Aug. 2, 1938. C. L. BAKER 2,125,415

DEVICE FOR APPLYING CLOSURE MOUTH TO BOTTLE BODIES

Filed Aug. 24, 1937 5 Sheets-Sheet 1

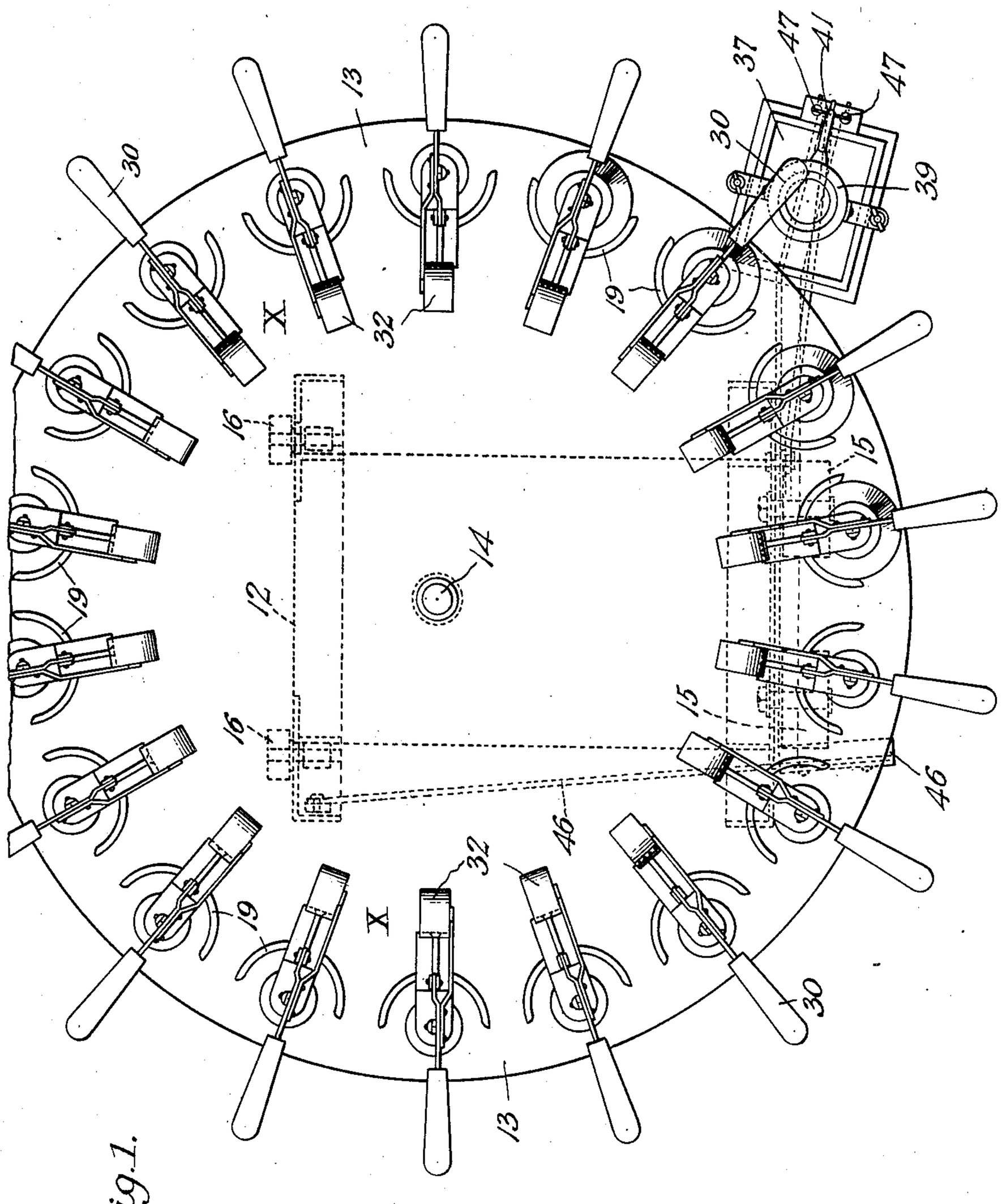

Fig. 1.

