

Jan. 18, 1927.

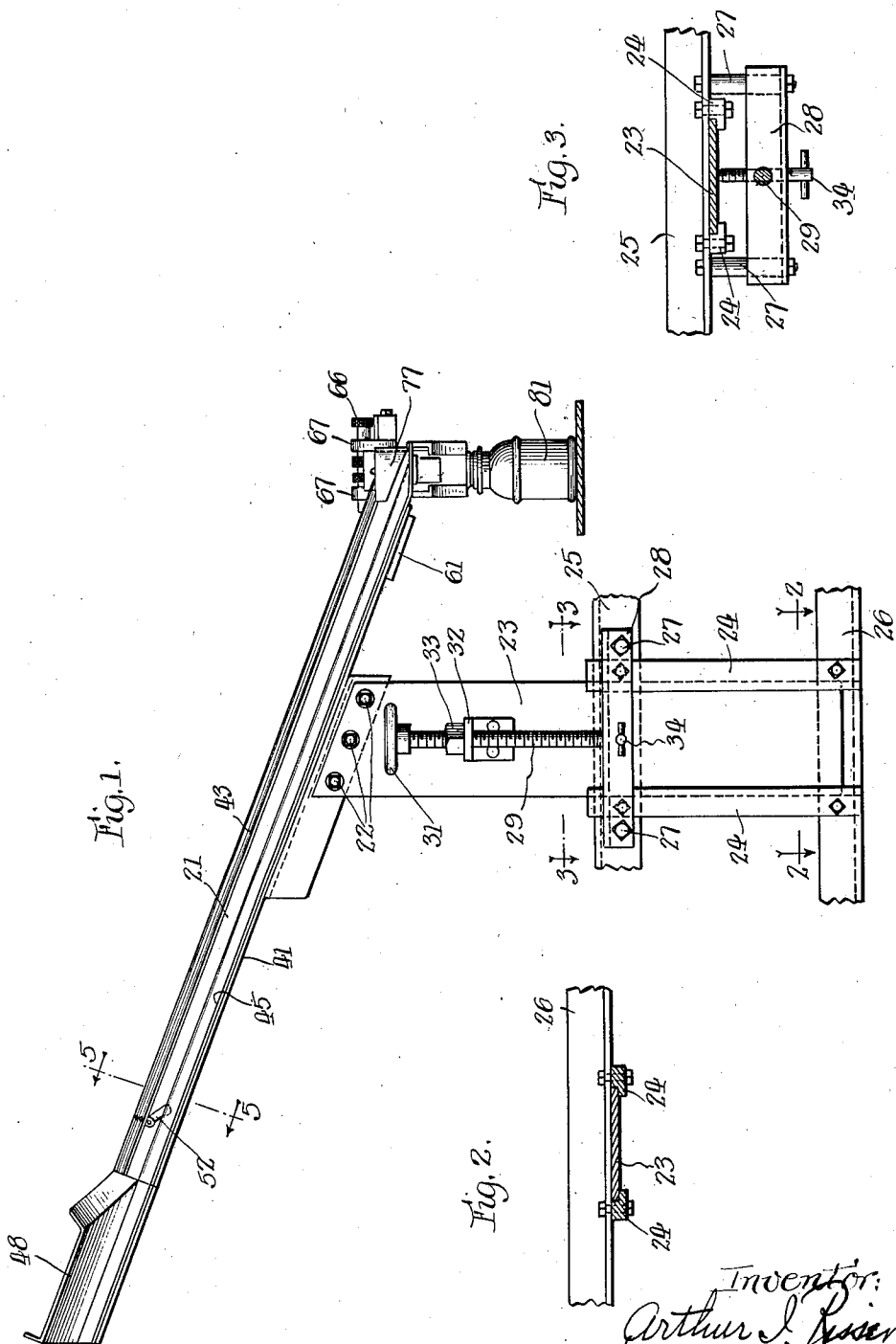
A. I. RISSE

1,615,040

CAP FEEDING APPLIANCE

Filed August 13, 1925

3 Sheets-Sheet 1



Inventor:
Arthur I. Risse
By Walter M. Fuller
Att'y.

