No. 692,359. Patented Feb. 4, 1902.

G. ROUSE.

BOTTLE STOPPER.

(Application filed Aug. 10, 1901.)

(No Model.)

Fig. 1.

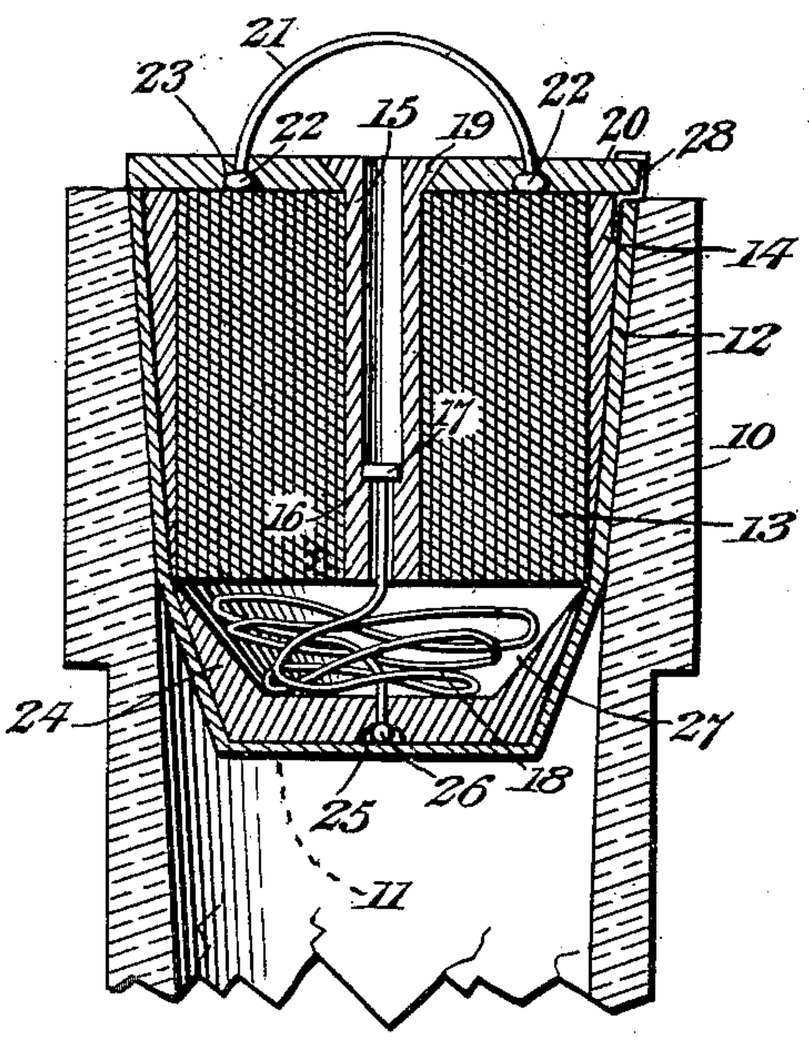

Fig. 2.

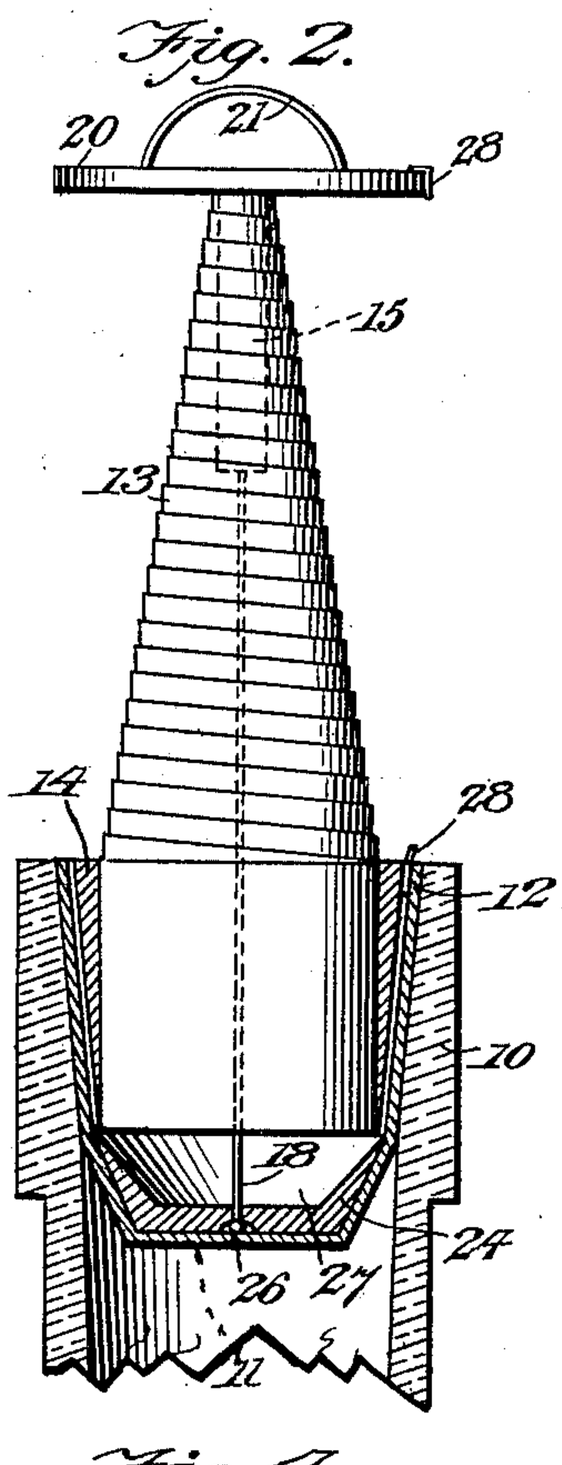

Fig. 3.