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DEVICE FOR APPLYING CLOSURE MOUTH TO BOTTLE BODIES

Filed Aug. 24, 1937 5 Sheets-Sheet 2

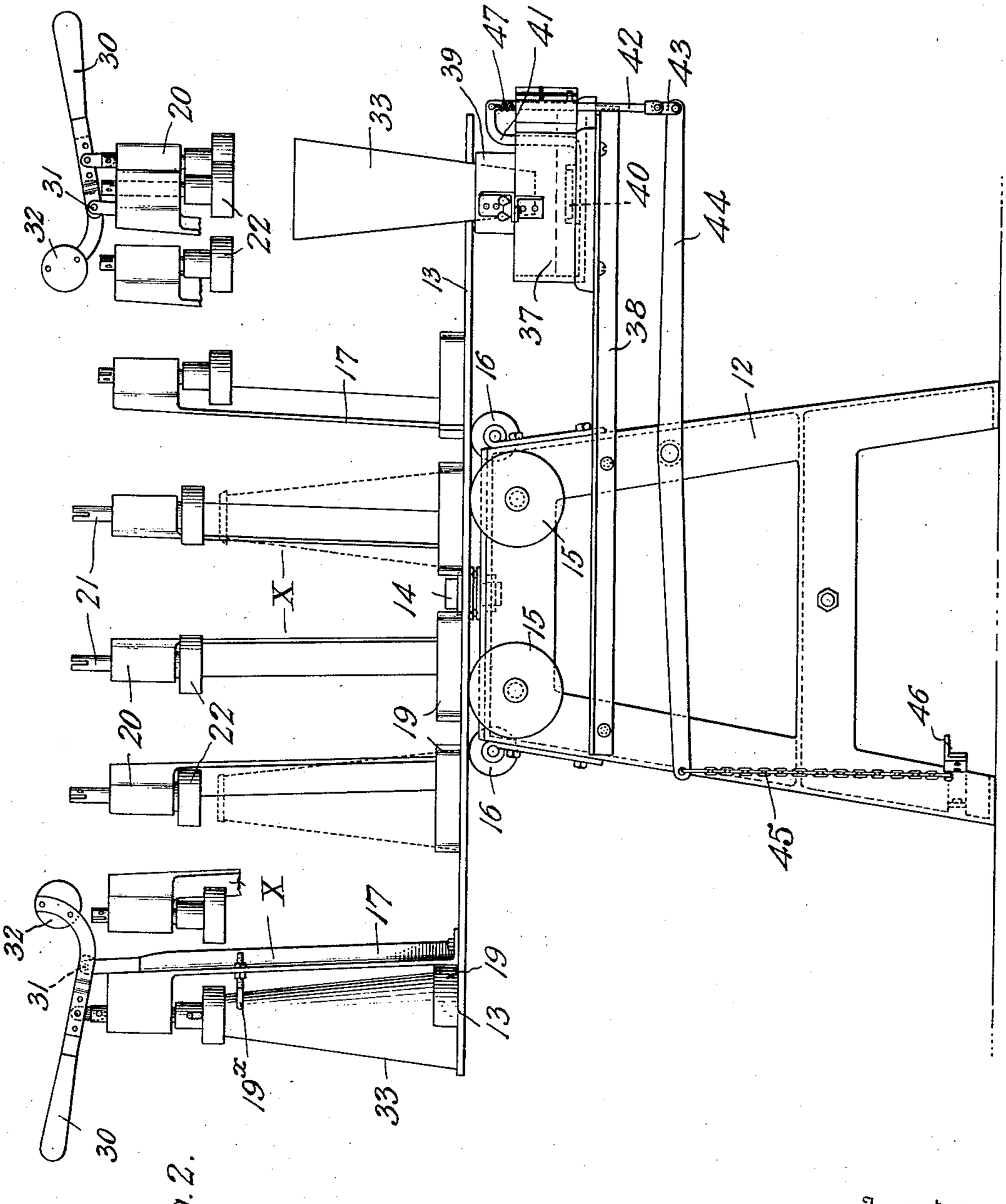

Fig. 2.

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DEVICE FOR APPLYING CLOSURE MOUTH TO BOTTLE BODIES

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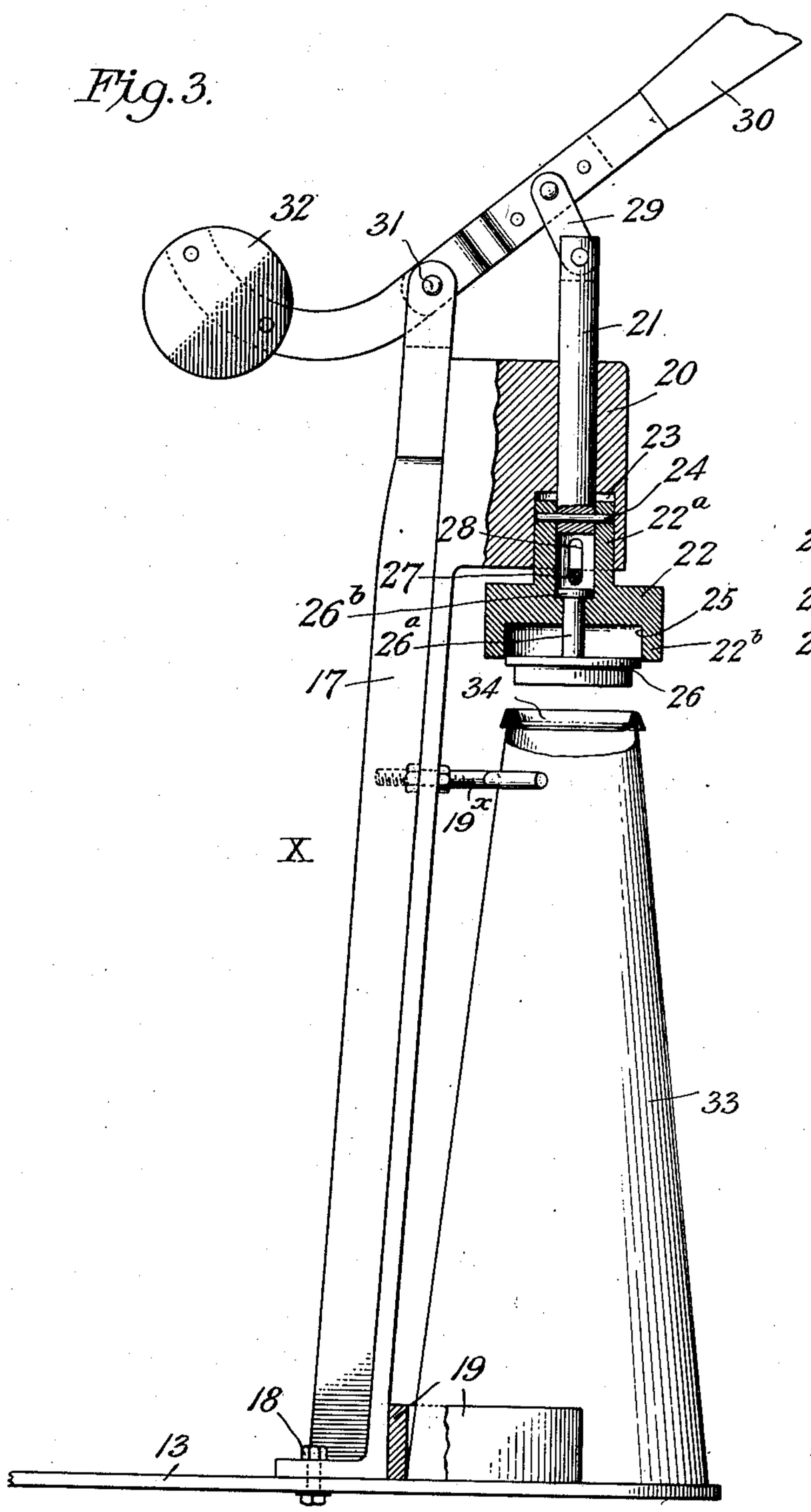
Fig. 3.



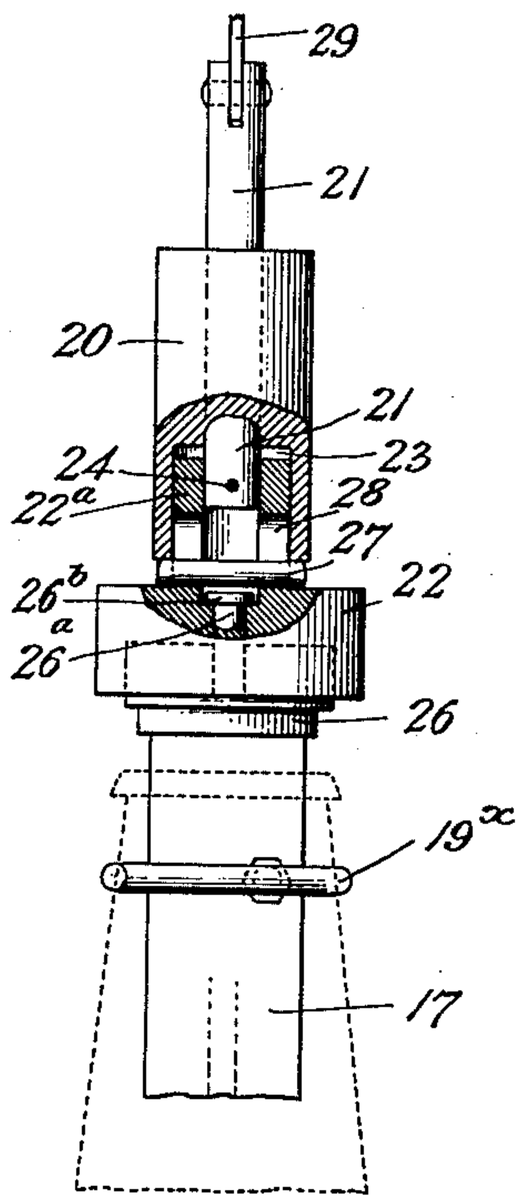


Fig. 4.