Jan. 18, 1927.

1,615,040

A. I. RISSE

CAP FEEDING APPLIANCE

Filed August 13, 1925 3 Sheets-Sheet 2

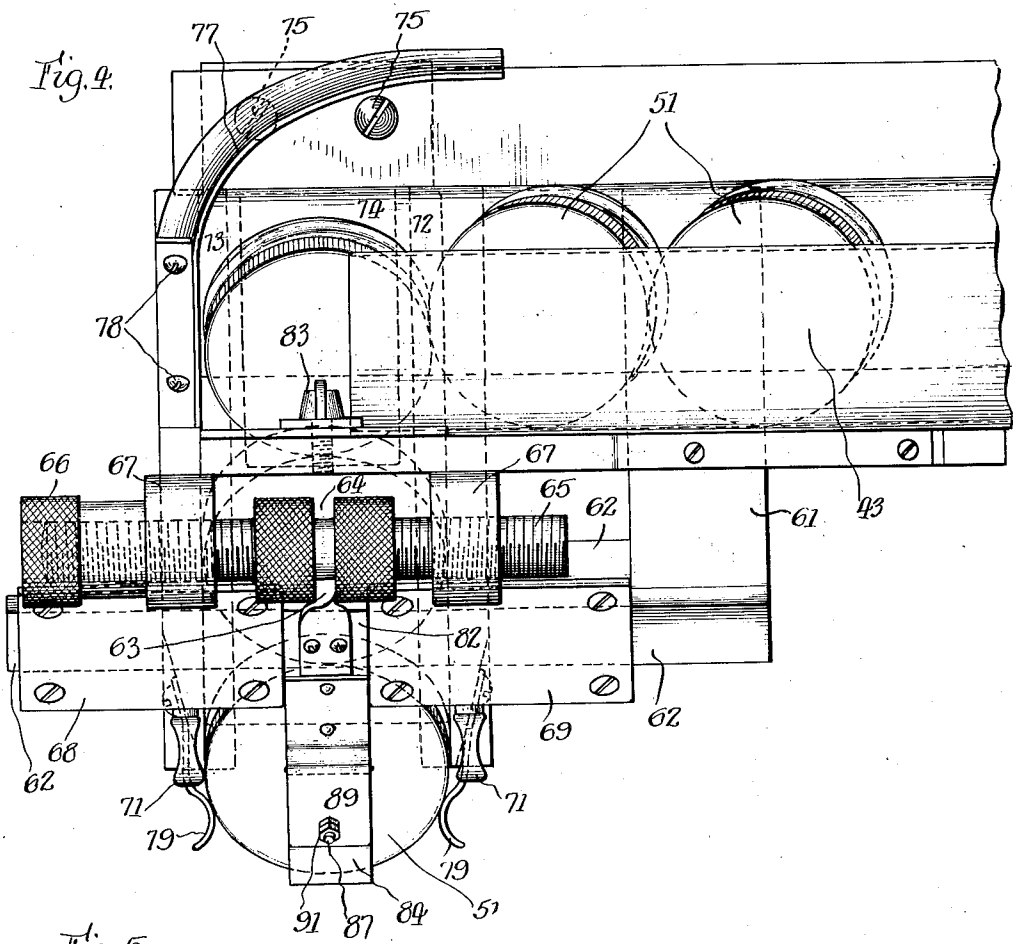
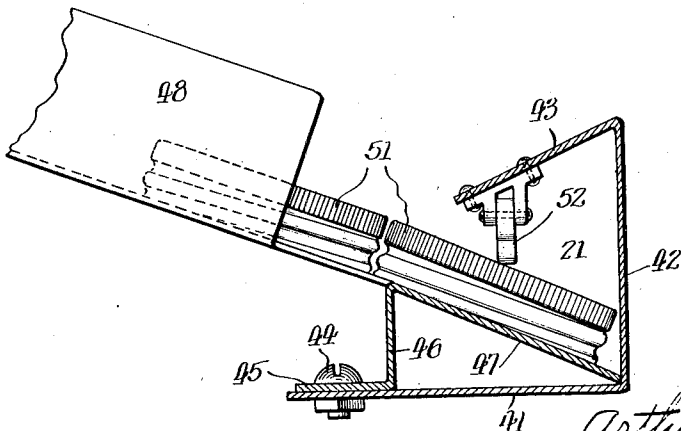


Fig. 5.



