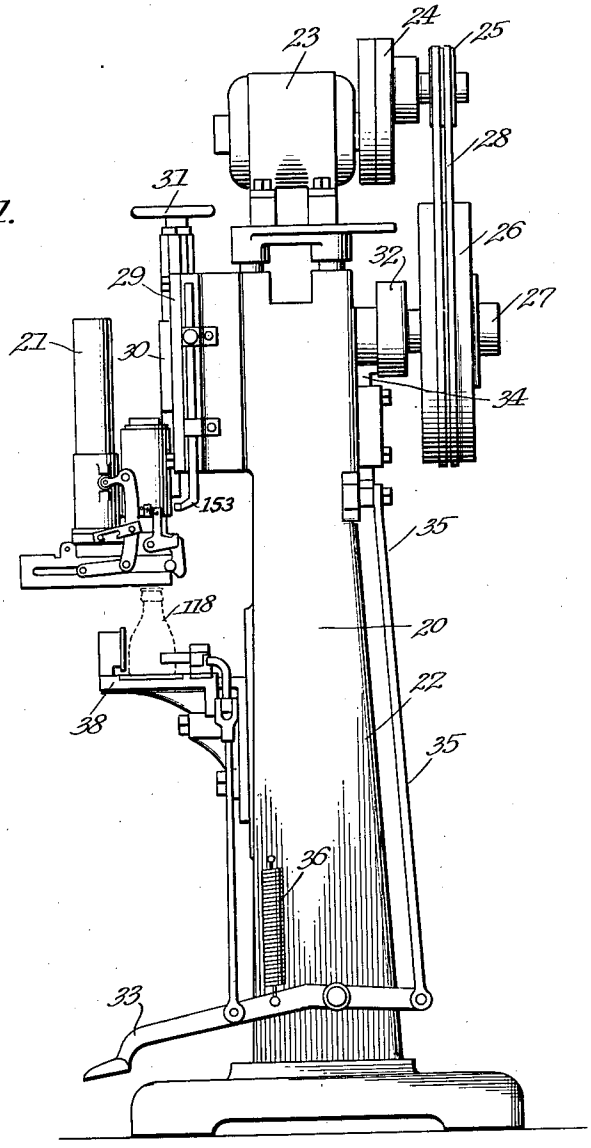
April 24, 1934. G. J. HUNTLEY ET AL 1,956,218

CAPPING HEAD

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Fig. 1.



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CAPPING HEAD

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Fig. 3.

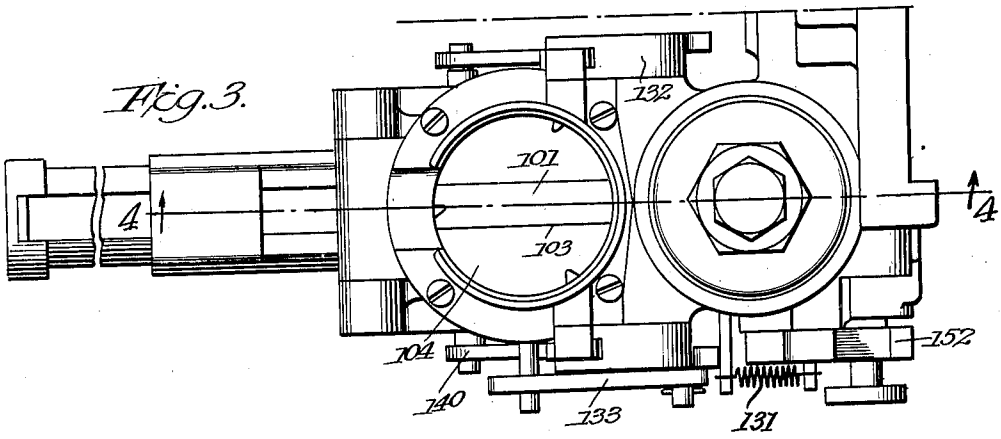
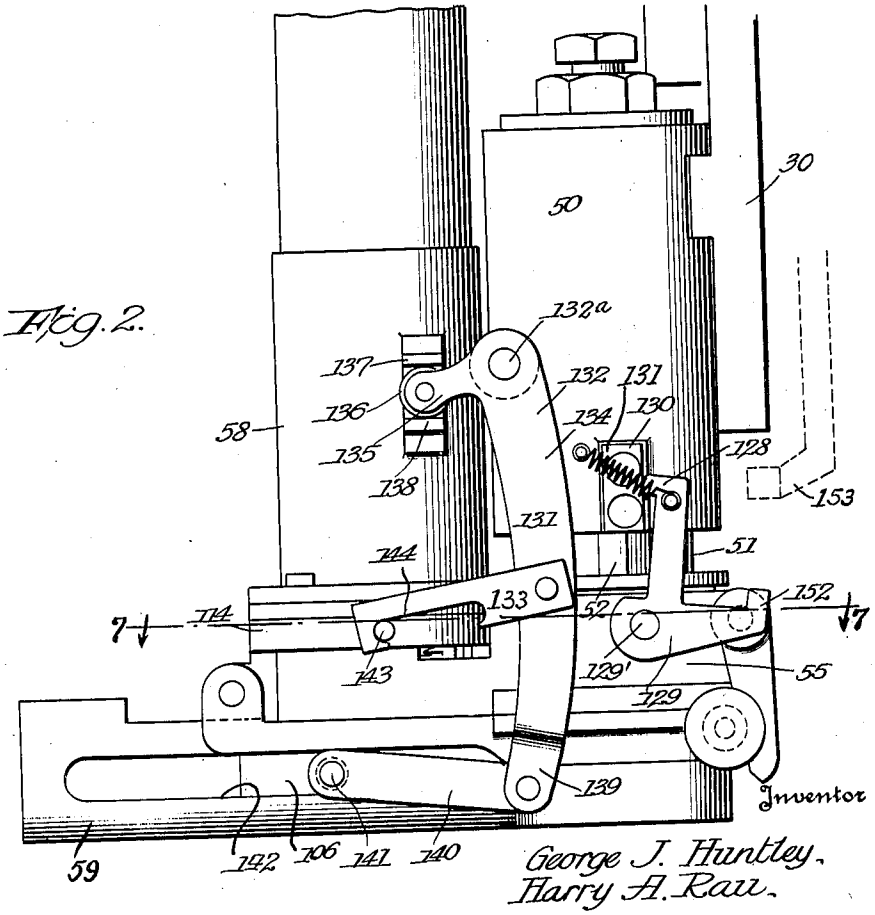


Fig. 2.