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DEVICE FOR APPLYING CLOSURE MOUTH TO BOTTLE BODIES

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Fig. 8.

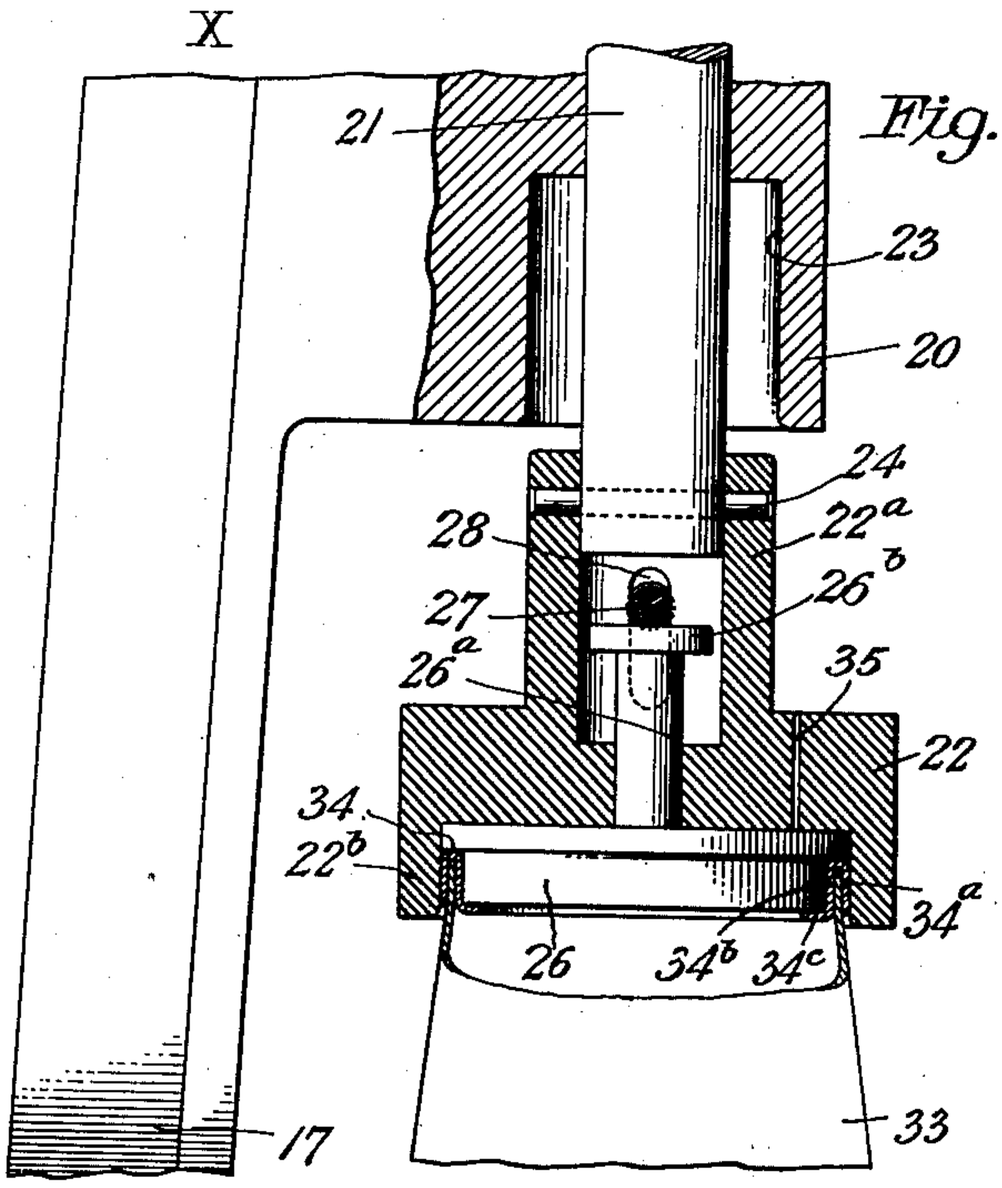


Fig. 5.

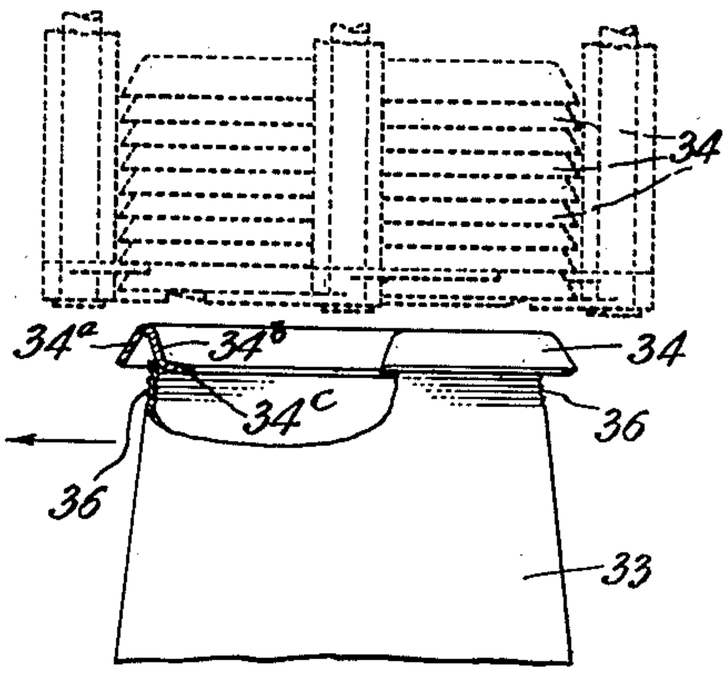


Fig. 9.

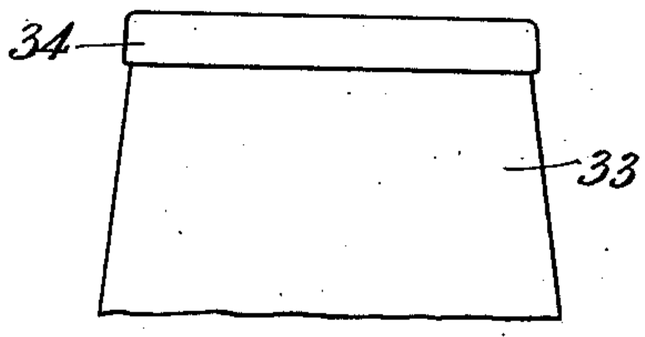


Fig. 6.