Inventor:
Arthur I. Risse
By Walter M. Fulk, atty.

Jan. 18, 1927.

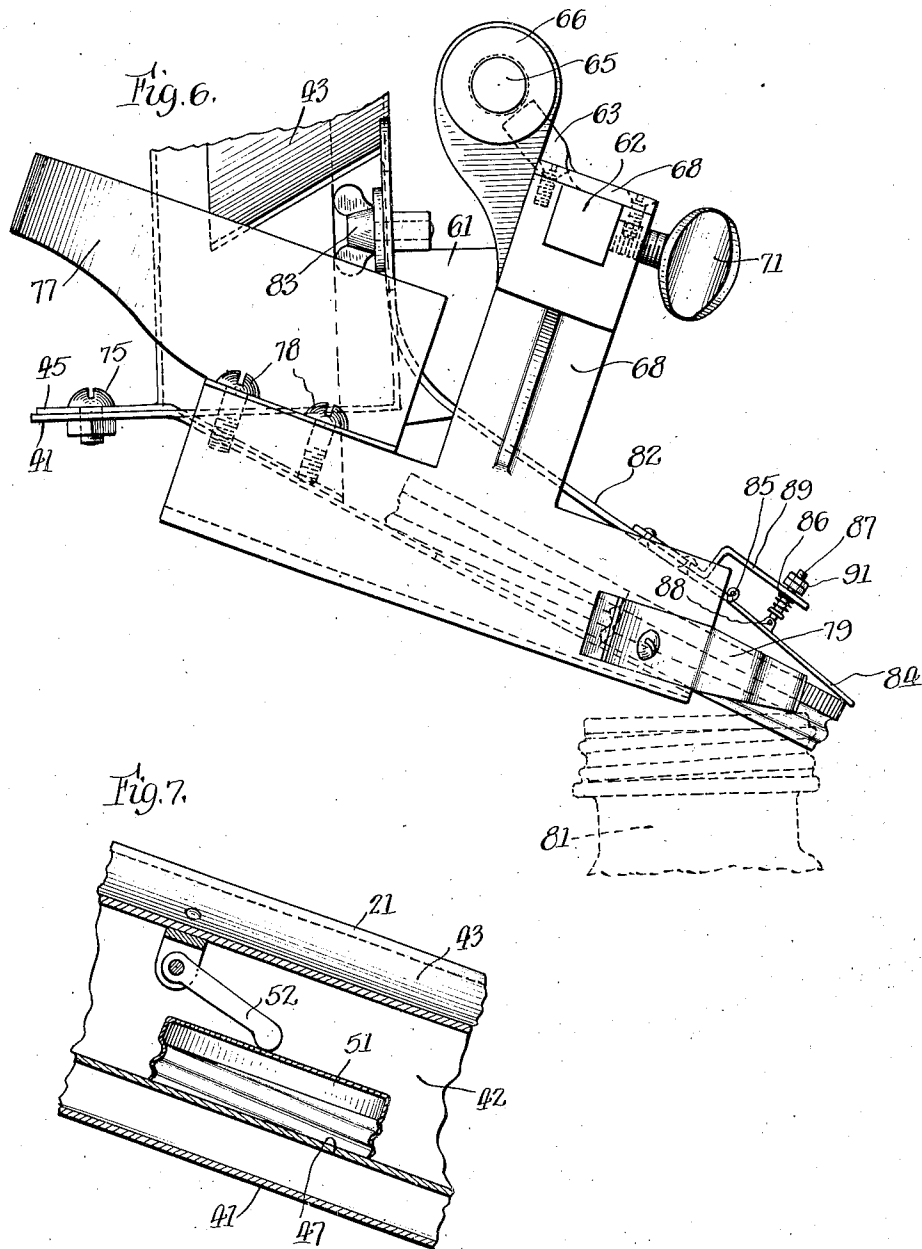
1,615,040

A. I. RISSER

CAP FEEDING APPLIANCE

Filed August 13, 1925

3 Sheets-Sheet 3



Inventor:
Arthur J. Rossier
By Walter M. Smith, Atty.

