

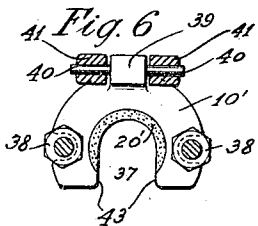
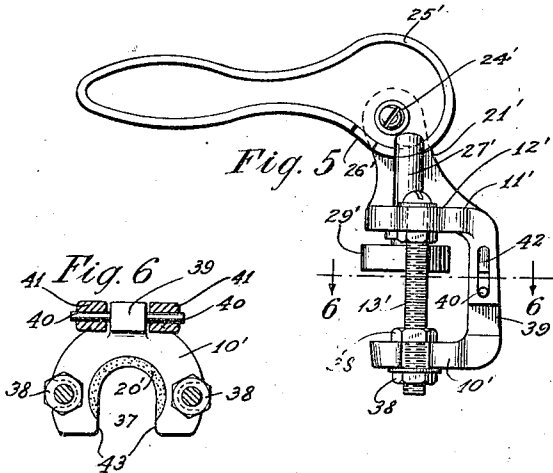
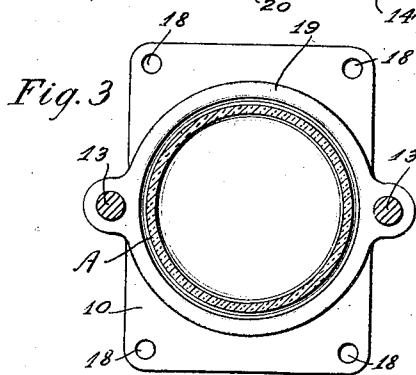
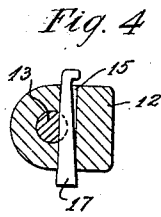
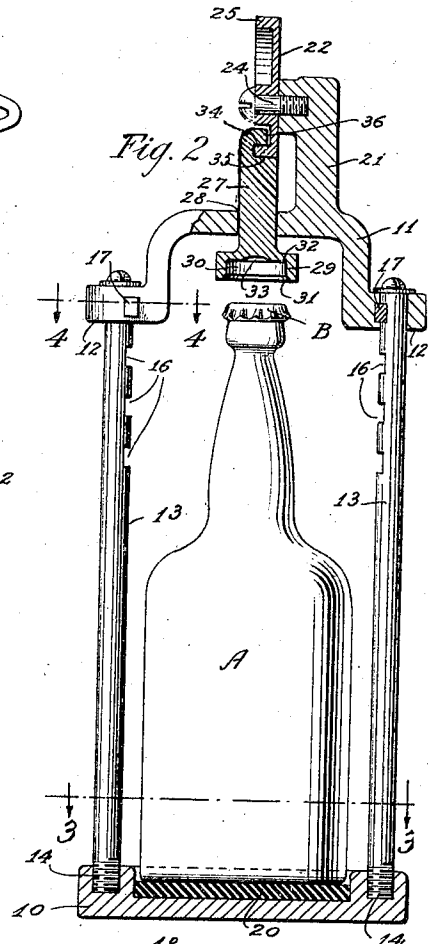
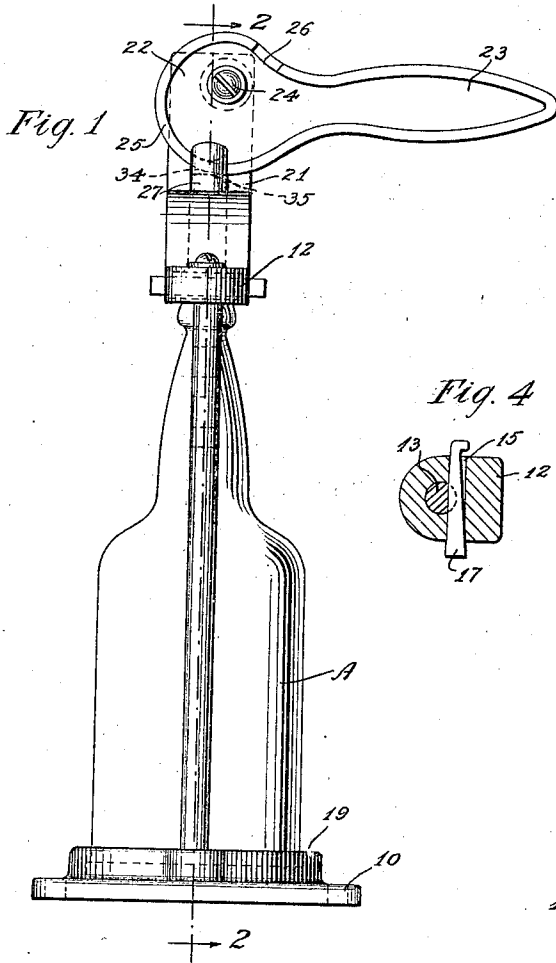
May 1, 1923.