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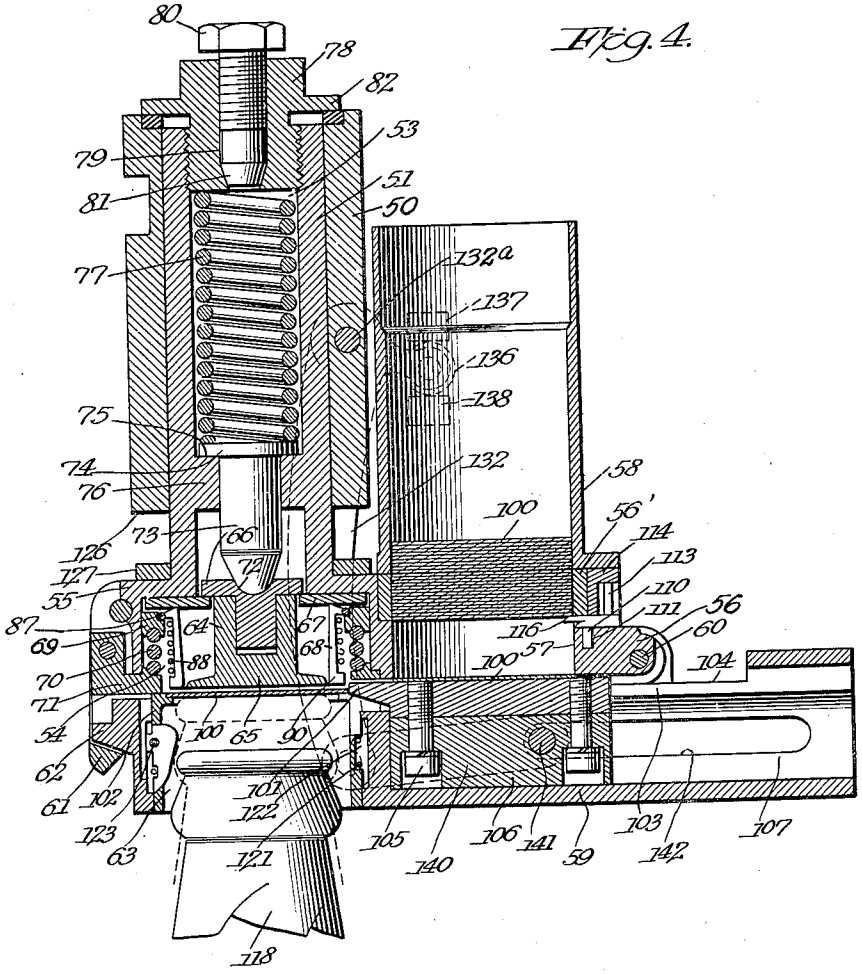
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CAPPING HEAD

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Fig. 4.



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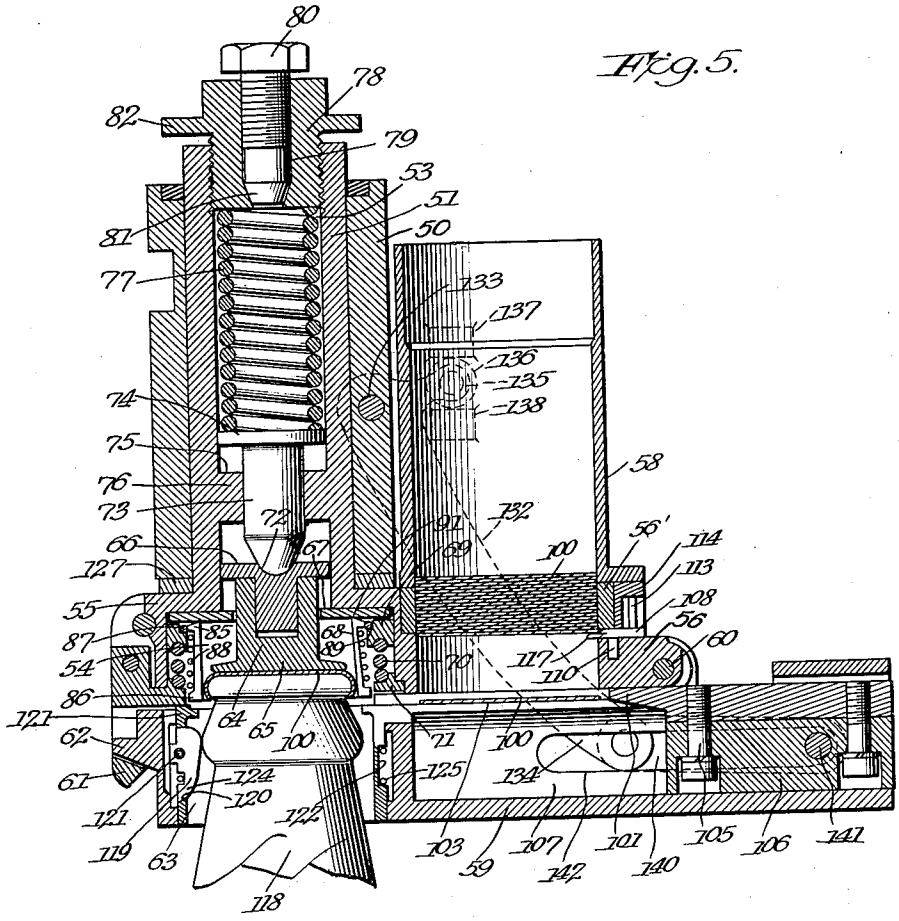
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CAPPING HEAD

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Fig. 5.



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CAPPING HEAD

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Fig. 7.

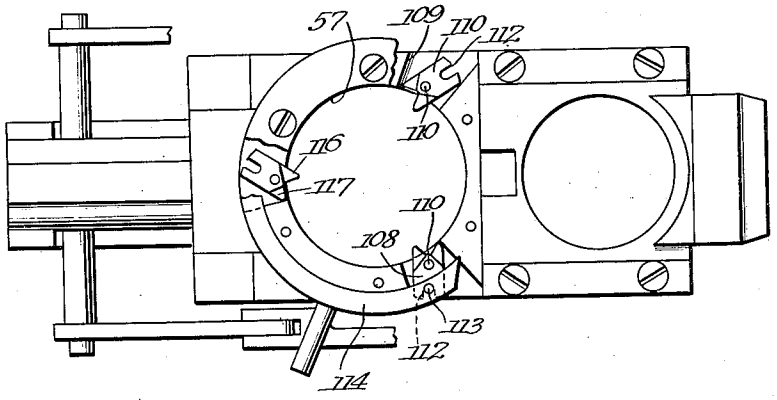


Fig. 6.