Patented Jan. 18, 1927.

1,615,040

UNITED STATES PATENT OFFICE.

ARTHUR I. RISSE, OF CHICAGO, ILLINOIS, ASSIGNOR TO U. S. BOTTLERS MACHINERY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CAP-FEEDING APPLIANCE.

Application filed August 13, 1925. Serial No. 49,897.

My invention relates to means for feeding caps, especially, but not restrictedly, those having screw-threads, or similar articles, so that they may be applied to the necks of containers, such as bottles, jars and the like.

One aim of the invention is the provision of a structure of this character, which is simple in construction, which can be produced economically and which will accommodate caps of different sizes.

Other advantages incident to the invention will become apparent from a consideration of the following detailed specification of a desirable embodiment thereof which is illustrated in the accompanying drawings, throughout the several views of which like reference characters have been employed to designate the same parts.

In these drawings:

Figure 1 is a fragmentary elevation of the construction;

Figure 2 is a fragmentary cross-section on line 2—2 of Figure 1;

Figure 3 is a similar horizontal cross-section on line 3—3 of Figure 1;

Figure 4 is an enlarged partial plan view of the machine;

Figure 5 is a cross-section through the cap-feeding chute on line 5—5 of Figure 1;

Figure 6 is a fragmentary end elevation of the appliance illustrating the manner in which a jar or bottle removes the foremost cap; and

Figure 7 is a fragmentary longitudinal section through the chute illustrating the detector for improperly inserted caps.

The appliance includes a vertically-adjustable, inclined chute, characterized as a whole by 21, mounted in any approved manner, as for example by bolts 22, on the upper end of an upright plate 23 slidable in vertical-guideways 24, 24 secured to portions 25 and 26 of the framework of the machine.

A short, horizontal, angle-bar 28 is mounted on studs 27, 27 on the part 25 of the frame, and such element 28 affords an abutment or support for the lower end of an upright screw 29 equipped with a handle 31 and passing through a threaded bracket 32 carried by the plate or slide 23, the screw being fitted with a lock-nut 33 designed to bear on the top face of the bracket.

This screw carries the weight of the chute and associated parts and imposes it through

the bar 28 on the machine-frame, turning of the screw, as will be readily understood, adjusting the position or elevation of the cap chute.

As is shown in Figure 5, the sloping chute comprises a plate bent longitudinally to provide a lower portion 41, a vertical abutment wall 42 and an upper or cover part 43 disposed at an inclination to the base section 41, the latter having mounted thereon, as by screws or bolts 44, another bent plate member, shaped to provide a base 45, an upright wall 46 of less height than the wall 42, and a sloping floor section 47 which extends down from the top margin of wall 46 to the junction of the parts 41 and 42.

Thus a longitudinal opening or slot is formed between the lower edge of the part 43 and the adjacent portion of the floor 47.

The upper part of such chute, at one side, is fitted with a laterally inclined, small, auxiliary or supplemental chute 48 which may be formed as a part of the plate of which the sections 45, 46 and 47 constitute portions or it may be a separate member supported in position in any approved or convenient way.

The round, screw-threaded caps or covers 51 laid in the entrance chute 48 will, by gravity, slide down into the main, long chute 21 and bear against its wall 42, gliding down such principal chute while maintaining such contact which determines its proper or correct path of travel.

It will be perceived that each cap or cover in the main chute 21 is inclined in two directions at right-angles to one another, to hold it in engagement with the guide-plates 42 while descending in the sloping chute.

Hence a chute or guideway of this character can accommodate caps of radially different diameters without adjustment of parts, all of the caps, regardless of their sizes, being positioned or located properly by the wall 42 during their automatic, gravity-effected, downward travel.

The caps or covers are assumed to be placed in the entrance chute closed end upward, but to preclude or prevent a cap from passing down the main chute with its open end uppermost, I mount a pivoted detent 52 on the under side of the top wall 43 and of such weight and shape, that, if it enters the open mouth of a cap as the latter comes along, it will arrest or stop the

passage of such cap and succeeding ones until the misplaced one is removed or properly replaced.