O. S. PLATT

1,453,405

BOTTLE CAPPER

Filed Aug. 19, 1921



INVENTOR.
Ooron S. Platt
BY
G. H. Braddock
ATTORNEY.

UNITED STATES PATENT OFFICE.

OCRON S. PLATT, OF BRIDGEPORT, CONNECTICUT.

BOTTLE CAPPER.

Application filed August 19, 1921. Serial No. 493,581.

To all whom it may concern:

Be it known that OCRON S. PLATT, a citizen of the United States, and resident of Bridgeport, in the county of Fairfield and State of Connecticut, has invented certain new and useful Improvements in Bottle Cappers, of which the following is a specification.

This invention relates to an improved device for fastening ordinary crown seals upon bottles.

The object of the invention is to provide a novel bottle capper of simple and compact construction which can be economically manufactured and will be efficient and durable in use, the device consisting of inexpensive parts most of which can be castings.

With the above object in view, as well as others which will appear as the specification proceeds, the invention comprises the construction, arrangement and combination of parts as now to be fully described and as hereinafter to be specifically claimed, it being understood that such changes in details of construction and arrangement of parts may be made as fall within the spirit of the invention and the scope of the claims.

In the accompanying drawing forming a part of this specification,

Fig. 1 is an elevational view of a bottle capper embodying the features of the invention;

Fig. 2 is a sectional view on line 2—2 in Fig. 5, looking in the direction of the arrows, showing a portion of the device in elevation and disclosing the cam lever in a different position;

Fig. 3 is a sectional view as on line 3—3 in Fig. 2, looking in the direction of the arrows;

Fig. 4 is a sectional view on line 4—4 in Fig. 2, looking in the direction of the arrows;

Fig. 5 is an elevational view of a modified form of bottle capper, also embodying the features of the invention; and

Fig. 6 is a sectional view on line 6—6 in Fig. 5, looking in the direction of the arrows.

Referring more particularly to the form of the invention disclosed in Figs. 1 to 4, inclusive, of the drawing, 10 denotes a bottle supporting member or base which may be a casting as shown, 11 denotes a yoke de-

sirably having integral feet 12, and 13 denotes tie rods adapted to the purpose of spacing the base 10 and yoke 11 at any preferred distance apart, depending upon the size of bottle to be sealed, the adjustment of the yoke upon the tie rods being made in any suitable manner. As clearly disclosed in Figs. 2 and 4, the lower ends of the tie rods may be secured in or to the base in any fashion, as at 14, and the upper portion thereof may slidably engage the feet 12, 15 denoting key ways, one in each foot, and 16 denoting key slots, several in each tie rod, adapted to receive keys 17, one for each tie rod, whereby the yoke can be adjusted to any distance from the base and there fixed, as will be understood.

The bottle supporting member or base 10 may be provided with holes 18 for the reception of means (not shown) for securing the bottle capper upon a stand, table, or the like, and may include an upstanding, circumferential flange 19 of a diameter sufficient to freely receive any ordinary bottle A, numeral 20 denoting a resilient seat of any suitable material, upon the base and within the circumferential flange, against which the bottom of the bottle is adapted to rest.

The yoke 11 has extending upwardly therefrom a cam support 21 upon which a cam lever, consisting of an elliptical cam 22 having an increasing pitch or lead, the periphery of which elliptical cam describes an elliptic epicycloidal curve; and a lever 23 preferably integral with said cam, is rotatably mounted as at 24, and the marginal edge of the cam is provided with a continuous rib or flange 25 notched at the location indicated 26. Preferably, yoke 11, its feet 12 and cam support 21 are constituted by a single casting, and the cam lever, together with its rib or flange, is constituted by a different casting.

A plunger 27, slidably fitted in an opening 28 in the yoke 11, carries a closing die 29 upon its lower end, said plunger and closing die being likewise constituted by a casting. The closing die has an inner, circumferential wall 30 which is beveled as at 31 for its full circumference, and a top wall 32 provided at its center with a concavity 33 for a purpose to become obvious. The upper portion of the plunger is provided with a suitable groove 34 to slidably receive rib

or flange 25 of the cam, the groove being constructed to produce a bearing 35 for the rib or flange when the plunger is to be lowered and a pull-back 36 for the plunger when the same is to be elevated, all as will be clear without further description.

In Fig. 2 of the drawing I have disclosed the cam lever in the elevated position of the closing die, and a seal B properly situated upon the top edge of the crown of a bottle in position to be fastened down by said closing die. As will be noted, the circumferential wall of the closing die is of a diameter slightly greater than the diameter of the base of the seal, and the lower, beveled portion of said circumferential wall is of a diameter to engage the skirt of the seal when the plunger is lowered. Obviously, as the closing die moves downwardly, the beveled portion first engages the skirt of the seal to push the lower face of the base of said seal firmly against the top edge of the crown of a bottle. As the closing die is forced further downwardly, the beveled portion passes beyond the skirt and the circumferential wall itself snugly envelops said skirt to force it, in usual manner, into close engagement with the more or less rounded bead customarily situated upon the crown of a bottle adjacent its top, open edge, to be securely fastened upon said crown. When then the closing die is elevated, it will readily slide off of the seal. It will now be seen that the purpose of the concavity in the top wall of the closing die is to provide space to receive that part of the base of a seal which may "pucker" by reason of being slightly larger in diameter than is the circumferential wall of the closing die.