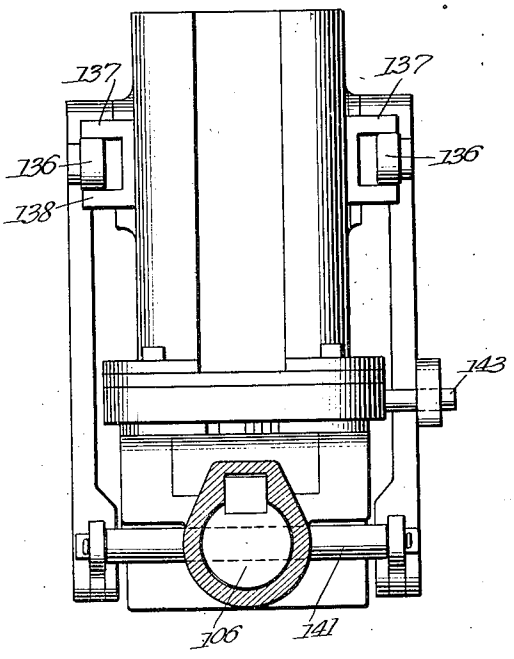
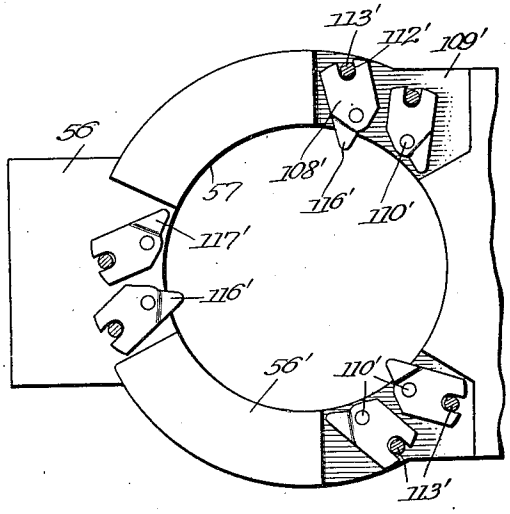


Fig. 8.



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CAPPING HEAD

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Fig. 9.

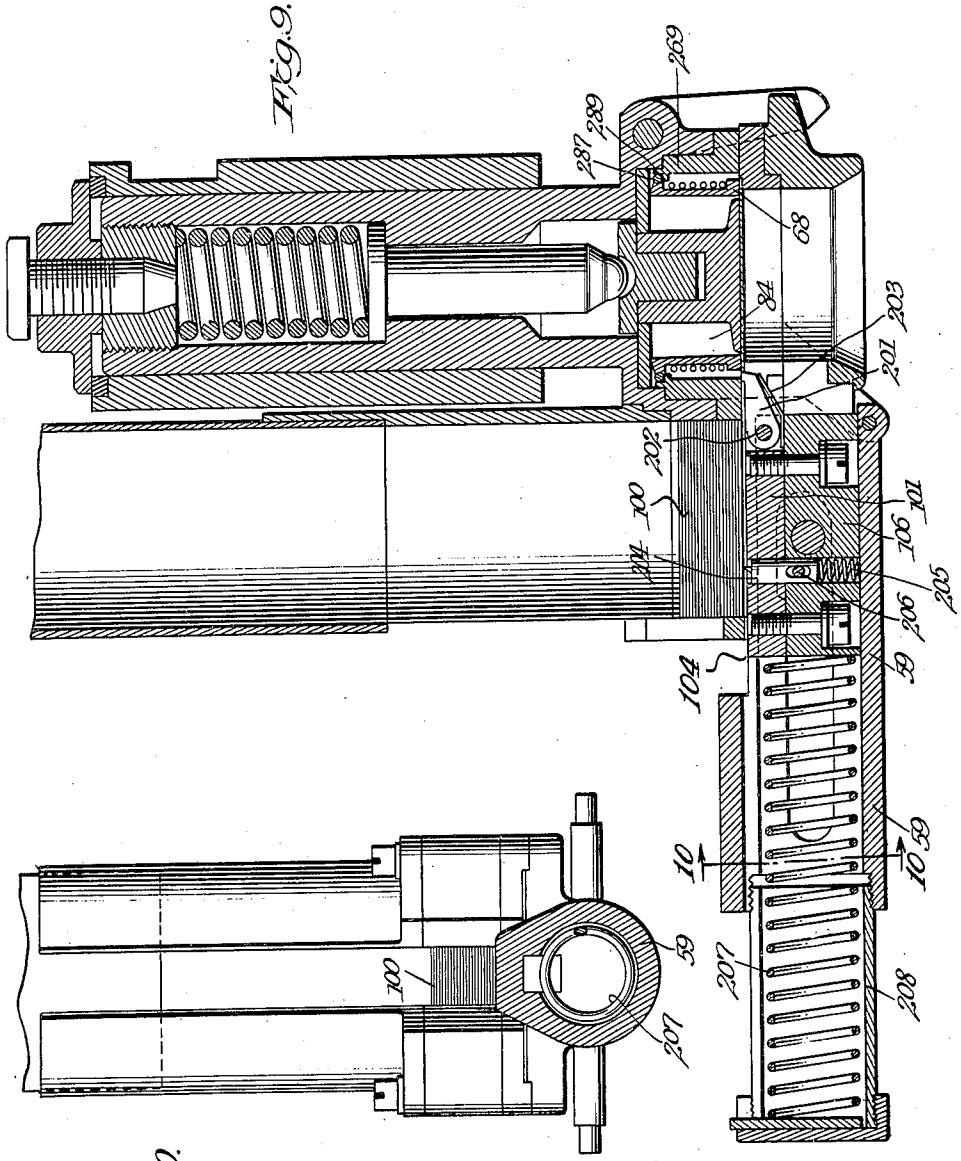


Fig. 10.