This detent easily rides over properly positioned caps as indicated in Figure 5.

Near the lower end of the chute, a casting 61 is fixed against the under side thereof and it has an extension 62 square in cross-section, disposed at one side of and lengthwise the chute.

On this part 62 a stationary bent finger 63 is secured, its end projecting into a circular or annular groove 64 (Figure 4) in a knurled screw 65 having complementary right and left-hand thread sections, an end of such screw having a readily accessible knurled lock-nut 66 for retaining the adjusted screw in position against unintentional turning.

The oppositely-threaded, spaced sections of the screw extend through correspondingly-threaded holes in ears 67, 67 of a pair of inverted T-shaped brackets 68, 69 slidably mounted on the supporting-bar 62, whereby turning of the screw 65 causes the two brackets to approach one another or recede from one another, as will be readily understood, and, in order that they may be retained or secured fixedly in adjusted relation, each is supplied with a thumb set-screw 71 designed to bear against the outer face of the bar 62 (see Figures 4 and 6).

Bracket 69 has a flange 72 and bracket 68 has a complementary flange 73 both designed to receive and support the caps 51 as they, during their descent in the chute, pass from the latter on to the spaced, transversely-disposed flanges 72 and 73 and, in order that the caps may not fall down between such flanges, I provide a correspondingly-sloping plate 74 between them mounted at its upper end by screws 75 on the extension of the part 45 which projects beyond the ends of the plate sections 43, 42 and 47.

As is shown in Figure 4, a curved guide-plate 77 is mounted by means of screws 78, 78 on the top of the bracket 68, such plate, in some cases, assisting the descending caps in making the right-angle turn.

The lower ends of the two brackets 68 and 69 are supplied with properly-shaped retaining companion springs 79, 79 which temporarily prevent further descent of the caps until a jar, bottle or like 81 (Figure 6) comes along on a conveyor not shown and by engagement therewith pulls the foremost cap out of such delivery chute in opposition to the slight or lesser retaining action of the two springs.

To hold the most advanced cap down in proper position, on the end of a suitably-supported bar 82, adjustable as to position

by its retaining screw and thumb-nut 83, I pivot or hinge a plate 84 at 85 and to press this downwardly on to the top of the cap I use a coiled spring 86 encircling a rod 87 hinged at 88 to the top of the plate and slidable through an aperture in a guide-bracket 89 the upper end of the rod having one or more limiting nuts 91 which restrict the descent of the plate, the latter being yieldingly held down to its work by the spring which bears at its opposite ends against a collar on the rod and against the under face of the part 89.

From the above description and associated illustration, it will be seen that the cap introduced by hand into the entrance chute slides down the latter into the main chute and glides down this in contact with the wall 42, occupying or extending out of the longitudinal opening along one side of the chute, so that the appliance is readily adapted to accommodate caps of different sizes.

The caps pass in succession on to the flanges 72 and 73 and the intermediate plate 74, turn the corner and slide down into contact with the retaining springs 79 from which they are abstracted by the passing jars or bottles with which they automatically become associated.

The adjustment of the several parts to accommodate caps of different sizes will be quite apparent.

Those trained in this art will readily understand that the invention is not limited and restricted to the precise and exact details of structure presented since these may be modified within comparatively wide limits without departure from the heart and essence of the invention and without the sacrifice of any of its substantial benefits and advantages.

I claim:

In a construction of the character described, a chute having a longitudinal guide-wall, a supporting wall inclined to feed bodies thereon lengthwise the chute and also inclined toward said guide-wall to maintain the bodies in contact with the latter during such travel, a second chute at the lower end of said first chute disposed at an angle thereto and designed to receive the bodies therefrom, said second chute being composed of two companion parts, means to adjust said parts toward and from one another to adapt the chute to accommodate bodies of different sizes, and a guide-plate on and adjustable with one of said parts to assist the bodies in turning from one chute to the other.

In witness whereof I have hereunto set my hand and seal.

ARTHUR I. RISSER. [L. S.]