No. 880,331. PATENTED FEB. 25, 1908.

M. SCHWIND.

BOTTLE STOPPER.

APPLICATION FILED JUNE 22, 1907.

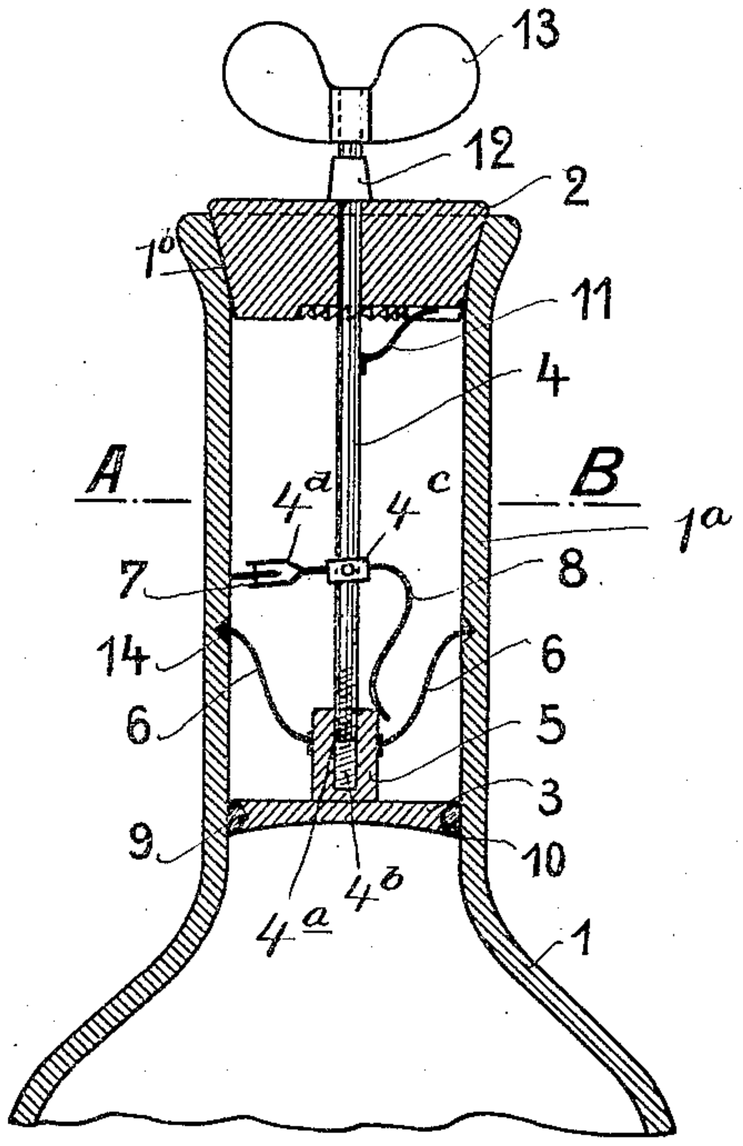

Fig 1.

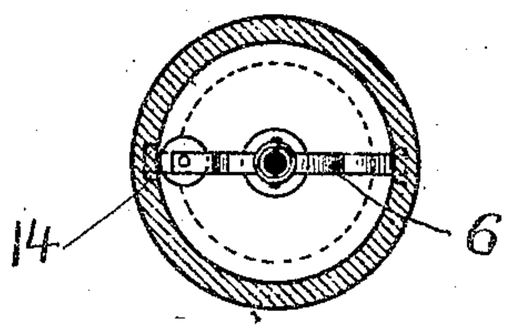

Fig. 2.

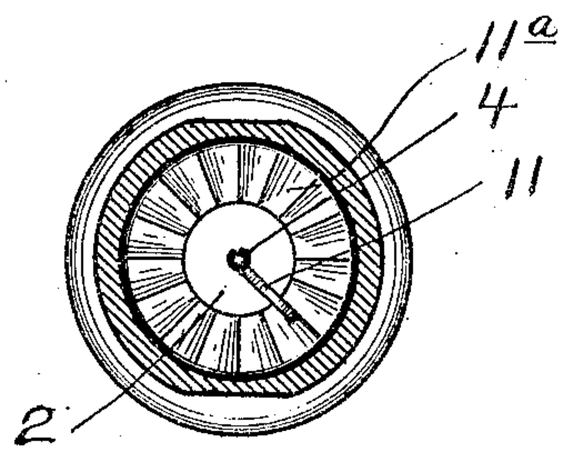

Fig. 3.

Witnesses:

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MARTIN SCHWIND, OF THALHEIM, GERMANY.

BOTTLE-STOPPER.

No. 880,331. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed June 22, 1907. Serial No. 380,350.

To all whom it may concern:

Be it known that I, MARTIN SCHWIND, a subject of the Emperor of Germany, and residing at Thalheim, Saxony, Germany, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

This invention relates to bottle stoppers; and the object thereof is to provide a bottle stopper in a manner as hereinafter set forth, which when removed will become damaged, as well as damaging the neck of the bottle, thereby preventing the reëmployment of the bottle or the stopper.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawings wherein like characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a vertical sectional view of a bottle neck showing the adaptation in connection therewith of a stopper in accordance with this invention, the stopper also being shown in section; Fig. 2 is a section on line *a*—*b* of Fig. 1, and, Fig. 3 is an inverted plan of the outer seal.

Referring to the drawings by reference characters, 1 denotes a part of the body portion of a bottle 1^a, the bottle neck having its inner face at the outer end thereof beveled, as at 1^b so as to form a seat for the outer seal 2, which may be of any suitable material and substantially conical in contour.