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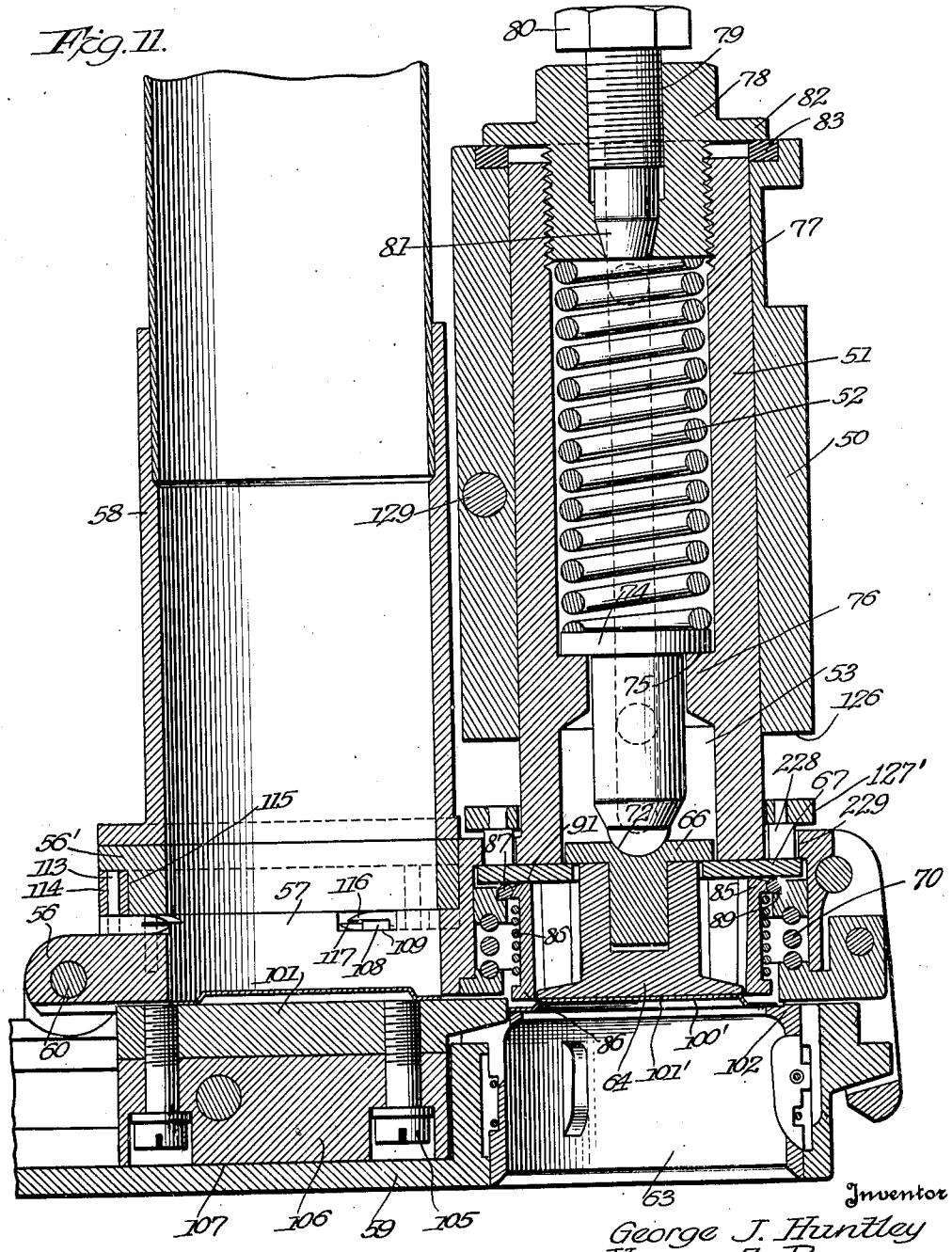
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CAPPING HEAD

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Fig. 11.



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UNITED STATES PATENT OFFICE

1,956,218

CAPPING HEAD

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Application July 12, 1932, Serial No. 622,154

19 Claims. (Cl. 226—86)

The present invention relates to an improvement in capping heads and, more particularly, comprises a means for feeding closure or cap blanks to the capping mechanism of the capping head.

Our invention is particularly designed for use in a capping head of the type disclosed in the application filed by George W. Booth on July 27, 1931, Serial No. 553,462, involving a capping head for forming substantially flat discs or closure blanks in situ, i. e., upon the container, into skirted caps or closures.

The most satisfactory manner of operating the cap or closure feeding mechanism of the capping head of a capping machine is to have the feeding mechanism actuated in accordance with the movements of the capping head during the capping operation, the usual arrangement being to have the feeding mechanism operatively connected to the capping head in such a manner that the feeding mechanism will reciprocate horizontally when the capping head reciprocates vertically, the feeding mechanism moving beneath a vertically arranged stack of cap blanks to remove the lowermost blank from the stack on each operation. In previous mechanisms, the stack of discs has rested directly upon the feeding mechanism, thereby imposing a considerable amount of friction upon this mechanism and tending to hinder its operation. This has naturally retarded the operation of the entire capping head and has likewise caused some difficulty in properly presenting the cap blanks to the capping mechanism.

The principal object of the present invention is to provide a feeding mechanism for a capping head so constructed that its movements will be accurately synchronized with the operation of the capping head and which is so arranged that the weight of the stack of blank caps will not be supported upon the feeding mechanism.

Another object of the invention is to provide a capping head which is so constructed that the feeding mechanism will receive but a single cap blank during each cycle of its movements with respect to the stack of cap blanks.

In the drawings,

Figure 1 is a side elevation of a capping machine provided with a capping head of our invention;

Figure 2 is a side elevation of our capping head;

Figure 3 is a plan view of our capping head;

Figure 4 is a vertical section taken on the line 4—4 of Figure 3;

Figure 5 is a vertical section similar to Figure 4 showing the parts in another position;

Figure 6 is an end elevation partly in vertical section of the capping head;

Figure 7 is a horizontal section, with parts of the mechanism broken away, taken on the line 7—7 of Figure 2, and showing the disc supporting devices preferably used in this capping head;

Figure 8 is a view generally similar to Figure 7 showing a modified form of disc supporting devices;

Figure 9 is a vertical section generally similar to Figure 4 but showing a modified form of our capping head;

Figure 10 is an end view partly in vertical section taken on the line 10—10 of Figure 9; and

Figure 11 is a central vertical section through the capping head showing the head equipped for operation upon cap blanks which are not entirely flat.

