E. J. BRICKER.

BOTTLE STOPPER.

APPLICATION FILED JULY 18, 1908.

936,515.

Patented Oct. 12, 1909.

Fig. 2

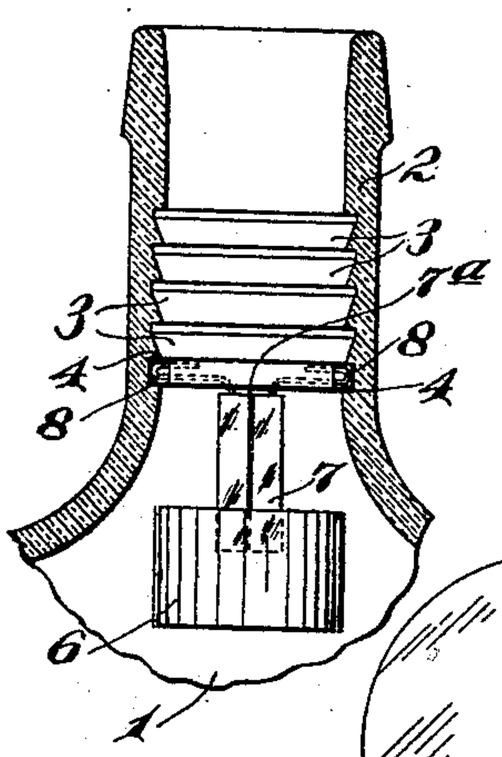


Fig. 1

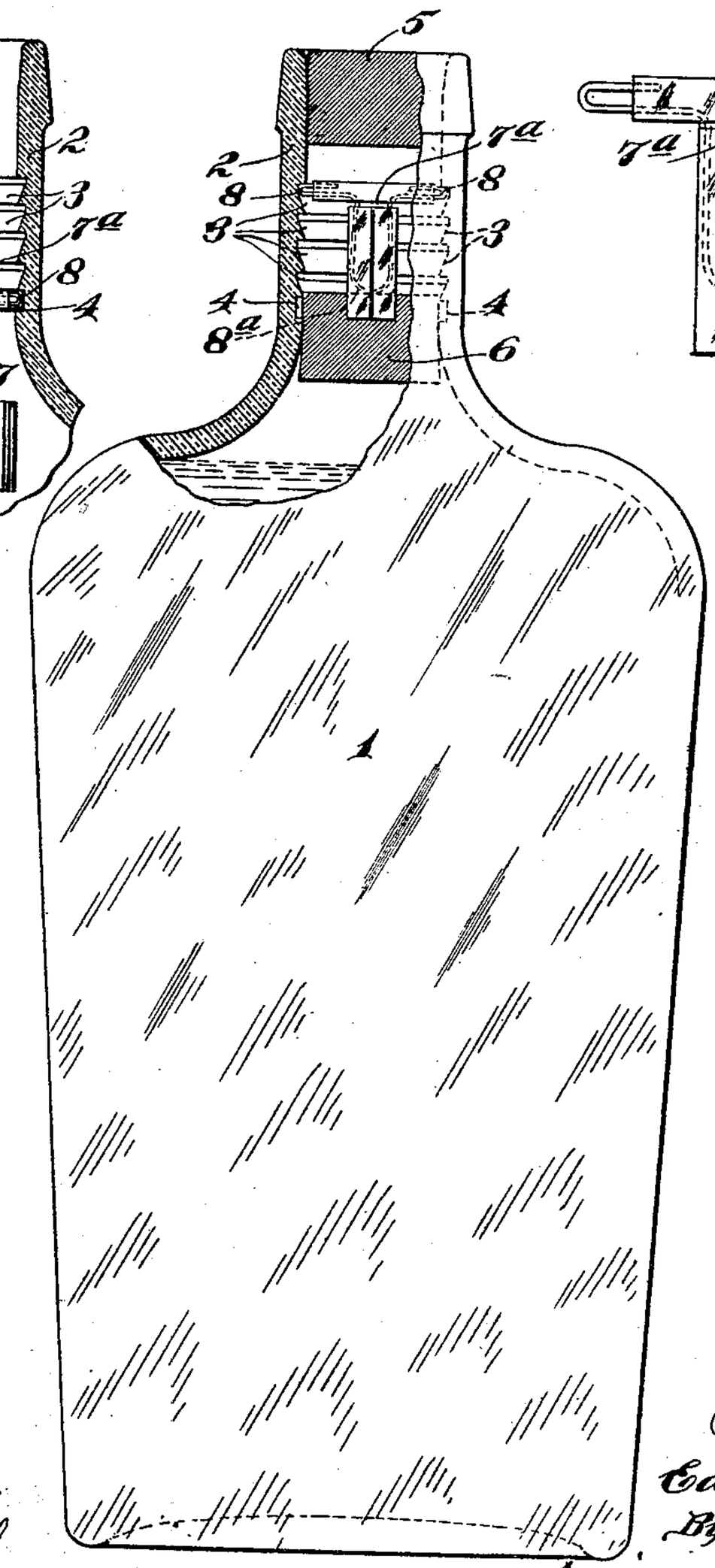
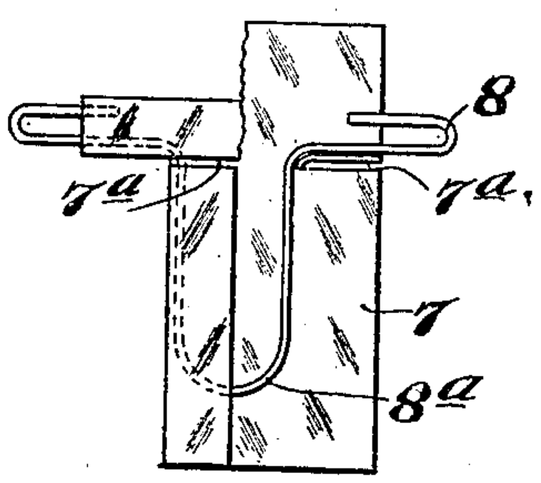


