

(No Model.)

R. HERZ.
DEVICE FOR CLOSING BOTTLES.

No. 515,472.

Patented Feb. 27, 1894.

Fig.1.

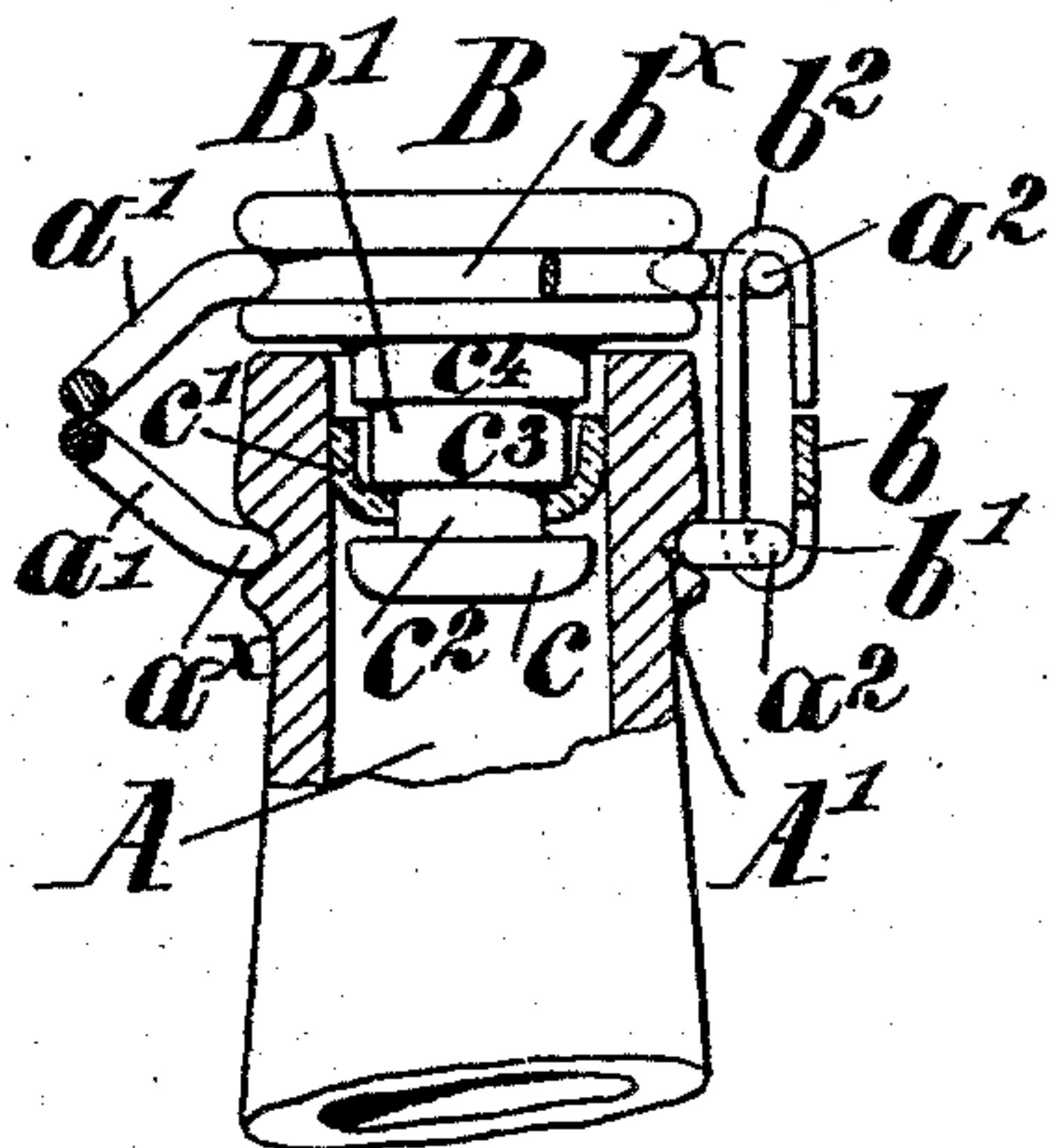


Fig.2.