The numeral 20 designates a capping machine with which a capping head 21 constructed in accordance with our invention may be used. The machine 20 comprises a base and vertical standard 22 which supports an electric motor 23 at its upper end. When the machine is operating, the motor 23 runs continuously, and, through reducing gearing 24, drives a pulley 25. Pulley 25 is connected for operation with a pulley 26 on the main drive shaft 27 of the machine, by means of a belt 28. A crank, not shown, is provided on the shaft 27 within the standard 22 and causes a slide member 29 to reciprocate vertically in slideways on the front face of the standard 22. A block 30 is carried by the slide member 29 and may be vertically adjusted with respect to the member 29 by means of a hand wheel 31 so that the machine may operate upon receptacles of various sizes. The shaft 27 is equipped with a clutch 32 which, in engaging position, permits the slide member 29 and block 30 to vertically reciprocate. Clutch 32 may be controlled by a foot lever 33 pivoted on the standard 22 and connected to a clutch operating member 34 by a link 35. A coil spring 36 normally holds the foot lever in such position that the clutch will be disengaged. The machine may, of course, be operatively connected to a receptacle feeding mechanism which will control the clutch 32 in synchronism with the feeding of the receptacles.

We preferably provide two capping heads 21 on the slide block 30, the two heads being supported at either side of the block. As shown in Figures 2 to 7 inclusive, each capping head 21 is mounted in a vertically arranged cylinder or sup-

porting member 50 which is suitably secured to the block 30. A throat carrier in the form of a cylindrical sleeve 51 is slidably mounted for vertical movement in the cylinder 50, vertically extending diametrically opposite keys 52 being provided on the throat carrier 51 to engage slideways in the bore of the cylinder 50 to guide the vertical movements of the throat carrier 51. The throat carrier 51 has a vertical bore 53 therein which opens at its lower end into a circular chamber 54 provided in an enlarged portion 55 on the lower end of the throat carrier 51. The enlarged portion 55 has a lateral extension 56 integral therewith and a disc feeding aperture 57 is provided in this extension. A disc holding cylinder 58 is aligned with the aperture 57 and extends upwardly and parallel with sleeve 51 from a vertically extending collar 56' which is fixed in alignment with the aperture 57. A platform 59 is pivoted at 60 to the outer extremity of the lateral extension 56 and a latch 61 pivoted to the inner end of the enlarged portion 55 of the throat carrier engages a shoulder 62 on the platform 59 to hold the latter in its normal horizontal position, as shown.

An aperture 63 is provided in the platform 62 beneath the throat chamber 54 and a presser foot 64 is supported in the throat chamber immediately above the aperture 63. Presser foot 64 is provided with a lower headed portion 65 and an upper headed portion 66. The upper headed portion 66 rests upon a presser foot plate 67 which rests upon a throat sleeve 68. The throat sleeve is in turn supported by a ring 69 encircling the throat sleeve 68 and which is held in upper position by means of a coil spring 70, the lower portion of which rests upon a plate 71 which is secured to the lower portion of the chamber 54 by means of screws or the like, not shown.

A socket 72 is provided in the upper head 66 of the presser foot 64 and the lower rounded portion of a presser foot spindle 73 is seated in this socket. The spindle 73 is provided with a flanged head 74 which normally rests upon an annular shoulder 75 provided by a restriction 76 in the bore 53 of the throat carrier. A relatively strong coil spring 77 is seated upon the spindle 73 to normally hold its flanged head 74 in contact with the shoulder 76. Spring 77 is held compressed by a top nut 78 threaded into the upper end of the bore of the throat carrier. The nut 78 is provided with a central threaded bore 79 and is preferably provided with radial slits extending from the bore 79 so that the nut may be expanded by means of a set screw 80 which is threaded into the bore 79 and has a conical inner end 81 which serves to expand the radially slit portion of the top nut. Top nut 78 is provided with a circumferential flange 82 which bears upon the upper end of the cylinder 50. A resilient washer may be provided upon the upper end of the cylinder 50 beneath the flange 82.

The throat 68 is formed of a plurality of segments 84, each segment being provided with outwardly extending shoulders 85 and 86. The shoulders 85 are provided on the upper portion of the segment and are slightly grooved on their outer sides. A relatively stiff split ring 87 encircles the assembled group of segments 84 and, with a coil spring 88 which encircles the segments between the shoulders 85 and 86, serves to hold the segments in the form of a sleeve or throat as shown. The split ring 87 also serves to support the throat upon the ring 69, the upper inner portion of ring 69 being counter-bored to provide a shoulder or ridge 89 upon which the split ring 87 rests. As is shown in Figure 4, the lower edge of the throat 68 is normally flush with the lower surface of the presser foot 64, the inner lower edge 90 of the throat 68 being slightly spaced from the periphery of the lower headed portion 65 of the presser foot. It will be noted that the upper shoulder 85 of each of the segments 84 is slightly beveled downwardly and outwardly so that the segments 84 have substantially a single point of contact 91 with the presser foot plate 67, enabling the segments to be swung outwardly upon this point as a pivot.

The cap discs 100 are fed into position for the capping operation by means of a pusher finger 101 and are supported beneath the presser foot 64 upon the upper surface of a collar 102 which is seated in the bore 63 of platform 59. It will be noted that a space is provided beneath the lower end of the throat 68 and the upper surface of the supporting ring 102 to permit a cap disc 100 to be positioned between the two. This space should be sufficient to accommodate cap blanks which are not entirely flat.

The pusher finger 101 moves in a slot 103 formed centrally of the upper wall 104 of the platform 59, and is secured by machine screws or the like 105 to a pusher finger block 106 movable in a horizontal slideway 107 formed in the platform 59. The pusher finger block 106 and pusher finger 101 move horizontally between the positions shown in Figure 4 and Figure 5. The mechanism for accomplishing the movements of the pusher finger block will be hereinafter described.

The mechanism for feeding the blank discs 100 down into the path of the pusher finger 101 preferably comprises a plurality of oscillating finger devices 108 such as are shown in detail in Figure 7. The fingers 108 are positioned in kerfs 109 cut in the upper surface of the lateral extension 56 and arranged radially of the disc aperture 57. The upper sides of the kerfs 109 are closed by the lower end of the collar 56'. Each of the oscillating finger devices 108 has a downwardly projecting pin 110 thereon which fits in a small vertical bore 111 extending downwardly from each of the kerfs 109, the pin 110 serving as an axis for the oscillating finger device. The outer ends of the oscillating fingers 108 are slotted at 112 and are engaged by pins 113 carried by a ring 114. The ring 114 is mounted for oscillating movement about the collar 56'. Movement of the ring 114 will swing the oscillating finger devices 108 and cause them to oscillate on their axes 110. The inner end of each of the oscillating finger devices illustrated in Figure 7 and preferably used in our device is in the form of a fish-tail and comprises two fingers 116 and 117 laterally offset with respect to each other, finger 116 being spaced above finger 117 a distance corresponding to the thickness of the material of which the blank discs used in the machine are formed. Finger 116 is preferably rounded on its upper surface, as is best shown in Figure 4 and has a flat lower surface, while the upper surface of the lower finger 117 is flat. The lower surface of finger 117 may be rounded. The oscillation of the ring 114 is adapted to be synchronized with the reciprocation of the pusher finger 101 by a lever and latch arrangement hereinafter described so that the blank discs will be fed downwardly to the pusher finger 101 to be moved to a position beneath the presser foot 64 at the proper moment.