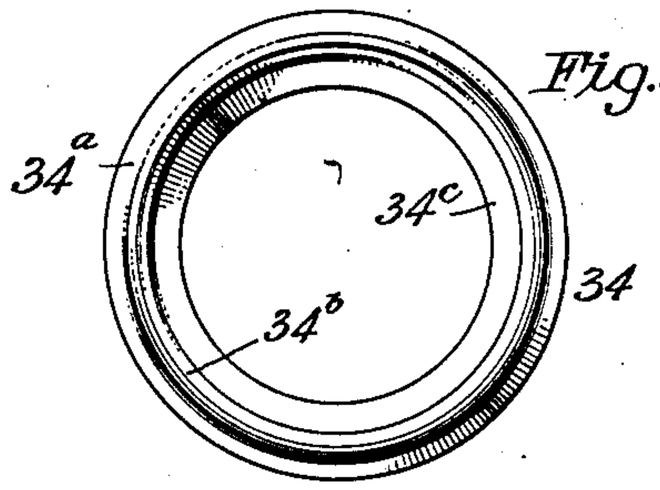


Fig. 7.

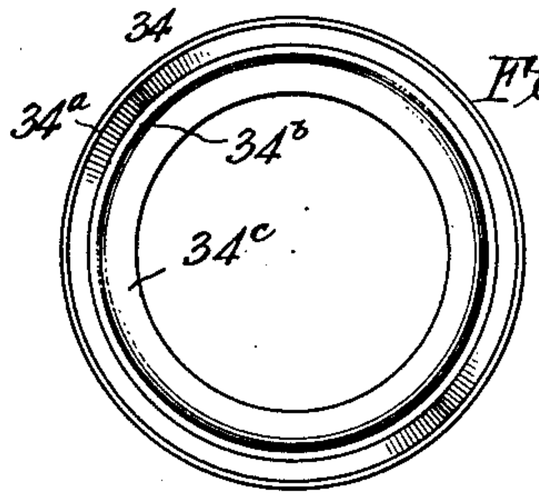
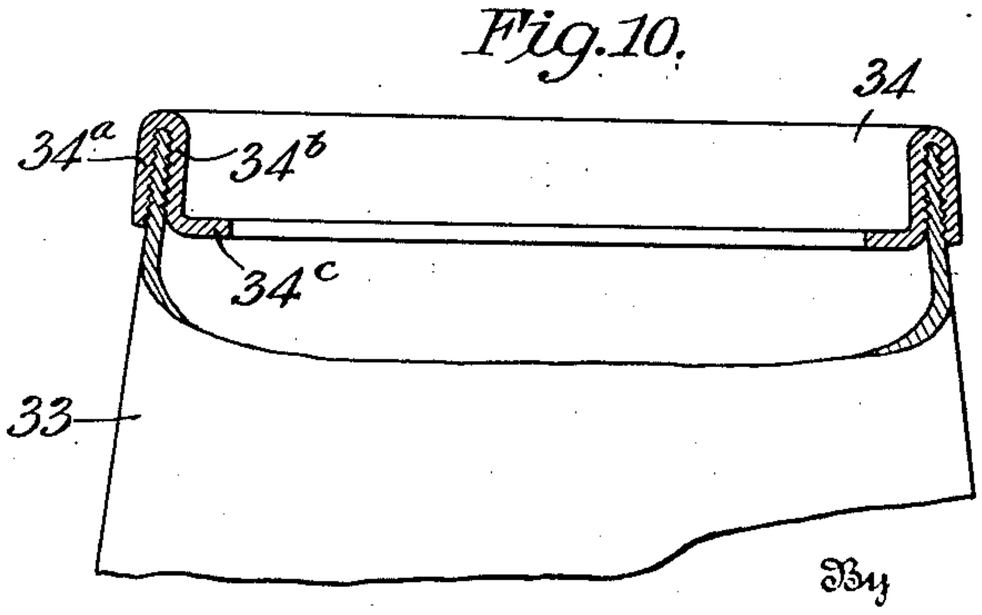


Fig. 10.



