(No Model.)

C. L. CURTIS.

METHOD OF APPLYING WIRE CORK RETAINERS TO BOTTLES.

No. 445,803. Patented Feb. 3, 1891.

Fig. 1.

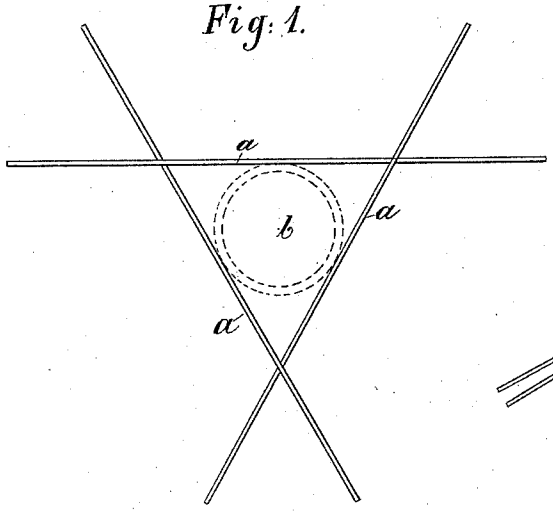


Fig. 2.

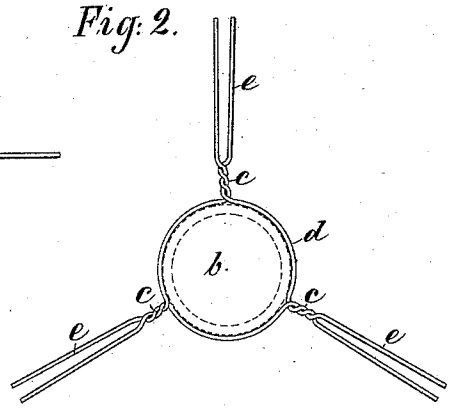


Fig. 3.

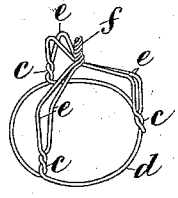


Fig. 4.

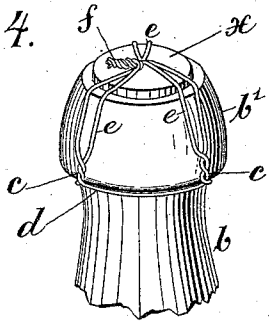


Fig. 5.

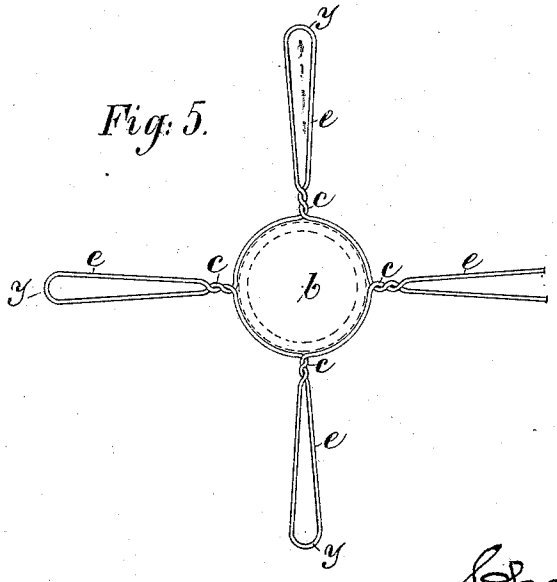
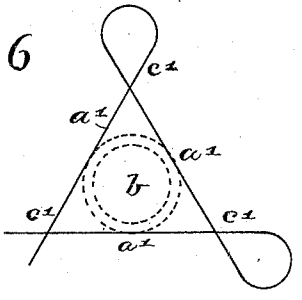


Fig. 6



INVENTOR:

Charles L. Curtis,

By Henry Connett

Attorney.

WITNESSES:

J. B. Darlington

E. W. Stuart

UNITED STATES PATENT OFFICE.

CHARLES L. CURTIS, OF BROOKLYN, ASSIGNOR TO THE N. B. ABBOTT MACHINE COMPANY, OF NEW YORK, N. Y.

METHOD OF APPLYING WIRE CORK-RETAINERS TO BOTTLES.

SPECIFICATION forming part of Letters Patent No. 445,803, dated February 3, 1891.

Application filed September 17, 1890. Serial No. 365,256. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. CURTIS, a citizen of the United States, residing at Brooklyn, Kings county, New York, have invented certain Improvements in Methods of Applying Wire Retainers to Stoppers, of which the following is a specification.