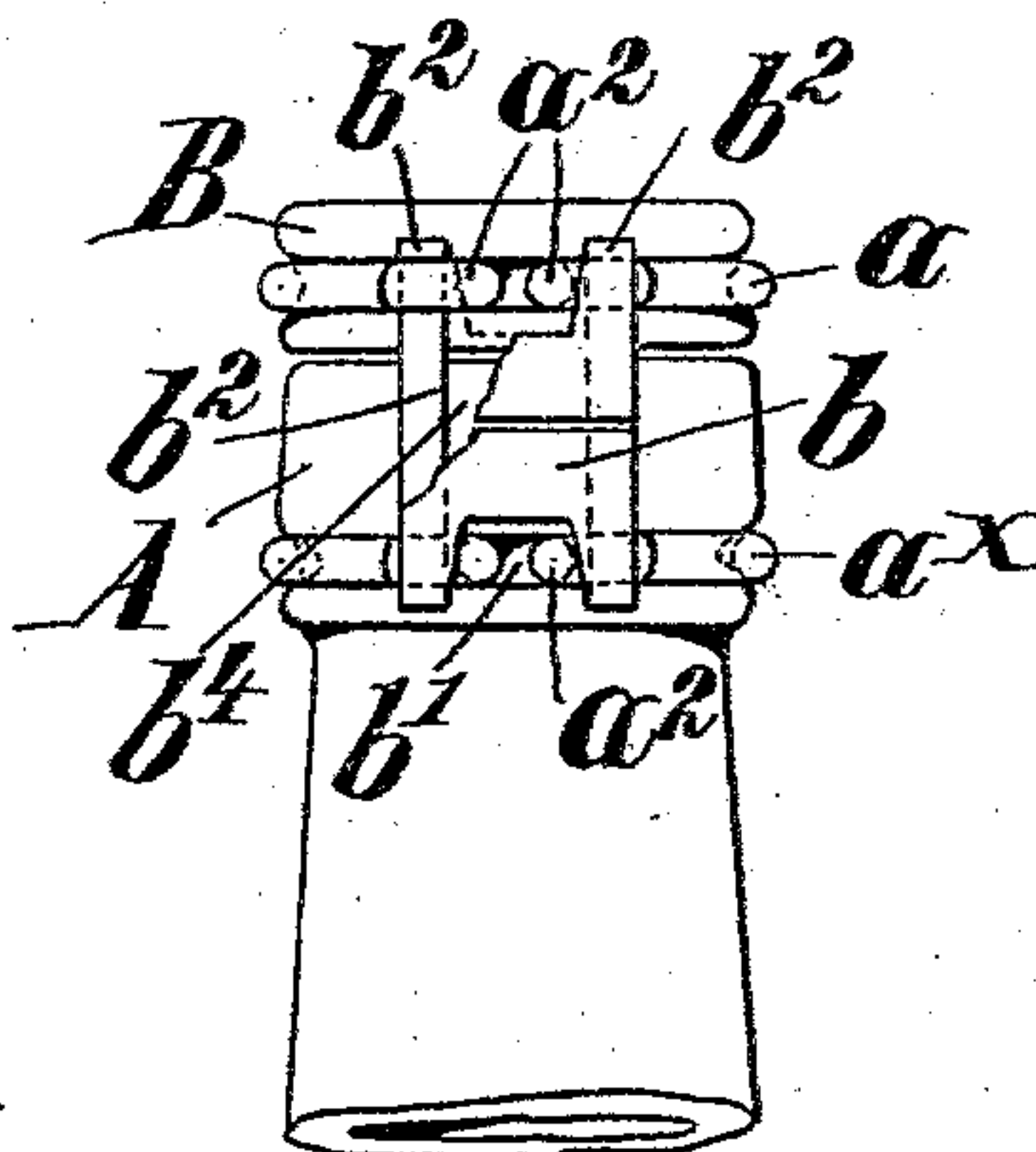


Fig.2^a.