The capping head of the present invention may be used in capping machines or filling and cap-

ping machines of a number of types and in each instance the operation of the capping head will be substantially as described in the present case. Its operation, when used in connection with the machine illustrated in Figure 1 and the arrangement of its operating parts when used therewith is as follows: Bottles 118 may be fed into position on the worktable 38 of the machine illustrated in Figure 1 either by hand or by means of a mechanical conveyor of some type. In either event, the bottles must be positioned in substantial alignment with the aperture 63 of the platform 59. Centralizing guides 119 are positioned in vertically extending circumferentially spaced slots 120 in the ring 102 to properly center the mouth of the bottle with respect to the presser foot 64. The guides 119 are held in position by a coil spring 121 in ring form which extends about the collar 102 in a groove 122 and through apertures 123 in each of the guides 119. The lower ends 124 of the guides 119 are downwardly beveled within the slots 120 as shown and are pressed inwardly by means of a second coil spring 125 which likewise encircles the rear surface of the collar 102. Rotation of the main shaft 27 of the machine 20 will cause the capping head 21 to move downwardly, it being understood that the actuation of the shaft 28 is timed with the operation of the mechanical bottle feeding mechanism, if such mechanism is used, or that the shaft 28 will be caused to move the head 21 downwardly by manual actuation of the foot lever 33. The cylinder 50 will move downwardly, carrying the throat carrier 51 with it and the aperture 63 in the platform 59 will descend about the mouth of the bottle. Contact of the blank capping disc 100 and the pressure foot 64 with the mouth of the bottle will cause throat carrier 51 and presser foot 64 to be held stationary while the cylinder 50 continues its downward movement until the lower end 126 of the cylinder 50 comes into contact with the spacing ring 127. At this moment the upstanding arm 128 of a latch 129 pivoted at 129′ on the outer wall of the chamber 55 will engage a latch block 130 projecting from the outer wall of the cylinder 50 and a coil spring 131 having one end secured to the cylinder 50 and the other end secured to the upper end of the upstanding arm 128 of the latch will hold the arm in engagement with the latch block, locking the throat carrier 51 and the cylinder 50 in this relation.

The cylinder 50 will continue its downward movement and will thereby force the throat 68 down about the sides of the mouth of the bottle, while the bottle will force the presser foot 64 and spindle 73 upwardly against the action of the coil spring 77, capping the bottle in the manner described in the application of George W. Booth heretofore referred to.

The upward movement of the throat carrier 51 into the cylinder 50 as just described will, by means of a bell crank lever 132 and latch 133 actuate the pusher finger 101 and oscillating fingers 108. The bell crank levers 132 are pivotally supported at either end of a pin 132*a* carried in the outer wall of the supporting cylinder 50 and are provided with relatively long downwardly extending arms 134 and relatively short horizontally disposed arms 135. The short arms 135 are provided with rollers 136 at their outer ends which are positioned between vertically spaced lugs 137 and 138 fixed to the side walls of the disc holding cylinder 58. The lower ends 139 of the vertical arms 134 are connected to the pusher block 106 by means of links 140 which are pivotally connected to a pin 141 which extends through the pusher block 106 and through slots 142 in the side walls of the platform 59. The latch 133 is pivotally supported upon the vertically extending arm 134 of one of the bell cranks midway of the length of the latter and rests upon a pin 143 which projects from the ring 114. It will be noted that the lower side of the latch 133 is cut away at 144, the end walls of this cut-away portion providing stops adapted to contact with the pin 143 during horizontal motion of the latch 133. By the above arrangement, when the throat carrier 51 is forced upwardly in the cylinder 50 by the operation described above, the lugs 137 and 138 on the disc holding cylinder 58 will act upon the short horizontal arm 135 of the bell crank 132 to swing the latter upwardly or to the left, (as shown in Figure 2), causing the pusher block 106 to be moved to the outward position shown in Figure 5. During this movement, the right end (Figure 2) of the cut-away portion 144 of the latch 133 will strike the pin 143 and will swing the latter to the left, resulting in a rotary movement of the ring 114 and oscillation of the fingers 108 from the position shown in Figure 4 to that shown in Figure 5. In Figure 4, the pile of blank discs is shown resting upon the upper fingers 116 but oscillation of the fingers by the movement just described will cause the upper fingers 116 to be moved back into the kerfs 109 while the lower fingers 117 will be turned out into the bore of the disc holding aperture, permitting the stack of discs to drop from the upper fingers to the upper sides of the lower fingers. The movement of the pusher finger 101 to outward position will, of course, permit the disc 100 shown on top of the pusher finger 101 in Figure 4 to drop down in front of the pusher finger as illustrated in Figure 5.

Continued rotation of the drive shaft 28 after the bottle has been capped will cause the cylinder 50 to be moved upwardly with the slide member 29 and a horizontal arm 152 on the trip latch 129 (Figure 2) will come into contact with the lower end of a trip rod 153 secured to the standard 22 causing the trip latch 129 to be disengaged from the latch block. The position of rod 153 may be vertically adjusted in accordance with the vertical adjustment of block 30.

When latch 129 is released the throat carrier 51, platform 59, and disc holder 58 will, due to their own weight, drop to the position shown in Figure 4. The movement of these parts from the position shown in Figure 5 to that shown in Figure 4 will, through the pressure of the lugs 137 and 138 on the short arm of the bell crank 132, cause the bell crank to swing to the right (with respect to Figure 2) and move the pusher finger block 106 in that direction. The pusher finger 101 (Fig. 5) will move the disc 100 seated on the top surface 104 of the platform 59 to the left beneath the presser foot 64. The swinging movement of the vertical arms 134 of the bell crank will likewise draw the latch 133 to the right (Fig. 2) and when the movement of the pusher finger block to the right is almost completed, the left hand end of the cutaway portion 144 on the latch 133 will strike the pin 143 to change the position of the oscillating finger devices 108. The oscillating finger devices will thereby be turned to move the lowermost fingers 117 into the kerfs 109, thereby dropping the disc 100 which has been resting upon them down upon the upper surface of the pusher finger 101. The upper fingers 116

will be simultaneously turned out into the disc holding bore 57 beneath the lowermost disc of the stack of discs within the cylinder 58 to support the stack.