My invention relates to that class of wire retainers for stoppers wherein the neck of the bottle is embraced by a wire band from which three or more equidistantly-arranged branches extend up over the cork or stopper and are twisted together on the crown or top of the same.

The object of my invention is to provide a simple and convenient mode of applying a retainer of this character, and to provide an equally-balanced, secure, and strong retainer, with a minimum quantity of wire.

In the drawings, which serve to illustrate my invention, Figure 1 is a view illustrating the manner of placing the three wires destined to form the retainer about the neck of the bottle; and Fig. 2 is a similar view, showing the said wires after they have been united by twisting. Fig. 3 is a perspective view of the retainer as it appears detached from the bottle; and Fig. 4 is a perspective view showing the stoppered end of a bottle with the wire retainer in place thereon. Fig. 5 illustrates a modification that will be hereinafter described. Fig. 6 is a view similar to Fig. 1, illustrating the mode of wiring when but a single wire is employed.

In carrying out my invention I take, by preference, three substantially straight pieces of wire *a a a*, of substantially equal length, and place them about the neck *b* of the bottle, as seen in Fig. 1. The wires are then twisted together at the three points where they intersect, forming the three twists *c c c*, (seen in Fig. 2,) which represent the wires as they appear after these twists are formed. A wire band *d* consisting of a single strand now embraces the neck of the bottle below the fillet *b'* thereon, and three radiating branches *e e e* are formed, each of which consists of two strands of wire. These branches *e* are now bent upward over the fillet *b'* and brought together over the crown or top of the cork *x*, where they are twisted together, forming a twist *f* of six strands of wire. This twist may be then bent down, as seen in Fig. 4, and embedded in the cork; but this bending down of the twist *f* is not essential to my invention.

It will be seen that my retainer, constructed and applied as described, comprises a band *d* composed of a single strand of wire extending entirely around the neck of the bottle, and three substantially equidistant branches *e*, each composed of two strands of wire twisted together at *c*. These branches extend up over the stopper and are united by the twist *f*. This construction provides a retainer that is equally balanced, having the same quantity of wire in each branch, thus adapting them to be twisted together with facility, and each branch that passes over the cork has two strands, thus providing a strong retainer. The strands in the branches may be spread apart or separated a little, as seen in Fig. 4, thus providing six bearing-points on the stopper. I am enabled to use rather finer wire than that commonly employed, and this, besides effecting an economy, enables the twists to be made with greater ease and certainty. I prefer to use separate wires *a*, as shown in Figs. 1 and 2, and to employ but three branches *e*, as this will produce a perfectly-secure retainer for the stopper; but the retainer may be constructed from a single piece of wire, and it may have more than three branches, as represented in Fig. 5, where it will be seen that bends *y* are formed at the extremities of three of the branches, the twists *c* being formed in the branches, as before described. This figure shows four equidistant branches; but any other number of branches more than two may be formed from a single wire in the same manner. Where a single wire is employed, the lengths thereof will be placed about the bottle-neck, and each two adjacent lengths be twisted together to form the branch.

The peculiar characteristic of my method is that there is no preliminary twisting of the wires before applying the retainer to the bottle, all the twists being formed after the wires or lengths of wire have been placed about the neck of the bottle, and this method is especially well fitted to be carried out with ma-

chinery whereby the several primary twists *c* may be formed substantially simultaneously and by like mechanism.

Fig. 6 illustrates a mode of placing the single wire about the bottle-neck *b*, the lengths *a'* in this figure corresponding to the wires *a* in Fig. 1. The single wire of this figure is looped so as to form intersections or crossing-points, at *c'*, at which points the twists *c* will be formed.

My retainer is adapted for use on other stoppered receptacles similar in character to bottles.

Having thus described my invention, I claim—

1. The herein-described method of applying a wire retainer to the stoppered end of a bottle or the like, which consists in laying three or more wires or lengths of wire about the neck of the bottle and then twisting each two adjacent wires or lengths together at *c* in a manner to close the wires upon the bottle-neck and form a band *d* thereabout, having branches *e* projecting therefrom, substantially as set forth.

2. The herein-described method of applying a wire retainer to the stoppered end of a bottle or the like, which consists in first placing three or more substantially straight wires or lengths of wire against the bottle-neck and tangent thereto, in such a manner that they cross or intersect each other, then simultaneously twisting together each two wires or lengths of wire at the points where they intersect, thus forming the band *d* and branches *e*, then bending said branches up over the stopper until they meet on the crown of the same, and then uniting all the wires of all the branches into a single twist, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES L. CURTIS.

Witnesses:
HENRY CONNETT,
J. D. CAPLINGER.