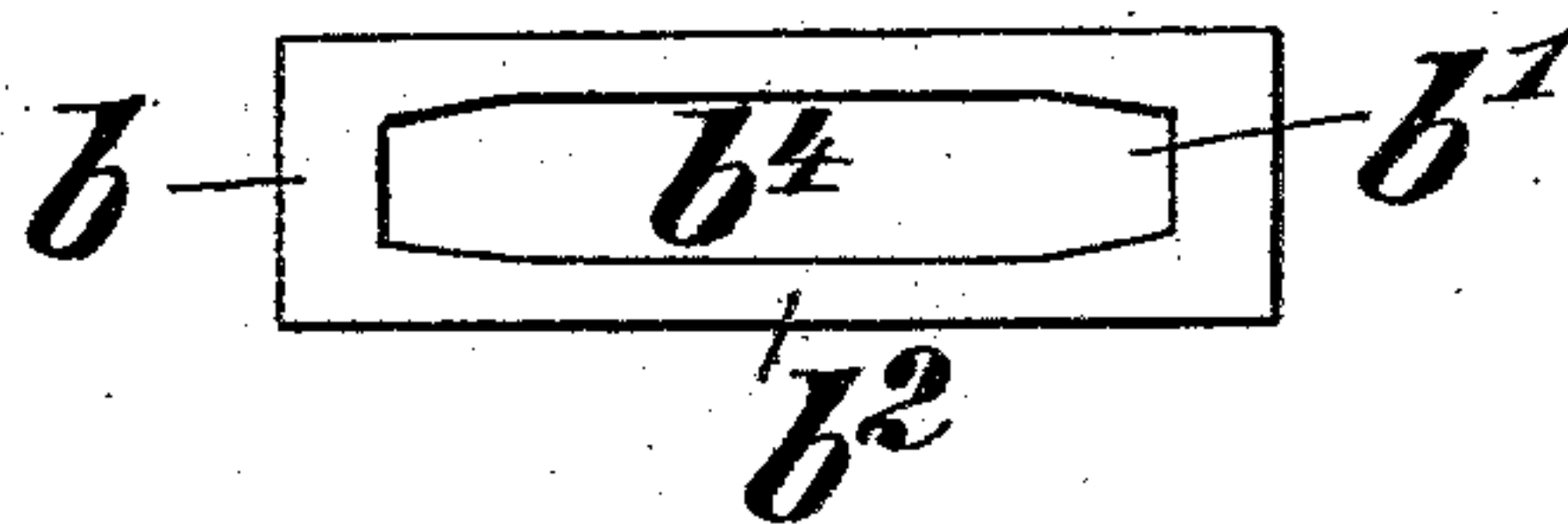


Fig.3.