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD J. BRICKER, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-THIRD TO RUDOLPH BABLER, OF MINNEAPOLIS, MINNESOTA.

BOTTLE-STOPPER.

936,515. Specification of Letters Patent. **Patented Oct. 12, 1909.**

Application filed July 18, 1908. Serial No. 444,252.

To all whom it may concern:

Be it known that I, EDWARD J. BRICKER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Bottle-Stoppers; 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.

My invention has for its object to provide an extremely simple and highly efficient bottle stopper, and to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings; Figure 1 is a view chiefly in side elevation, with some parts broken away and some parts sectioned, showing a bottle and stopper designed in accordance with my invention. Fig. 2 is a vertical section taken centrally through the neck of the bottle, and showing the stopper forced into an open position; and Fig. 3 is a detail view of the lock device of the stopper, the right hand half section of the sheath thereof being unfolded and turned out flat.

The bottle or vessel 1 in its neck 2 is formed with a multiplicity of ratchet-like annular grooves 3 that taper downward. Just below the ratchet-like grooves 3, the bottle neck is provided with an annular lock groove 4 that has abrupt shoulders both at its upper and lower extremities.

The numeral 5 indicates a cork that fits the extreme upper end of the bottle neck, and the numeral 6 indicates a similar cork adapted to be forced into the lower portion of the said bottle neck, as shown in Fig. 1.

The stopper locking device comprises a sheath and a lock spring. The sheath is preferably of T-shape, being constructed from a single piece of thin sheet metal 7, both the stem and head of which are formed by folds of the said sheet. To permit the lower portion of the sheet to be folded upon itself to form the stem of the sheath, it is provided just below its head portion with transversely opposite slits 7ª.

The lock spring is made from a single piece of wire bent to form oppositely projecting approximately U-shaped ends 8 and an intermediate depending U-shaped body portion 8ª. The U-shaped body portion 8ª works loosely within the depending stem portion of the sheath 7, and the end portions 8 work loosely in and project from the folded head portion of said sheath. The depending end of the stem portion of the sheath 7 is inserted into or otherwise attached to the lower stopper 6.

To seal the bottle, the stopper 6 and the lock device made up of the sheath 7 and lock device 8 are inserted into the bottle neck approximately as shown in Fig. 1. The said parts must be forced downward in the bottle neck until the spring ends 8 engage with one or the other of the ratchet-like grooves 3 of the said bottle neck. When the spring ends 8 engage with one of the ratchet-like grooves 3, they lock the sheath 7 and hence, the lower stopper 6, so that it cannot be withdrawn from the bottle neck, but do not, however, prevent the said parts from being forced farther down into the bottle neck. The said lock spring and grooves 3 constitute a pawl and ratchet device for locking the stopper 6 against outward movement.

When it is desired to open the bottle so that the contents thereof may be poured therefrom, the lock device and the lower stopper 6 are forced downward as far as they will go, to-wit, until the spring ends 8 engage the lower lock shoulder or double channel groove 4. This engagement locks the sheath 7 and lower stopper 6 so that it cannot be moved either upward or downward and leaves the neck of the bottle open so that the contents of the bottle may be poured out. The double shouldered lower lock groove is very important, because it cooperates with the lock spring to prevent the opened stopper from being returned to its closed position after once the bottle has been opened.

What I claim is:—

1. The combination with a vessel having a multiplicity of ratchet like annular corrugations and a lock groove in its neck, the latter being located below the former, of a stopper fitting said neck, an approximately T-shaped folded metal sheath located in said neck outward of said stopper, and an approximately T-shaped spring seated in said sheath with its oppositely projecting ends engageable with said corrugations and lock

groove, substantially as and for the purposes set forth.

2. The combination with a vessel having a multiplicity of ratchet-like annular corrugations and a lock groove in its neck, the latter located below the former, of a stopper fitting said neck and approximately T-shaped folded metal sheath rigidly secured to said stopper, and an approximately T-shaped spring seated in said sheath with its oppositely projecting ends engageable with said corrugations and lock groove and adapted, when engageable with said groove, to support the stopper within the bottle, substantially as and for the purposes set forth.

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

EDWARD J. BRICKER.

Witnesses:
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