Within the neck of the bottle in close proximity to the point where the neck merges into the body portion is positioned an inner seal 3 formed of suitable material and having a groove 9 in its edge, in which is mounted a resilient washer 10 so that snug contact will be had between the inner face of the neck and the inner sealing means 3. Extending through the outer seal 2 is a spindle 4 having a screw-threaded lower end 4^a which is adapted to engage in the screw-threaded socket 4^b formed by a protuberance 5 which is secured to the inner seal 3. Connected to the protuberance 5 is a plurality of laterally-extending curvilinear springs 6 which are adapted to engage in the recesses 14 formed in the inner face of the neck 1^a, to retain the stopper within the neck.

Connected to the spindle 4 is a shiftable collar 4^c carrying a bracket 4^d provided with a cutting wheel 7 which is adapted to engage and cut out the inner face of the neck 1^a when the spindle 4 is rotated. The cutting wheel 7 is held in close contact with the inner face of the neck 1^a through the medium of a curved spring 8 connected at one end to the collar 4^c and at its other end bearing against the protuberance 5.

The spindle 4 is prevented from back rotation through the medium of a spring dog 11, which is adapted to engage the ratchet teeth 11^a formed on the inner face of the outer seal 2, the dog 11 being carried by the spindle and having its free end engaging the teeth 11^a. The spindle 4 bears upon the outer seal 2 through the medium of an enlargement 12 and the spindle 2 furthermore carries upon its outer end a wing-nut 13 which enables the convenient rotating of the spindle 4 when occasion so requires.

The stopper is used in the following manner: The spindle 4 is connected to the protuberance 5 of the inner seal 3 and the latter is then shoved into the neck of the bottle until the retaining springs 6 snap into the recesses 14. The spindle is further rotated in order to establish a tension between the outer and inner seal and to furthermore place the wheel 7 in cutting position. By such operation the neck of the bottle is closed. If it be desired to open the bottle the spindle 4 is turned to the right which forces the screw-threaded end thereof deeper into the socket formed by the protuberance 5 of the inner seal. The cutting wheel 7 during such operation is snugly pressed against the inner face of the neck of the bottle and as the wheel 7 is turning with the spindle it cuts into the bottle neck. When rotating the spindle in the manner just stated the springs 6 are pressed together until they finally break. The inner seal 3 not only acts as a closure at the junction of the neck with the body portion of the bottle, but also acts as a means to prevent the chips cut from the inner face of the neck by the seal 7 from falling into the contents of the bottle. When

the stopper as an entirety is removed the chips will be removed from the bottle neck as will be evident.

The wheel 7 cuts the neck of the bottle in such a manner that the bottle cannot be used again for shipping and selling purposes—that is to say, the neck of the bottle becomes so weakened that it could not be corked in the ordinary manner, nor would it be of sufficient strength to stand shipment. The cutting away of the neck of the bottle, however, is such as not to prevent the bottle being emptied through the neck or to prevent the placing in of a cork for ordinary purposes.

The springs 6 act as a means to retain the stopper within the neck of the bottle until the springs are broken by their being forced towards each other in a manner as hereinbefore stated. By such an arrangement it is evident that the inner face of the neck of the bottle will be cut by the wheel 7 as the operation of breaking the springs 6 can only be had by turning the spindle 4, the latter carrying the cutting wheel therewith. After the springs 6 have become broken the stopper as an entirety can be withdrawn from the neck.

What I claim is—

1. A stopper comprising an inner and an outer seal, spring members carried by the inner seal adapted to engage with the bottle neck for retaining the seals therein, a rotatable connection between the seals, and a tension cutting device carried by the connection.

2. A stopper comprising an inner and an outer seal, spring members carried by the inner seal adapted to engage with the bottle neck for retaining the seals therein, a rotatable connection between the seals, a tension cutting device carried by the connection, and means carried by the connection and engaging with the outer seal to prevent back rotation of the connection.

3. A bottle stopper comprising an inner and an outer seal, a rotatable spindle extending through the outer seal and provided with an enlargement bearing against the exterior face of the outer seal, said spindle having its inner end connected to the inner seal, springs carried by the inner seal and adapted to engage in the bottle neck to prevent the withdrawal of the seals, and a tension cutting device carried by the spindle.

4. A bottle stopper comprising an inner and an outer seal, a rotatable spindle extending through the outer seal and provided with an enlargement bearing against the exterior face of the outer seal, said spindle having its inner end connected to the inner seal, springs carried by the inner seal and adapted to engage in the bottle neck to prevent the withdrawal of the seals, a tension cutting device carried by the spindle, and means carried by the spindle and engaging in the outer seal to prevent the back rotation of the spindle.

5. A bottle stopper comprising an inner seal provided with a screw-threaded socket, an outer seal, a rotatable spindle extending through said outer seal and having the screw-threaded inner end engaging in the socket, said spindle having its outer end provided with an enlargement bearing against the outer seal, and a plurality of spring members carried by the inner seal and adapted to engage in the bottle neck to prevent withdrawal of the seals.

6. A bottle stopper comprising an inner seal provided with a screw-threaded socket, an outer seal, a rotatable spindle extending through said outer seal and having a screw-threaded inner end engaging in the socket, said spindle having its outer end provided with an enlargement bearing against the outer seal, a plurality of spring members carried by the inner seal and adapted to engage in the bottle neck to prevent withdrawal of the seals, and a tension cutting device carried by the spindle.

7. A bottle stopper comprising an inner seal provided with a screw-threaded socket, an outer seal, a rotatable spindle extending through said outer seal and having the screw-threaded inner end engaging in the socket, said spindle having its outer end provided with an enlargement bearing against the outer seal, a plurality of spring members carried by the inner seal and adapted to engage in the bottle neck to prevent withdrawal of the seals, a tension cutting device carried by the spindle, and means carried by the spindle and engaging in the outer seal to prevent back rotation of the spindle.

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Witnesses:
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