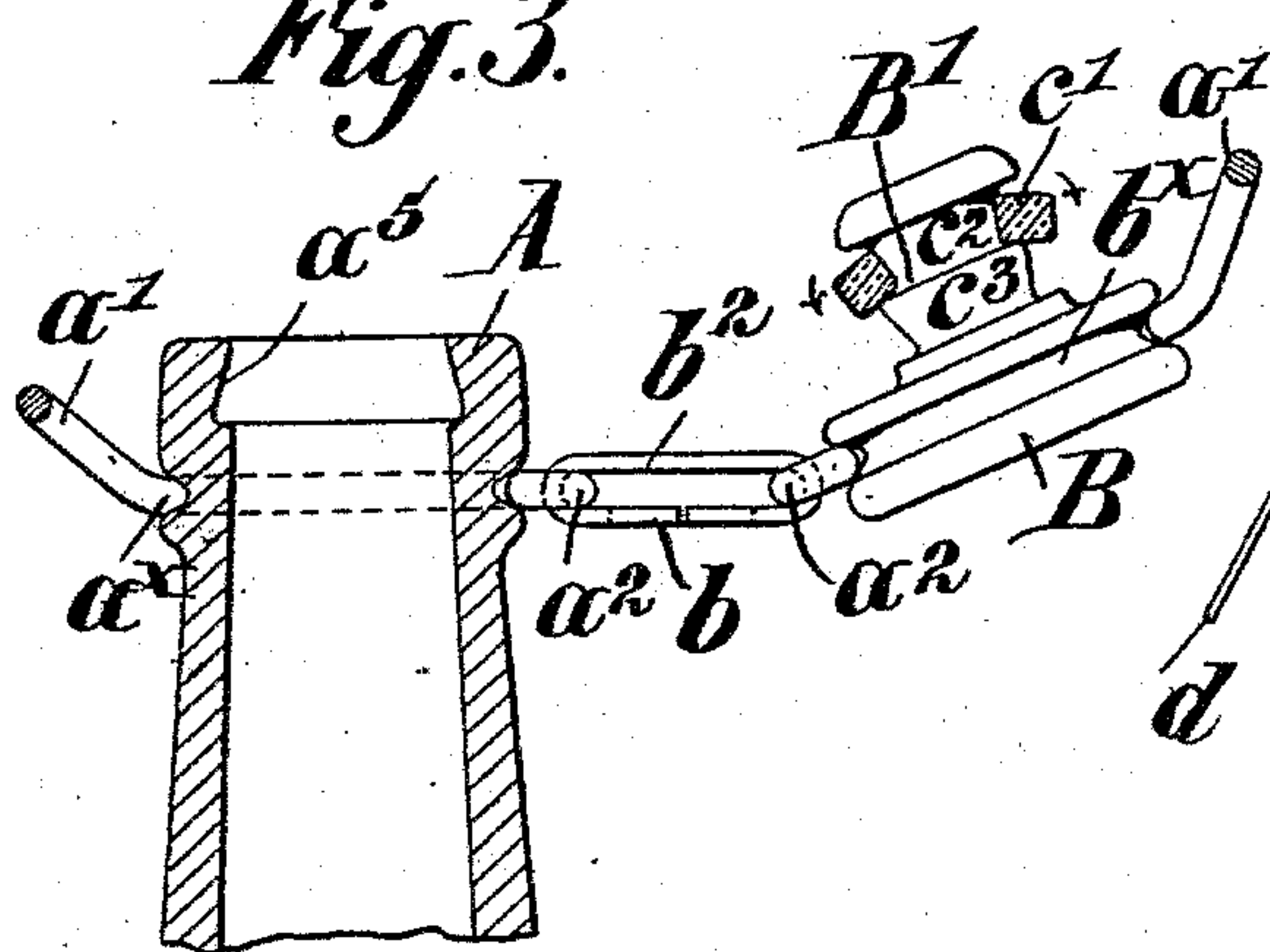
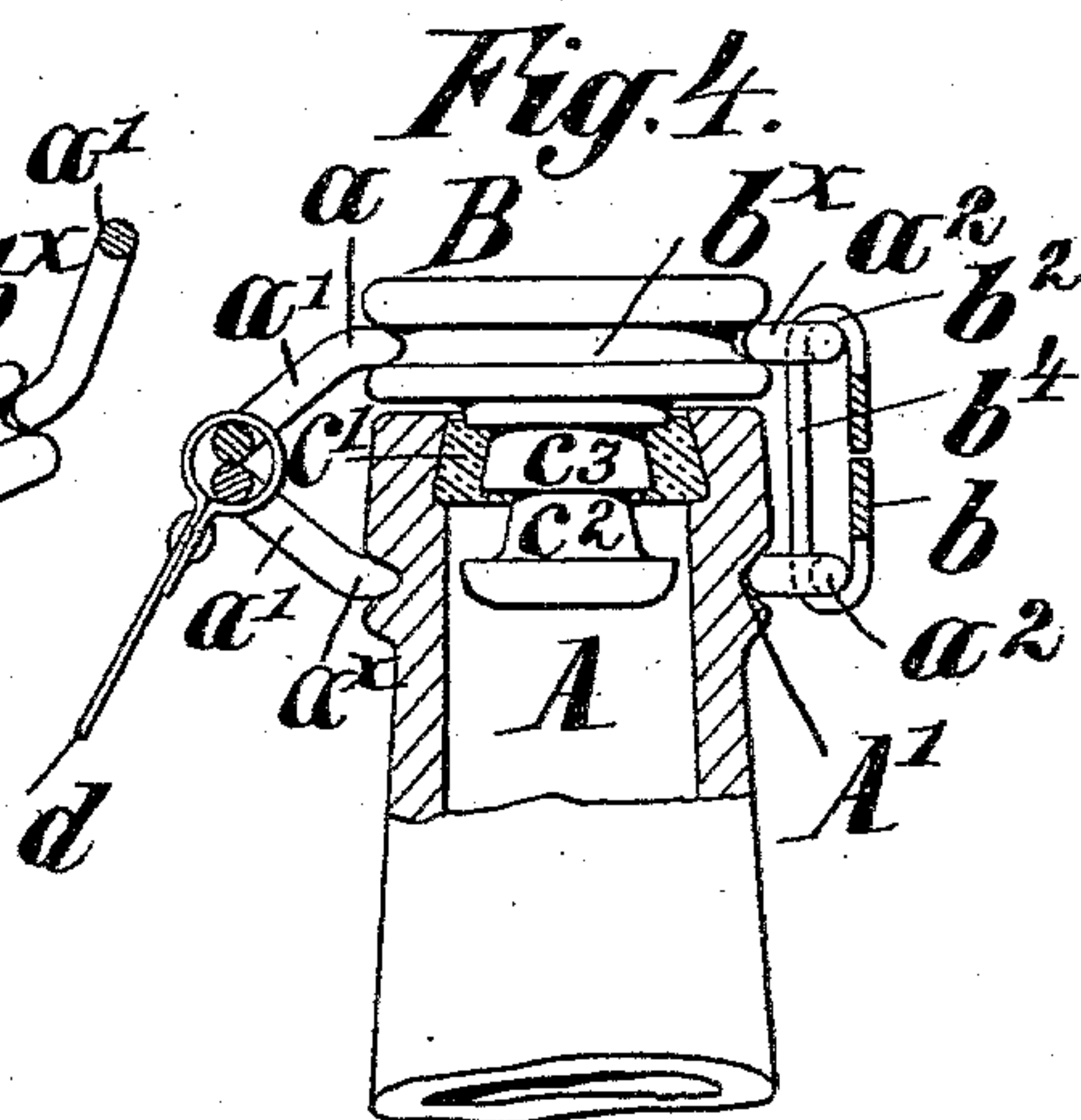