It is apparent that the upward and downward movements are imparted to the closing die by simply rotating the elliptical cam upon its fulcrum. That is to say, the cam lever is moved from the position in which shown in Fig. 2 to that in which shown in Fig. 1 when a seal is to be fastened down, and from the position in which shown in Fig. 1 to that in which shown in Fig. 2 when the closing die is to be removed from a fastened seal. It is also apparent that, while the cam lever is constructed to occupy but little space, great pressure can be exerted against the seals, the elliptic epicycloidal curve of the periphery of the cam making it possible that the rib or flange can at all times bear centrally upon the plunger, that more pressure can be exerted toward the end of the stroke with the same power applied (at which time the cap is crimped and more pressure is needed), and necessitating the use of but a relatively short cam lever to provide the necessary pressure.

Referring to the modified form of the invention disclosed in Figs. 5 and 6, it is to be remarked that the bottle capper there shown

consists of the essential elements of the device already fully described. The cam lever may be constructed exactly as is the cam lever of the other figures, the notch 26' in the rib or flange 25' being for the same purpose as is the notch 26 in the rib 25, i. e., simply for convenience of assembling the plunger with the cam lever, and being located upon a portion of the cam making it impossible for the plunger to become removed from the cam lever so long as the fulcrum of the cam lever is fixed, as will be understood. The plunger 27' and the closing die 29' may be a casting duplicating the similar casting of the form of the invention disclosed in Figs. 1 to 4, and the engagement between the plunger 27' and the rib or flange 25' may be the same as before. The yoke 11' may be a casting integrally carrying equivalent feet 12' and an equivalent cam support 21' upon which the cam is rotatably mounted as at 24', and equivalent tie rods 13' may be fastened in the feet 12' to adjustably carry the bottle supporting or hook member 10', best shown in Fig. 6 and desirably a casting, capable of fitting beneath the more or less rounded bead, hereinbefore referred to, upon a bottle crown, numeral 20' denoting an equivalent resilient seat, located upon a chamfered portion of the hook member adjacent an opening 37 thereof through which the bottle neck is adapted to pass, and against which a major part of the lower portion of said bottle bead presses when the closing die is manipulated to do its work in the manner already described and as will be evident. In the present instance the upper ends of the tie rods are fixed in the feet 12' and each tie rod is threaded to receive nuts 38 one of which is arranged above and the other below the hook member. The yoke 11' and the hook member 10' may each be provided with suitable guides to assist the tie rods in insuring the aligning positions of the yoke and hook member, or these guides may be dispensed with. As shown, the hook member has a single guide 39 from the opposite sides of which a pin or pins 40 extend, and the yoke has a pair of guides 41 each with an elongated slot 42 to receive the end portions of the pins. The hook member 10' is made adjustable for convenience in assembling. Obviously, it can be integral with the yoke 11' to be located at suitable fixed distance therefrom.

When the bottle capper of Figs. 5 and 6 is to be utilized to seal a bottle, it is manipulated in exactly the same manner as hereinbefore explained in connection with the device of Figs. 1 to 4, except that the bottle supporting member in the present instance is arranged beneath a bead upon the crown of a bottle and adjacent the top, open end thereof, as will be evident. By chamfering the hook member adjacent the opening thereof

which receives the neck of a bottle, raised or protruding edges 43 are provided adjacent the mouth of said opening, insuring it that the beads cannot become removed from their seats when pressure is being applied by means of the cam.

Having thus fully described the invention, what I claim is new and desire to secure by Letters Patent is:

1. A bottle capper consisting of a bottle supporting member, tie rods thereon, a yoke upon the tie rods and spaced from the supporting member, the yoke having an opening and carrying a cam support consisting of an upstanding lug with bearing surface on one side thereof, a cam pivoted upon the cam support, a closing die with plunger slidably arranged in the opening in the yoke, the plunger and cam having operative connec-

tion on one side only of said plunger and cam, and means for actuating the cam to depress the plunger.

2. In a device of the character described, a closing die having an inner, vertically disposed circumferential wall, and a horizontally disposed top wall provided with an air entrapping depression, said top wall adapted to bear against a considerable portion of a bottle seal when fastened down on a bottle, and said air entrapping depression serving to render the closing die easily removable from the fastened down seal and of receiving a portion of said seal which may pucker.

Signed at Bridgeport, in the county of Fairfield, and State of Connecticut, this 18th day of August, A. D., 1921.

OCRON S. PLATT.