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DEVICE FOR APPLYING CLOSURE MOUTH TO BOTTLE BODIES

Filed Aug. 24, 1937 5 Sheets-Sheet 5

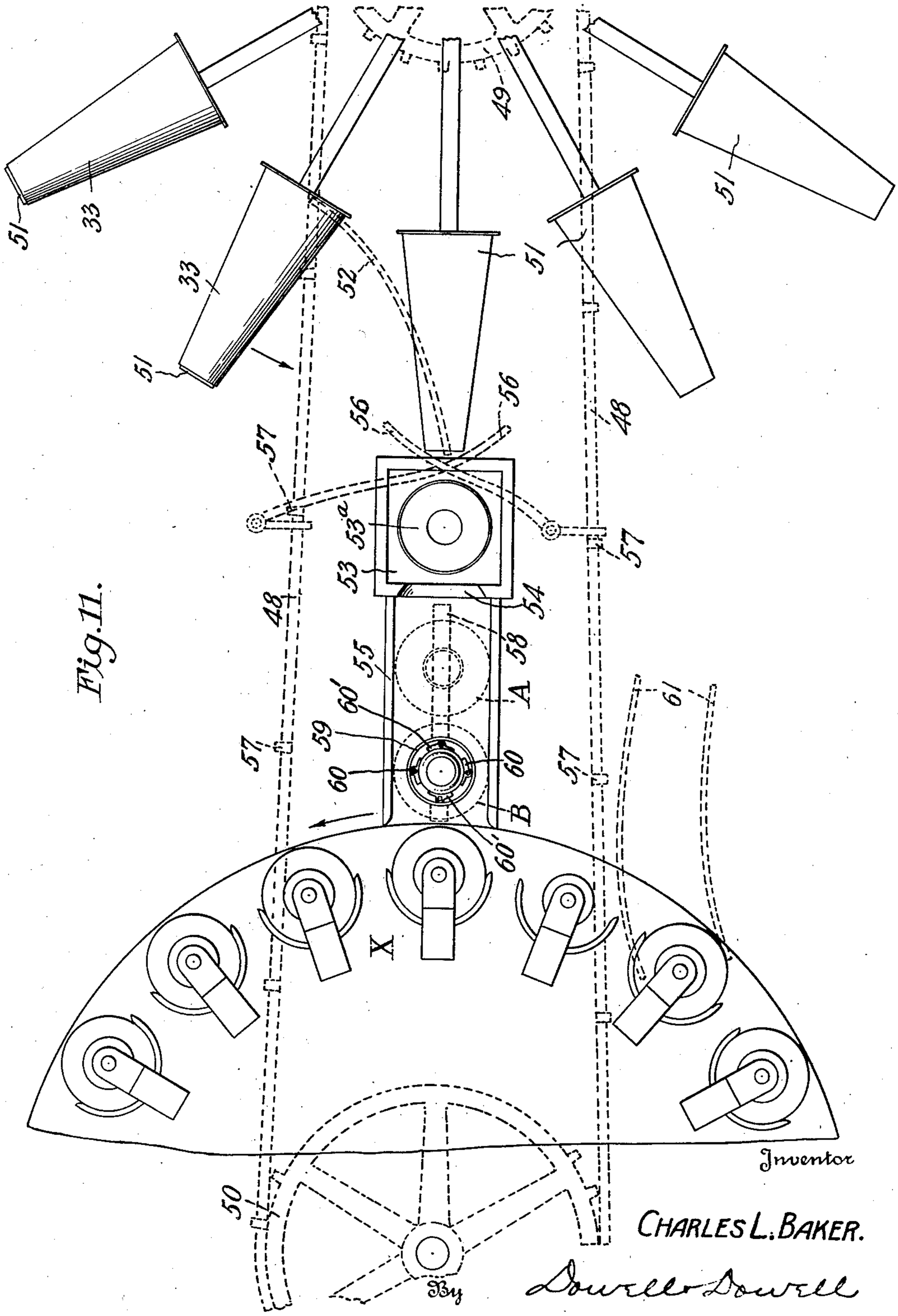

Fig. 11.

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Patented Aug. 2, 1938 2,125,415

UNITED STATES PATENT OFFICE

2,125,415

DEVICE FOR APPLYING CLOSURE MOUTHS TO BOTTLE BODIES

Charles L. Baker, Lancaster, Pa., assignor to Jet D. Sheetz, Lancaster, Pa.

Application August 24, 1937, Serial No. 160,704

9 Claims. (Cl. 93—55.1)

This invention relates to bottle topping, with reference more particularly to devices for rimming or applying closure lip attachments to the mouth ends of paper bottles or the like containers, and constitutes a companion to the invention set forth in my co-pending application Serial No. 160,703, filed simultaneously herewith, covering a machine for forming tubular sheet-material (bottle) bodies, the mechanisms of the two cases being closely associated and cooperable, one with the other.

A primary object is to provide a suitable device or means for applying an improved closure-receiving mouth piece or throat ring to the top or neck end of a tubular container body, and more especially to a frusto-conical milk bottle, made of paper.

Another primary object is to provide a device or means to perform the stated function in an improved manner and so as to produce an improved result, i. e. to assure an adequately strong affixture and to give a better closure facility to the tubular end of the bottle body.

An important aim in connection with the provision of such device or means is to adapt or render the same adaptable to an automatic operation in sequence and synchronism with the automatic tubular body forming machine of the aforesaid co-pending application, so as to perform the stated function as a secondary step in the manufacture of paper milk bottles or other liquid containers, this purpose of course requiring and contemplating an automatic feed of the mouth pieces or rings to be applied to the bottle bodies.

One of the important features of the invention is to provide for the automatic and immediate release of the bottle bodies from the device as soon as the mouth pieces or rings are properly applied and affixed thereto.

The invention will be best understood by further description with reference to the accompanying drawings, wherein one practicable embodiment thereof is illustrated in a very simple and somewhat elementary form.

In said drawings:

Fig. 1 is a plan view of the device or means in multiple arrangement upon a work operating table, including an adhesive applier associated therewith;

Fig. 2 is a side elevation of the organization shown in Fig. 1, some of the duplicative parts being omitted for clearer illustration;

Fig. 3 is an enlarged scale view, partly in section, of one of the multiple members comprising the means for applying the mouth piece or ring to a bottle body, the said body being shown in position for the mouth piece application;

Fig. 4 is a somewhat fragmentary and likewise partly sectional elevation of said means at right angles to Fig. 3, or as viewed from the front of Fig. 3;

Fig. 5 illustrates diagrammatically and partly in dotted lines an arrangement for automatic feed of the mouth pieces or rings to the ends of the bottle bodies;

Fig. 6 is a top plan view of one of said mouth pieces or rings;

Fig. 7 is a bottom plan view of the latter;

Fig. 8 is a fragmentary and partly section view of the upper part of the device shown in Fig. 3, upon a somewhat larger scale, showing the mouth piece application to the bottle body just before its release therefrom;

Fig. 9 is a fragmentary view of the bottle body illustrating the mouth ring piece as applied to its upper end;

Fig. 10 is an enlarged cut-away view of the upper part of the bottle body showing the mouth ring applied thereto in cross-section and illustrating the angular relation of the walls after release from the applying device; and

Fig. 11 is a plan view, partly fragmentated, showing an arrangement for the automatic feed of the tubular or bottle bodies from the forming machine of the aforementioned co-pending application to the mouth rimming means or device of the present application, in readied condition for the intended appliance, so as to carry out the production in a continuous operation.

In the illustrative embodiment (see Figs. 1 and 2), a pedestal 12 supports an annular table 13 rotatable on an axis shaft 14. Free rotation is assured advantageously by resting the table directly upon double pairs of rollers 15—15 and 16—16 trunnioned in the pedestal, the first or larger pair in this instance being located close to the periphery under what may be referred to as the operating side of the table, and the other or smaller pair being located nearer to the center under the opposite side of the table. Said pedestal may be of any convenient or desired form, such as A-type trusses braced together as represented in the instant example.

Mounted upon said table is a plurality of rim applying devices, denoted, generally by X, in series arrangement circumferentially.

These devices each and correspondingly comprise (see Fig. 3) an arbor 17 fastened to the table, as by bolting shown at 18. At the base of the arbor an arcuate plate 19, opened toward the table

periphery, provides a back stop serving to receive and center the tubular or bottle bodies accurately under the working head. A similar back stop and centerer 19x, formed as by a bar or wire bolted to the arbor, is provided thereabove for the upper end of the tubular or bottle bodies. At the top the arbor is formed with a lateral head 20 providing a guide for the operating members.

Through the aforesaid head an operating plunger 21 vertically extends into connection with a movable block 22. Said block is solid or unitary and formed with a hollowed boss or neck portion 22a fitting upwardly into a counter-recess 23 formed in the arbor head and the lower end of said plunger extends partially into this boss or neck portion for the connection of the two parts. A cross-pin 24 locked in place through said neck portion and the end of the plunger in this instance serves to connect the two parts, with a certain amount of play therebetween in the manner of a swivel, but the connection might instead be accomplished by threaded engagement, or in some other manner as preferred.