Fig.4.



Witnesses:
H. G. Dieterich
Henry Orth

Inventor:
Richard Herz
By Henry Orth atty.

UNITED STATES PATENT OFFICE.

RICHARD HERZ, OF VIENNA, AUSTRIA-HUNGARY.

DEVICE FOR CLOSING BOTTLES.

SPECIFICATION forming part of Letters Patent No. 515,472, dated February 27, 1894.

Application filed April 13, 1893. Serial No. 470,239. (No model.)

To all whom it may concern:

Be it known that I, RICHARD HERZ, a subject of the Emperor of Austria-Hungary, residing at Vienna, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Devices for Closing Bottles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention has relation to bottle stoppers and particularly to stoppers combined with means for the ready withdrawal of such stopper from its seat in the neck of the bottle to which it is applied.

It is the purpose of my invention to provide the stopper with means, as a lever, whereby it may be readily moved to or from its seat in the neck of the bottle and at the same time to provide a stopper that by slight structural modification is adapted for use with bottles intended for the storage either of non-gaseous or gaseous liquids. But that my invention may be fully understood, I will describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional side view illustrating a stopper more especially adapted for use with bottles designed for the storage of non-gaseous liquids. Fig. 2 is a like end view, the hinge strap being partly broken away, said hinge strap being shown in plan view in Fig. 2^a before it is bent to shape. Figs. 3 and 4 are sectional views illustrating a stopper more especially adapted for use with bottles designed for the storage of more or less gaseous liquids, the stopper in Fig. 3 being shown removed from the neck of the bottle and means shown in Fig. 4 to prevent or indicate the unauthorized tampering with the stopper.

Similar symbols of reference are employed to indicate like parts wherever such may occur in the above-described figures of drawings.

As will be seen, A indicates the neck of the bottle and B the stopper. The means for manipulating the stopper B and connecting the same with the neck of the bottle are the

same in construction wherever shown in the drawings and they comprise two double bows each forming a loop handle and hinge pintles, and a hinge strap connecting the two loops. Each loop, a or a^x with its handle or bail and hinge pintles is formed of a single piece of wire, one of these loops being applied to the neck A of the bottle, which is provided with a suitable seat as a groove A' , for its reception, the other being applied to the stopper, which for a like purpose has a peripheral groove b^x formed in its head. As both loops are alike in construction the description of one of them will suffice. The wire used is bent upon itself to form an angle or substantially into V-shape, the angular end being then bent in a direction perpendicular to the longitudinal axis of the legs to form a bail or handle a' , so that when the completed loops are applied to the neck of the bottle and to the stopper respectively, the bails a' will meet or join, as shown in Figs. 1 and 4. The two legs of the wire are then bent into a segmental form nearly a half circle, while the ends of said legs are bent laterally to form the hinge pintles a^2 . The loops a and a^x thus formed are sprung into the grooves A' , b^x in the neck of the bottle and in the head of the stopper respectively, and any suitable hinge strap may be employed to connect the hinge pintles a^2 of the two loops. It is, however, the further purpose of my invention to provide a connection for the hinge pintle of such construction as to prevent the stopper from dropping against the neck of the bottle when withdrawn, as is the case in all stoppers of the class under consideration so far as they have come to my knowledge. To this end the hinge strap b is constructed from a polygonal piece of sheet metal that has a polygonal aperture b^4 in the opposite ends of which are formed tapering recesses b' while the sides of the central opening form the connecting straps b^3 of the hinge strap b , as shown in Fig. 2^a. If the blank shown in Fig. 2^a is folded or bent onto itself along the edges of the recessed ends of the aperture b^4 and around the hinge pintles a^2 of the two loops a , a^x , as shown in Fig. 2, a wedge-shaped bearing for said pintles will be formed by the recesses b' which will prevent complete rotation of the strap on the pintles or the pintles in the strap so that when the stopper is with-