Figure 8 shows a slightly modified form of oscillating finger device to feed the discs downwardly to the pusher finger. In this form, two oscillating fingers 108' are provided in each kerf 109' in the upper surface of the lateral extension 56. One of the devices 108' is provided with an upwardly offset finger 116' while the other device is provided with a downwardly offset finger 117', the vertical spacing between the fingers being equal to the thickness of the material of which the caps used in the machine are formed. Each of the devices 108' is pivoted on a pin 110' and has a slot 112' in its outer end, the slots of all of the devices 108' being engaged by downwardly projecting pins 113' carried by a ring 114, not shown. The arrangement of the oscillating finger devices 108 with respect to the pins 113' is such that rotation of the ring 114 in one direction will turn all of the upwardly offset fingers 116' into the aperture 57 as it swings the downwardly offset fingers 117' out of the aperture and back within the kerfs 109'. Reverse rotation of the ring 114 will reverse the respective positioning of the fingers 116' and 117'.

The construction of the form of our capping head shown in Figures 9 and 10 is substantially similar to that described above and it operates in much the same manner as does the form illustrated in Figures 2 to 8 inclusive, the principal differences between the two forms involving the throat structure and the construction of the pusher finger block. In the form shown in Figures 9 and 10, the throat 68 is supported upon a single ring 269, ring 269 being provided with a shoulder 289 to support the split ring 287 about the upper portion of the segments 84. Also in the form shown in Figure 9, no oscillating finger devices are used to feed the discs downwardly to the pusher finger 101. In this form the stack of discs 100 normally rests upon the upper surface 104 of the platform 59, except as hereinafter described, and pusher finger 101 is provided with a spring actuated finger 201 which removes the lowermost disc from the stack upon the movement of the pusher finger to the right. Spring finger 201 is pivoted to the pusher finger 101 at 202 and is maintained in substantially horizontal position by a small leaf spring 203 fixed to the pusher block 106. If the stack of discs 100 rested directly upon the upper surface of the pusher finger 101, a substantial degree of friction would exist which would somewhat retard the movement of the pusher finger beneath the stack of discs. In this form, we therefore provide an upwardly projecting pointed element 204 which projects upwardly from the pusher finger block and thus carries the weight of the stack at a single point to reduce the friction. The pointed element 204 is held in upward position by a spring 205 mounted in the pusher block 106 and the vertical movement of the pointed element 204 is limited by a pin 206 mounted in the pusher block 106 and extending through a slot in the element 204. In making its outward movement, the pusher block 106 is positively actuated, since this movement occurs by reason of the pressure exerted by the crank arm of the shaft 27 which forces the throat sleeve 51 upwardly in the supporting cylinder 50. However, the inward movement of the pusher block is only due to gravity or because of the weight of the sleeve 51 which causes it to drop with respect to the supporting sleeve 50 when the latch 129 is released. In order to assist in this movement and to further counteract the friction which would otherwise exist in this form of our device on the inward movement of the pusher block, we provide a coil spring 207 in the platform 59, the inner end of the coil spring 207 bearing against the rear surface of the pusher block 106 and its outer end being mounted in a tube 208 which is threaded into the outer end of the platform 59.

The operation of this form of our device is otherwise similar to the form shown in Figures 2 to 7, a bell crank being provided to actuate the pusher finger block 106 and the cap being formed upon the bottle by the throat 68 in the manner which has already been described.

The form of our invention illustrates in Figure 11 shows a spacing ring 127' on the upper surface of the platform about the lower end of the throat carrier 51 and provided with downwardly projecting circumferentially spaced pins 228 which extend into apertures 229 provided in the upper wall of the platform. A spacing ring of this type is used when the capping head is to operate upon cap blanks 100' which are not entirely flat but which have their outer circumference slightly depressed with respect to the central portion of the cap, the depressed outer circumference and the central portion of the cap, however, being parallel, as shown in Figure 11. The lower ends of the pins 228 rest upon the presser foot supporting plate 67 and are held upwardly thereby as shown in Figure 11 by the action of the spring 70 when the throat carrier 51 is in downward position. On the upward movement of the throat carrier 51 with respect to the supporting cylinder 50 as described in connection with the head illustrated in Figures 2 to 7 inclusive, the upper surface of the spacing ring 127' will come into contact with the lower end 126 of the supporting sleeve 50, forcing the pins 228 down into the apertures 229 and against the presser foot plate 67. The downward movement of the presser foot plate 67 will carry the throat 68 downwardly past the lower end of the presser foot 64 so that the lower end 90 of the throat will bear upon the upper surface of the outer circumference of the cap blank 100', whereby the cap blank will be properly shaped about the mouth of the bottle. The operation of this form of our invention is, in every other respect, similar to the operation of the form illustrated in Figures 2 to 7 inclusive.

We claim:—

1. A capping machine comprising a support, a capping head movable with respect to said support to apply caps to receptacles, a container for caps movable with said capping head, means to feed caps from said container to said capping head, and a lever fulcrumed on said support and operatively connected to said feeding means and said capping head to operate the feeding means in accordance with movements of the capping head with respect to said support.

2. A capping machine comprising a support, a capping head movable with respect to said support to apply caps to receptacles, a container for caps movable with said capping head, means to feed caps from said container to said capping head, and means to operate said feeding means comprising a bell crank lever pivoted on said support and actuated by movement of the capping head.

3. A capping machine comprising a support, a capping head movable with respect to said support

to apply caps to receptacles, a container for caps movable with said capping head, means to feed caps from said container to said capping head, and a bell crank lever pivotally mounted on said support and operatively connected to said capping head and feeding means to actuate the feeding means in accordance with movement of the capping head.

4. In a capping machine, a support, a capping head vertically movable in said support, a container for caps movable with said capping head, means to feed cap blanks from beneath said container to said capping head, means to support cap blanks within said container and to position the cap blanks in the path of said feeding means and means carried by said support and operatively connecting said capping head, said cap supporting and positioning means and said feeding means to operate said two last named means in accordance with vertical movements of said capping head.

5. In a capping machine, a support, a capping head vertically movable in said support, a container for caps movable with said capping head, means to feed cap blanks from beneath said container to said capping head, means to support cap blanks within said container and to position the cap blanks in the path of said feeding means, and a lever pivoted upon said support and operatively connecting said capping head, said cap supporting and positioning means and said feeding means to operate said two last named means in accordance with vertical movements of said capping head.