Said block 22 is also formed with a recess 25 in its lower face, which is wide and deep enough to receive the upper end of the tubular or bottle bodies and provides a peripheral vertical wall 22b engageable around the upper end of said bodies. Fitting movably in axial direction into said recess is a cap-shaped plunger 26, having a stem 26a extending upwardly guidably through the block into the aforenamed hollow neck portion 22a thereof and headed, as by flanging 26b, to prevent the plunger movement downwardly or outwardly beyond a predetermined point so as to emerge entirely out of said recess. A cross-pin 27 moving in but locked against dislodgment between opposing longitudinal slots 28 in the aforesaid neck portion of the block works in opposite limited directions as against the head 26b of the plunger stem as a check to the plunger movement in a manner and for the special purpose to be later described. The arrangement is such that the plunger movement in opposite directions is independently limited by the aforesaid stem heading 26b and the body of the plunger, i. e. its downward or outward movement is limited by said heading striking the bottom of the hollow neck portion of the block and its upward or inward movement is limited by the upward or inner face of the plunger striking against the bottom of the recess 25 in said block.

The upper end of the aforementioned plunger 21 is connected by a link 29 to an operating lever 30, which is itself pivoted, as at 31, to the top of the arbor 17. A weight 32 on the short arm of said lever in this instance serves to counterbalance the weight of the longer arm thereof, so that it can be swung easily, or with a slight exertion, in either direction up and down.

In operation, a tubular or bottle body 33 of the series to be acted upon is positioned on the device under the operating parts just described, i. e. it is placed within the arbor against the centering back-stops 19 and 19x with its top open end directly beneath the movable members in the guide head 20 and its bottom end resting upon the table 13. Said body 33 in this instance comprises a frusto-conical paper tube or shell, formed in series duplication from blank sheets of the paper material on the machine of the aforenamed copending application Serial No. 160,703 and especially designed for use as milk bottles. The top end of this bottle body is coated with an adhesive, both interiorally and exteriorally, and, upon said end, a mouth or throat ring member 34 to be applied is placed before the said body is introduced or positioned into place as described. Said mouth or throat ring member 34 (see Figs. 6 and 7) comprises simply a paper annulus pressed out into groove or collar form fitting loosely over the peripheral edge of the bottle body in the manner of a rim.

With the bottle body in position, with the mouth or throat ring placed on its top, as stated, the handle 30 is swung downward. This actuates or slides the plunger 21 to move the block 22 down over the opposed top end of said bottle body, with its peripheral wall 22b surrounding said end, to the position shown in Fig. 8. Simultaneously, the cap-shaped plunger 26 brought thereby into obstructed contact with the mouth ring 34 on the body end, into which it partially fits, is moved relatively upward into the recess 25 of the block against the back wall of the same, a vent 35 being advantageously provided in the block to relieve air pressure and assure free movement. Thus said mouth ring is forced down upon the extremital edge of the bottle body between said cap-shaped plunger 26 and the surrounding peripheral wall 22b of the block. In other words, the ring is lapped over said edge of the body, with outer and inner portions 34a and 34b, respectively, thereof engaged between the surrounding block and plunger parts and with the edge of the bottle body between its said portions. The spacing between said plunger and surrounding block parts is such that the overlapping fold or three plies of material therebetween are squeeze-pressed together in a vise-like manner, so that the coating of adhesive on the inner and outer sides of the bottle end will cause a tight union bind of the ring thereto, with a formative and strengthening effect. At the same time, a central flange-like portion 34c of the ring is drawn tensionally upward under and against the lower edge of the cap-shaped plunger 26 so as to be formed into an annular shoulder providing an annular ledge on the inner side of the bottle body. The squeezing action of the plunger and surrounding block parts are alone sufficient to give the ring this formation, in addition to binding it securely to the bottle end. The bind of the adhesive may be augmented, if desired, by corrugating or ribbing the end of the bottle body, both interiorally and exteriorally as indicated at 36 in Figs. 5 and 10.

It will be observed (see Fig. 8) that in the ring applying squeeze between the plunger and block parts, the top end of the bottle body is pressed or bent outward from its normal inclination or taper. That is, it is flexed at obtuse angle to the rest of the body wall in a substantially vertical plane between the overlapping portions of the riming ring being applied thereto. This is caused by the vertical plane arrangement or surfacing of the squeezing parts, so that the ring is applied in a straight downward direction with its aforesaid overlapping portions, and especially the inner portion 34b lying in a perfectly straight vertical plane. However, when the bottle body with applied ring is released or removed from the squeezing action (see Fig. 10), the said top end thereof tends to reassume its normal inclination or taper and thereby draw the engaged overlapping portions of the ring, and especially said inner portion 34b thereof into a plane of like inclination. Thus the ring on the body end adjusts itself to a setting with its inner face gradually receding, i. e., with the opening at its top narrower than the opening at its bottom, so as to

provide for the positive retention of a closing top (not shown) inserted thereinto against the flange or ledge portion 34c.

As the cap-shaped plunger 26 is moved upwardly, upon downward movement of the block 22 over the ring topped bottle end, it engages by its stem 26a under the cross-pin 27 and pushes said pin upwardly between its slots in the hollow neck portion of said block. This it does freely inasmuch as said pin slides readily in said slots and tends normally to drop by gravity to the bottom of the same, so that no resistance to such movement is presented. Upon upward movement of said block, however, by upward swing of the lever 30, the said pin 27, which extends end-wise beyond said slots (see Fig. 4), is brought into engagement under the guide head 20 of the arbor and is thereby arrested and withheld from further movement with the block. Thereupon it obstructs further movement also of the plunger 26 with said block and forces said plunger relatively downward or outwardly of the recess 25 as the block continues its upward movement. This causes the said plunger to expel and release the bottle body with its applied mouth ring after the applicative operation, which would otherwise be held between the two squeeze parts sufficiently tightly not to release or drop readily without such provision for the expulsion. Actually a hard pull upon the body would be necessary without this release provision, inasmuch as the squeezing action between the plunger and block parts is so tight and vise-like that the ringed body would be retained in place by friction and so fail to liberate the parts for a subsequent operation.

A bottle body placed under the operative action of this mouth piece applying or top rimming device is left in the grip of its squeeze parts until the adhesive has dried and set sufficiently to bind the ring member fast thereto. No great amount of time is required for the purpose and a very brief period will be sufficient. The ring affixture will be completely effected in the passage of the device through a single revolution of the operating table. Therefore, at any operating point of the table, one of the devices can be released for discharge or withdrawal of a finished bottle body, while a preceding device in the series is put into operation on a fresh bottle body.

In the illustrated organization, the devices are operated by hand, i. e., they are fed, actuated into clamp and release positions, and discharged, all by the action of an operator. The table also is operated or rotated by hand, being advanced a step as each device of the series is brought into action upon a bottle body placed thereunder. This operation or manipulation may be performed from a station such as represented at the bottom of Fig. 1.

