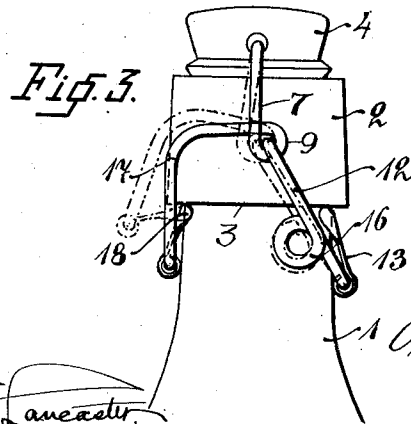
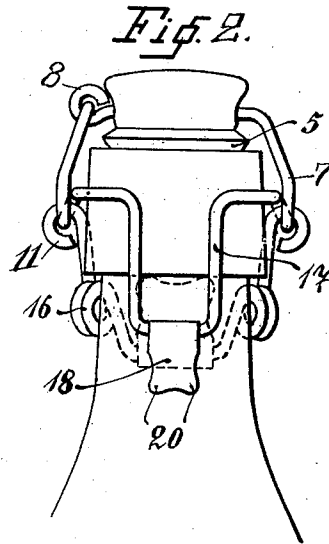
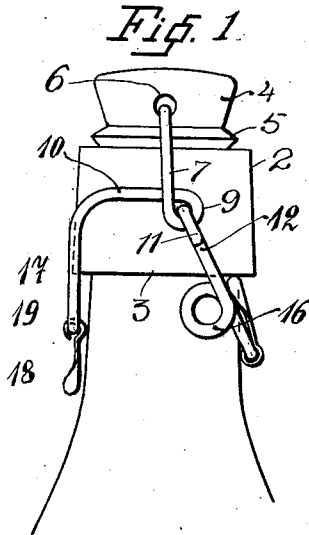


A. KENNERKNECHT.
BOTTLE CLOSING DEVICE.
APPLICATION FILED NOV. 25, 1911.

1,058,867.

Patented Apr. 15, 1913.



Witnesses:
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UNITED STATES PATENT OFFICE.

ADALBERT KENNERKNECHT, OF COLOGNE, GERMANY.

BOTTLE-CLOSING DEVICE.

1,058,867.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed November 25, 1911. Serial No. 662,360.

To all whom it may concern:

Be it known that I, ADALBERT KENNERKNECHT, a citizen of the Kingdom of Prussia, and resident of Cologne, Rheinland, Germany, have invented new and useful Improvements in Bottle-Closing Devices, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of lever stopper or closing devices for bottles in which the said device is not permanently connected to the bottle, but is separated from it when the bottle is opened. The chief advantage of such devices is that both bottle and closing device can be separately, and therefore better and more carefully cleaned. A further advantage lies in the fact, that the bottles when passing the usual cleansing and filling machines can do so without their stoppers which is impossible with bottles having permanently attached closing means. For this reason the working and construction of the cleaning machines can be greatly simplified.

The object of my invention is to construct a simple and yet perfect closing and yet removable device, which is handy for ordinary use and which also answers all requirements when sterilizing the contents of the bottle. To effect this, I use a bottle stopper of the usual type and connect the same by means of a member or bridle which fits over one side of the bottle neck while at the opposite side a double knee tightening lever is used, the shorter member of which is free and adapted to butt underneath a shoulder on the neck, where it is tightened by pressing down. In order to make the closing device suitable for sterilizing purposes, it is possible to provide upon the aforesaid guide member or bridle a second tightening member, similar to that of the tightening lever, which together with the guide member forms a second lever-tightening device, by means of which the bottle stopper can be pressed more firmly after sterilizing for instance, and will then remain permanently tight.

In the accompanying drawing Figure 1 shows a construction very suitable for sterilizing purposes. Fig. 2 is an elevation at right angles to Fig. 1, and Fig. 3 illustrates the device according to Fig. 1 with both sides closed down and tightened.

The top of the bottle 1 to which the closing

device is applied, is provided with the usual collar 2, the lower edge of which is at right angles to the neck so as to form a shoulder 3. The stopper 4 which is preferably made of porcelain or similar hard substances rests by means of interposed rubber rings 5 upon the bottle opening, and is provided with a transverse bore 6, through which the upper horizontal portion of the member 7 is passed, said member being of bent wire and terminating in usual manner in a loop at 8 at one end and communicating with another loop at the other end, the two arms of this member extend a certain distance downwardly at both sides of the bottle head and have formed in them two eyes or loops 9 from which a semi-circular part 10 extends around the one side of the bottle top. Two end loops 11 of U-shaped part 12 communicate with the two loops 9.

When sterilizing the contents of bottles, it is necessary that the closing device allows some escape of vapors which rise during the heating in order to prevent the bottles from being cracked through excessive pressure, and I therefore provide the two side arms of a bridle 12 with eyes or loops 16 which are bent from a bridle wire in one or more turns and which resiliently limit the tension of the closing device to such an extent, that certain steam pressure will overcome this tension and lift the bottle stopper 4 sufficiently to let the surplus steam escape. As, however, such closing devices cannot be pressed lightly enough to answer all requirements during the transport of bottles, and to remain permanently tight as is necessary to maintain the sterilized contents of the bottles, I provide this form of closing device which is suitable for sterilizing with an additional tightening device, which is preferably provided upon the member 10. The middle portion of this member 10, as can be seen from Figs. 1 to 3, is provided with a U-shaped extension 17 which is bent downwardly and reaches a certain distance below the shoulder 3 of the bottle top. This extension 17 carries upon its horizontal center portion, and opposite the tightening link 13, another tightening link 18 turnably arranged and constructed similar to the link 13, i. e. it consists of sheet metal and is hinged at the horizontal part of the U-shaped extension 17 by a rolled portion 19 and has its free ends provided with a slight curve and rounded corners 20 which corre-

spond with the curvature of the neck of the bottle.

After the main tightening device consisting of members 12 and 13 has been closed 5 and after a corresponding bending out of the resilient U-shaped member 10, the free end of this auxiliary link 18 can be inserted under the shoulder 3, as shown in dotted lines in Fig. 5, and when pressed inwardly 10 also press the closing device toward the side of the guide bridle 10 more or less tightly. The tension which is produced depends upon the length of the auxiliary link 18 and can be suitably selected so as to obtain a perfect 15 and permanently tight closing of the device after the sterilization. During the sterilizing process the auxiliary closing device of course remains open as can be seen from Fig. 1, while it can be closed after this process in the aforesaid manner without previously opening the main closing device. 20

I do not limit myself to the construction of the device shown in the drawings. For instance, I may vary the construction of the 25 various bridles and other wire parts to make the same suitable for use on differently shaped bottles. Also the links 13 and 18 may be made of some other strong material, metallic or non-metallic instead of sheet

metal and suitably and turnably connected 30 to the bridle 12 or 10 respectively.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:— 35

In combination with a bottle having a shouldered portion, a stopper for the bottle, a wire stopper member extending about a portion of the neck of the bottle and having a projecting yoke, a strut fastening element 40 pivoted to the yoke and adapted for engagement with the shouldered portion of the bottle neck, said member being bent to form eyes on opposite sides of the bottle neck and extending in transverse engagement with 45 the stopper with the ends of the said member connected with each other, a wire bail connected with the oppositely disposed eyes of said member, and a strut fastener pivoted to said bail and adapted for engagement with 50 the shouldered portion of the neck of the bottle.

In testimony whereof I affix my signature in presence of two witnesses.

ADALBERT KENNERKNECHT.

Witnesses:

PAUL BREDDIN,
FERD. ENGELS.