6. In a capping machine, a support, a capping head vertically movable in said support, a container for caps movable with said capping head, means to feed cap blanks from beneath said container to said capping head, means to support cap blanks within said container and to position the cap blanks in the path of said feeding means, and a bell crank pivoted upon said support and operatively connecting said capping head, said cap supporting and positioning means and said feeding means to operate said two last named means in accordance with vertical movements of said capping head.

7. In a capping machine, a support, a capping head vertically movable in said support, a container for caps movable with said capping head, means to feed cap blanks from beneath said container to said capping head, means to support cap blanks within said container and to position the cap blanks in the path of said feeding means, a bell crank lever pivoted on said support, one arm of said bell crank lever being connected to the capping head and the other arm of said lever being connected to said feeding means whereby vertical movement of the capping head will operate said feeding means, and an operative connection between one arm of said bell crank and said cap supporting and positioning means to operate the latter.

8. The combination of a vertically movable capping head including capping elements to apply a cap to a receptacle, a vertically disposed container for holding cap blanks face to face in vertical stacked arrangement, means to feed cap blanks from beneath said container to said capping elements, vertically spaced fingers projecting into said container and alternately operable to support the stack of capping blanks spaced above said feeding means and to position them in the path of said feeding means, and means actuated by the vertical movement of the capping head to actuate said fingers and to actuate said feeding means.

9. The combination with a vertically movable capping head, of a vertically arranged container to hold a stack of cap blanks, means movable beneath said container to feed cap blanks from the lower portion of said container to said capping head, a member of less area than a cap blank carried by said feeding means and adapted to be projected upwardly therefrom to support the stack of cap blanks above said feeding means, said feeding means including an element to move the lowermost cap blank of said container into said capping head, and means to actuate said feeding means in accordance with the vertical movements of said capping head.

10. Capping mechanism comprising a support, a capping head vertically movable in said support, a vertically disposed container movable with said capping head to hold cap blanks in vertical stacked arrangement, means to feed the lowermost cap blank of the stack from said container to said capping head, means to support the stack of cap blanks spaced above said feeding means, a lever pivotally mounted on said support to operatively connect said capping head and said feeding means whereby the latter will be actuated in accordance with vertical movements of the capping head and spring means to assist the feeding movement of said feeding means.

11. A capping machine comprising a base, means to support a receptacle upon said base, a member arranged for vertical movement with respect to said base, a capping head support mounted on said member, a capping head including capping elements carried by said support, a container for blank caps fixed to said capping head, operating means upon said base for vertically reciprocating said member and capping head support whereby the receptacle will be capped upon the downward movement, said capping head being mounted for vertical movement with respect to its support, upward movement thereof with respect to said support being effected upon contact of the capping head with the receptacle, means to lock the capping head in such upward position with respect to its support, means carried by said base to release said locking means upon the upward vertical movement of the support with respect to the base, and means to feed cap blanks from the container to the capping elements of said capping head actuated by the vertical movement of the capping head with respect to its support.

12. A capping machine comprising a capping head support, a capping head vertically movable in said support, said capping head being provided with a downwardly opening capping chamber, a presser tool carried in said chamber and movable with respect thereto, a throat member within said chamber surrounding said presser tool, said presser tool being operative adjacent but within the edge of a substantially flat closure member and said throat being engageable with the portion of said closure between the presser tool and the edge of the closure, and means carried by said capping head and adapted to engage said support upon upward movement of said capping head with respect to said support to move said throat member downwardly with respect to said presser tool.

13. The combination of a vertically moving capping head including capping elements to apply a cap to a receptacle, a vertically disposed container movable with the capping head and

adapted to hold cap blanks face to face in vertical stacked arrangement, means to feed cap blanks from beneath the lower end of said container to the capping elements, pivoted members in said container to support the stack of capping blanks spaced above said feeding means, means actuated by the vertical movement of the capping head to actuate said feeding means, and means connecting said feed actuating means and said members to actuate said members to feed the lowermost cap in the stack downwardly to said feeding means.

14. The combination in a capping machine of a support, a capping head movable in said support, a container for holding caps, means to feed caps from said container to said capping head, a lever pivotally mounted on said support and operatively connected to said capping head and feeding means to move said feeding means from beneath said container upon upward movement of said capping head with respect to said support, means to hold said capping head in upward position with respect to said support, and means to release said holding means whereby said feeding means will be moved to feed a cap from said container to said capping head.

15. The combination in a capping machine of a support, a capping head movable in said support, a container for holding caps, means to feed caps from said container to said capping head, means carried by said support and operatively connected to said capping head and feeding means to move said feeding means from beneath said container upon upward movement of said capping head with respect to the support, means to hold said capping head in upward position with respect to said support, and means to release said holding means whereby said feeding means will be moved to feed a cap from said container to said capping head.

16. A capping machine comprising a capping head support, a capping head for receptacles movable in said support, said capping head being provided with a capping chamber, a presser tool carried in said chamber and movable with respect thereto, a throat member within said chamber surrounding said presser tool, said presser tool being operative adjacent but within the edge of a substantially flat closure member and said throat being engageable with the portion of said closure between the presser tool and the edge of the closure, and means operated upon movement of said capping head into said support to move said throat member past said presser tool and about the mouth of the receptacle.

17. A capping machine for applying substantially hat-shaped cap blanks to receptacles comprising a capping head support, a capping head vertically movable in said support, said capping head being provided with a downwardly opening capping chamber, a presser tool carried in said chamber and movable with respect thereto, a throat member within said chamber surrounding said presser tool, said presser tool being operative upon the crown portion of a hat-shaped blank, and means carried by said capping nead and adapted to engage said support upon upward movement of said capping head with respect to said support to move said throat member downwardly with respect to said presser tool to engage the brim portion of a hat-shaped blank.

18. In combination, a supporting member, a capping head for applying hat-shaped cap blanks to receptacles, said capping head being movable in said supporting member and including an outwardly opening capping chamber, a throat member within said chamber, and means carried by said capping head and adapted to engage said supporting member upon inward movement of said capping head with respect to said member to move said throat member outwardly toward the brim portion of a hat-shaped blank.

19. In a capping machine, a support, a capping head vertically movable in said support, a container movable with said capping head, means to feed cap blanks from beneath said container to said capping head, means to support cap blanks within said container and to position the cap blanks in the path of said feeding means, and a lever pivoted upon said support and operatively connecting said capping head and said cap supporting and positioning means to operate said last named means in accordance with vertical movements of said capping head.

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