At this station, a convenient means of applying the adhesive to the top end of the bottle body is advantageously provided, as for instance by the receptacle 37 at one side of the table. This receptacle is shown to be supported by a bracket or brackets 38 fastened to the table pedestal. It comprises simply a vessel or small vat in which liquid glue is maintained at a predetermined level indicated by dotted lines in Fig. 2. Over the top of the receptacle there is fastened a collar or sleeve 39 having its interior wall sloping downward upon a gradual taper, into which one of the bottle bodies 33 may be inserted inversely, with its tip end extending a certain distance therebeyond into the receptacle, as indicated in Fig. 2. In the bottom of the receptacle, under the aforesaid collar or sleeve, there is provided a shallow cup member 40, carried upon an S-shaped arm 41. Said arm is fixed to or integral with a bar or rod 42 guidably sliding in a suitable bushing or part of the receptacle wall. The bottom end of this bar or rod 42 is conected by a link 43 with one arm of a pivoted lever 44 also supported by the table pedestal. The other arm of said lever is connected as by a chain or rod 45 to a foot treadle bar 46 (see (Figs. 1 and 2).

The said arrangement is such that when said treadle bar is depressed, the pivoted lever 44 is swung to move the bar or rod 42 upward, thereby lifting the S-shaped arm 41 so as to raise the cup member 40 upward under the end of the bottle body 33 invertedly extending into the receptacle. In rising, this cup member carries a shallow depth of glue into contact with the end of the bottle body and thereby coats the same to the depth necessary for the ring attachment. It is returned to position of course by gravity upon release of the pressure on the treadle bar, and a spring or springs 47 connected between the receptacle and rod 42 assists this return. Of course some other gluing means might be used with equal or better facility and result, that which is here shown being merely exemplary of a convenient means for the purpose.

Although the organization here shown is operated only by hand, it is intended in actual practice to automatically operate the same in synchronism with the bottle body forming machine of my aforesaid application Serial No. 160,703, and to automatically feed the bottle bodies successively, from said forming machine, to the operative action of the topping devices in their series sequence. This of course requires an automatic means of placing or dropping the mouth or throat ring members onto the tops of the bottle bodies as they are fed successively from the one machine to the other. An elementary arrangement and mechanism for carrying out this purpose is represented diagrammatically in Fig. 11.

In said figure, an interconnecting drive between the two machines is represented by the chain 48 running between sprockets 49 and 50 of said machines respectively. This drive is so ratioed that with each "step" rotation of the forming machine, the instant topping machine is also advance rotated one "step" or the distance between adjacent devices X. With each "step" rotation, a discharged or empty topping device is brought into a predetermined position to receive a fresh bottle body for the mouth ring application. Upon each "step" rotation of the forming machine, a bottle body formed thereon is discharged from one of its form elements 51 by a withdrawing device, such as represented by the wipe-off band or bar 52.

The bottle bodies discharged from said machine are dropped or delivered initially, inversely or small end first, into a receiver 53, which in this instance constitutes also a gluing device somewhat similar to that shown by the parts 37, 39 and 40 in Fig. 2. That is, the top end of the bottle body is dipped into an adhesive for the necessary coating therewith, the said receiver 53 having an inverted frusto-conical center 53a through which the bottle end will extend into a body of liquid glue thereunder. The said bottle body is then next turned over, against and over a tilting edge 54, upon its intended base, into

the secondary position indicated by A on a feedboard or guide 55 leading to the operating table of the instant machine.

This turnover to operating position is effectuated by a device represented by the swinging contact arms 56 actuated by the aforementioned chain 48, through block or lug members 57 carried thereon, by impact against lower swing-arm portions or tripping to an independently impelled action (not shown), so as to swing at the proper moment in the feed progression. In other words, the feed of the bottle bodies is synchronized with the operation of the two machines.

From the position A the bottle body is moved next, as by an endless driven push member 58, to the third position B under a device or mechanism for dropping the mouth rings 34 thereonto. Such a device is represented at 59 and, in dotted lines, also in Fig. 5. This includes a chute or hopper (not individually referenced) in which a number of the mouth pieces 34 are stacked one upon the other from a suitable feed source. At the bottom end of said chute or hopper, a double escape device, indicated by the opposed pairs of pawls 60 and 60' at different levels, is so arranged and actuated as to release and drop the lowermost ring of the stack while engaging and holding the one next above. In other words, the opposing pairs of pawls 60 and 60' are alternately operated to engage under the edges of the rings at their respective levels, that pair at the lower level releasing to drop the lowermost ring at the proper moment onto a bottle body brought thereunder. The timing of this mechanism is of course related to the feed progression so as to operate at the proper moment.

From the aforementioned position B, following the drop of a capping ring thereonto, the bottle body is next and finally moved to position in one of the devices X, arrested therebefore, for the action of applying the mouth ring to its end. This final movement, like the preceding one, may be effected by the endless push member 58 or by another similar member. In some cases it may be effected by the push of the next successive bottle body into the position B, although this is not considered to be so desirable inasmuch as it may not always push the body sufficiently far to center properly within the arbor 17 of the topping device.

It will of course be understood that the mechanical arrangement for automatic feed, with gluing and mouth ring topping, of the bottle bodies from the forming machine to the topping machine of the instant invention may be varied and constructed in any number of different ways. That which is here described is merely elementary and only diagrammatically shown, the purpose being merely to illustrate how it may be done according to the intended purpose. In a combination arrangement of the two machines, the actuating elements may be very differently formed and quite differently operated, although their elementary purpose and accomplishment will be the same. The chief aim is to feed the bottle bodies from one machine to the other, with the proper preparation for the mouth piece application in transit, thereby eliminating the necessity to prepare and feed them to the topping devices by hand.

The handles 30 of th devices X are swung down to the operative position by a cam (not shown) engaging thereover as they leave the point of bottle body reception for ring application. Similarly the said levers are swung upwardly again to release position by another cam (not shown) engaging thereunder as they return to the point for reception of another bottle body. Upon the release the mouth applied or rimmed bottle bodies may be discharged from the table by an extractor or withdrawing device (not shown) directing them into a guide trough or chute 61. Said chute may conduct them either to a point of stacking one within another for convenient shipment, or to a subsequent machine for bottom attachment, forming a third phase or step in the production of paper milk bottles, and constituting another invention, for which a co-pending application, filed simultaneously herewith, has been made as a division or continuation in part of the invention set forth in my aforesaid application Serial No. 160,703.

Since various changes can be made in the construction and arrangement of parts, with different combinations and sub-combinations thereof, without departing from the spirit and scope of the invention, it is not intended to limit the same by the appended claims to the specific construction illustrated and hereinbefore described.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. Means for applying an edge rim or mouth fixture to the end of a tubular body, comprising a support in which said body is held in position for the operation thereon, a block member movable into engagement over the said end of the body having the rim to be applied placed loosely thereon, a cooperating member carried by and movable independently in said block member so as to engage a part of the rim and cause the rim to be received foldingly over the body edge with a squeeze between it and the surrounding block member as said block member is moved into engagement over the end of the body, and an obstructing member acting upon said cooperating member to relatively move the same so as to positively force the overfolded rim on the edge of the body out from the squeeze between it and the said block member when the block member is moved back from engagement over the end of the body.