drawn from the neck A of the bottle by means of the bail or handle a' of its loop a^x and turned over, the hinge pintles a^2 of the loop will move from the wider toward the narrower portion of the bearing a' and become wedged, the same occurring when the hinge pintle is turned away from the neck of the bottle after the withdrawal of the stopper, and both are prevented from dropping against the neck of the bottle, as shown in Fig. 3.

By means of the described construction the stopper performs the function of a lever by means of which the hinge strap is turned down, which would not be the case were the hinge pintles free to completely turn in their bearings in the hinge strap. But, irrespective of the structural simplicity of the devices by means of which the stopper is hinged to the bottle, and the described advantages thereof, there is still a further advantage, in that any of the parts may be readily removed in case of breakage and another substituted.

With reference to Figs. 1, 2, and 2^a the stopper is provided with a peripheral groove b^x in its head and with a stepped stem or shank B' , that is to say, the stem B' , is of variable diameter, whereby a retaining groove c^2 and an annular seat c^3 are formed between the terminals, c , and c^4 of the said stem. Into the groove c^2 is sprung a discoidal rubber gasket c' , of such diameter and thickness that when the stopper is forced into the neck A of the bottle, said gasket will be bent or turned upwardly and become wedged between the annular seat c^3 and the neck of the bottle and thus form a liquid tight joint between the said parts. This construction of stopper is more especially intended for use with bottles containing a non-gaseous liquid.

The stopper shown in Figs. 3 and 4 is especially designed for use with bottles containing gaseous or so called aerated liquids in which the retention of the gas is desirable, the neck A of the bottle being provided with a conical seat a^5 a gasket c' of polygonal form in section being sprung into the annular re-

taining groove c^2 , while the annular seat c^3 on the stem B' of the stopper B corresponds to that a^5 in the neck of the bottle, the gasket c' being of such thickness that when the stopper is pressed into the neck of the bottle it will roll out of its retaining groove c^2 onto its conical seat c^3 , and by compression between the latter and the seat a^5 in the neck of the bottle, assume the shape of a truncated cone, as shown in Fig. 4, and form a perfectly tight joint. When the stopper is withdrawn the gasket c' is caused to roll or move back into its retaining groove c^2 , as shown in Fig. 3.

In order that the unauthorized opening of a bottle may be prevented or indicated, a seal can readily be applied to the bails a' of the loops a and a^x .

In Fig. 4 I have shown as an example a strip or piece of a textile or other suitable material d looped around the bails and riveted, the rivets being covered with a suitable seal.

I claim—

1. The combination with a bottle, a wire bent to form the bail a' and loop a , said loop encircling the neck of the bottle, the ends of the wire bent at right angles to form diverging pintles a^2 and a stopper provided with a similarly fashioned wire, of a hinge strap constructed of a strip of sheet metal bent upon itself and around the hinge pintles, substantially as and for the purpose set forth.

2. The combination with a bottle, a wire bent to form the bail a' and loop a , said loop encircling the neck of the bottle, the ends of the wire bent at right angles to form diverging hinge pintles, and a stopper provided with a similarly fashioned wire, of a hinge strap provided with bearings for said pintles and with means for limiting the rotation of the pintles in their bearings, substantially as and for the purpose set forth.

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

RICHARD HERZ.

Witnesses:

A. SCHLESSING,
F. BELMONT.