2. A device for applying an edge rim or mouth fixture to the end of a tubular body, comprising a support in which said body is held in position for the application thereto, a block member movable into engagement over the said end of the body having the rim to be applied purchased loosely thereon, a plunger member carried slidably movable independently in said block member so as to engage a part of the rim and cause the said rim to be received between it and the block member with a folding over the edge of the body and with a tight squeeze thereof between the said parts on opposite sides as the block member is moved into engaging position over the end of said body, an actuating connection for moving the block member into and out of engaging position with a tubular body, and a sliding third member acting obstructively against said plunger member to move it so as to push the overfolded rim on the edge of the body out of the squeeze grip between the said member and the first-named block member when said block member is moved out of the engagement position.

3. A device for applying an edge rim or mouth fixture to the end of a tubular body, comprising a support including provision for holding the body thereon in position for the application

thereto, a recessed block member movable into engagement over and around the said end of the body having the rim to be applied thereto placed loosely thereon, a plunger member fitting into and carried slidably movable independently in said block, the said plunger member having a portion spaced from the surrounding wall of the block member and extending normally outward of the same so as to engage and cause the rim on the body end to be drawn foldingly over the edge thereof between itself and the block member with a tight squeeze between the two parts as the block member is moved into engaging position over the end of the body, an actuating connection for moving the block member into and out of engaging position with a tubular body, and a sliding third member acting obstructively against said plunger member so as to move it outward to positively push the overfolded rim on the edge of the body together with said body out of the squeezing grip between said plunger and block members when said block member is moved out of the engaging position.

4. A device for applying an edge rim or mouth fixture to the end of a bottle body, comprising a support including means for holding the body thereon in position for the application thereto, a recessed block member movable into engagement over and around the said end of the body having the rim to be applied thereto placed loosely on the same, an actuating connection for moving said member in opposite directions into and out of engagement with a bottle body, a plunger member fitting into and carried slidably movable in said block member independently in the same directions, the said plunger member having a portion spaced from the surrounding wall of the block member and extending normally outward of the same so as initially to contact a portion of the rim on the end of the bottle body as the block member is moved toward the same and then by obstruction of the rim to recede and admit other portions of the rim between itself and said block member with a folding action over and a squeeze upon the body end as the block member is continued in movement to engagement over said body end, and a sliding check member carried by the block member and acting obstructively against said plunger member so as to positively move the same outward and thereby eject the overfolded rim on the end of the bottle body with said body from the squeezing grip between said plunger and block members when the block member is moved away from the engagement position.

5. A device for applying an edge rim or mouth fixture to the end of a sheet bottle body, comprising an arbor having a support on which the bottle body is held in position for the application thereto, a recessed block member movable into engagement over and around the said end of the bottle body having the rim to be applied thereto placed loosely on the same, an actuating connection for moving said member in opposite directions into and out of engagement with a bottle body, a plunger member fitting into said block member and carried thereby independently slidably movable therewithin in the same directions, the said plunger member having a portion spaced from the surrounding wall of the block member and extending normally outward of the same so as initially to contact the central portion of the rim on the end of the bottle body as the block member is moved toward the same and then by obstruction of said rim to recede and admit the outward portions of the rim between itself and said block member with a folding action over and a squeeze upon said body end as the block member is further moved to engagement over the same, and a sliding check member also carried in the block member and independently movable therein acting by engagement against a fixed part of the arbor obstructively against said plunger member so as to move the same forceably outward of the block member and thereby extrude and release the rim overfolded bottle body from the squeeze grip between the two parts when the block member is moved back out of the engagement position.

6. Means for applying edge rims or mouth fixtures to the ends of paper bottle bodies, comprising a plurality of independently actuatable devices arranged in series upon a rotatable supporting surface, each of said devices consisting of an arbor having provision for centering the bottle bodies therein in position for the applicative action, a recessed block member mounted in the arbor in position for movement into engagement over and around the said end of a centered body having the rim to be applied thereto placed loosely on the same, an actuating connection for moving said member in opposite directions into and out of engagement with a bottle body, a plunger member fitting into said block member and carried thereby independently slidably movable therewithin in the same directions, the said plunger member having a portion spaced from the surrounding wall of the block member and extending normally outward of the same so as initially to contact the central portion of the rim on the end of the bottle body as the block member is moved toward the same and then by obstruction of said rim to recede and admit the outward portions of the rim between itself and said block member with a folding action over and a squeeze upon said body end as the block member is further moved to engagement over the same, and a check sliding member also carried by the block member and independently movable therein in the axial direction thereof acting by contact against a fixed portion of the supporting arbor obstructively against said plunger member so as to move the same forceably outward of the block member and thereby extrude and release the rim overfolded bottle body from the squeeze grip between the two parts when the block member is moved back out of or away from the engagement position.

7. A device for applying an edge rim or mouth fixture to the end of a tubular body according to claim 5, including, in combination, means for feeding tubular bodies successively into position for the applicative operation thereon.

8. In a device for applying an edge rim or mouth fixture to the end of a tubular body, including a block or head member movable into engagement over said end of the body having the rim to be applied placed loosely thereon, and a cooperating member carried by and movable independently in said block or head member so as to engage a part of the rim and cause the rim to be received foldingly over the body edge with a squeeze between it and the surrounding said block or head member as the former is moved into engagement position over the end of the body, the improvement which consists in a third member carried by and slidably movable independently in the block or head member and acting against both a part of said cooperating or second member

and a fixed surface such as a supporting part of the device for positively forcing the cooperating member outwardly of the block or head member and thereby expel and release the rim overfolded body from the squeeze grip between the two said members when the block or head member is moved out of said engagement position.

9. In a device or means for applying an edge rim or mouth fixture to the upper end of a tubular paper-bottle body, a support, an operating head or recessed block member movable into engagement over said end of the body held in position therefor and said head or block member having associated means for moving it to and from such engagement, a plunger centrally fitting into the head or block member and carried thereby independently slidably movable therewithin in the same directions, the said plunger having a portion spaced from the surrounding wall of the head or block member and extending normally outward of the same so as when said head or block member is moved into engagement over the body end to initially contact the central portion of the rim piece placed on said end for application thereto and then by obstruction of said rim piece to recede and admit the outward portions of said piece between the said plunger and surrounding head or block member with a folding action over and a squeeze upon the body end, and a cross-pin carried in said head or block member behind the said plunger slidably movable also independently in opposite directions in the same axial line for limited extents and acting both against said plunger and a fixed part of the support for positively forcing the plunger outwardly of the head or block member and thereby expel and release the rim-overfolded end of the body from the squeeze grip between said two parts when the head or block member is moved back out of the engagement positioning.

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