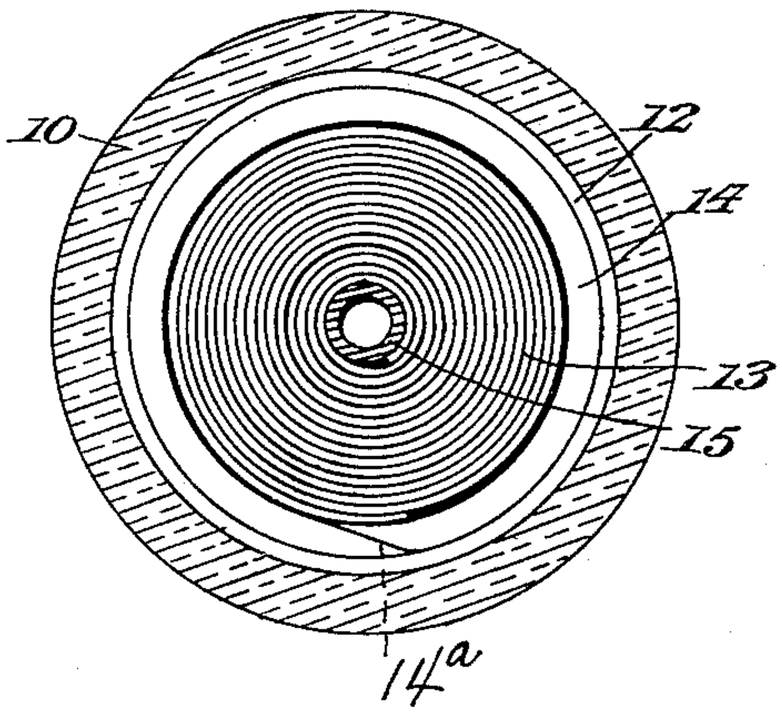

Fig. 4.

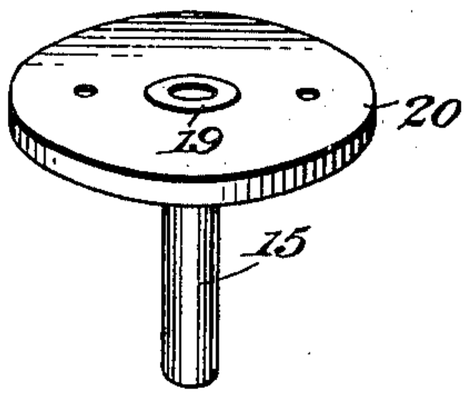

Fig. 5.

George Rouse Inventor

Witnesses:
Edwin L. McKee
A. G. Huylmun.

By Victor J. Evans.
Attorney

UNITED STATES PATENT OFFICE.

GEORGE ROUSE, OF JOLIET, ILLINOIS, ASSIGNOR OF ONE-FOURTH TO JOHN MASON, OF JOLIET, ILLINOIS.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 692,359, dated February 4, 1902.

Application filed August 10, 1901. Serial No. 71,634. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ROUSE, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

This invention relates to bottle-stoppers; and the main object of the invention is to provide a construction of bottle-stopper which will enable the stopper to be readily removed from the neck of a bottle or other receptacle without the aid of a corkscrew or similar implement. The construction of the stopper is such that when it is inserted and driven tightly into the neck of the bottle it will be as effectively held therein as any of the ordinary stoppers now in common use.

More specifically stated, the object of the invention is to provide a stopper with a removable filler or padding, which preparatory to the actual removal of the stopper as a whole is withdrawn sufficiently from the outer inclosing shell of the stopper to admit of the partial collapse or contraction of said shell, thus relieving the pressure between the stopper and inner surface of the bottle-neck, with the result that the shell and other parts of the stopper may be readily removed with slight exertion and without danger of mutilating or destroying the stopper. The stopper may be repeatedly used and is in no wise impaired by reason of its withdrawal from the bottle-neck.

With the above and other objects in view the invention consists in a bottle-stopper embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is an enlarged vertical section through the neck of the bottle, showing the bottle-stopper in section seated therein. Fig. 2 is a smaller sectional view of the bottle-neck, showing the manner of removing the stopper, the shell and contiguous portions of which are shown in section. Fig. 3 is a horizontal section taken through the upper portion of Fig. 1. Fig. 4 is a detail perspective view of the hollow core and top of the stopper. Fig. 5 is a similar view of the auxiliary bottom of the stopper.

Like numerals of reference designate like parts in all the views.

In the drawings, 10 designates the neck of the bottle, and 11 the improved stopper inserted therein.

The stopper comprises, essentially, an outer shell 12 and a removable or partially-removable filler 13. The filler consists of a piece of sheet material wound into the form of a roll or spiral, which is adapted to be extended in line with its axis, as shown in Fig. 2, when it assumes the shape of a spiral or helix. When the extensible filler or padding 13 is entirely inclosed and contained within the plane of the shell, it is contained between the form 14, secured to the inner surface of the shell 12, and a hollow or tubular core 15, the outer end of the coiled filler being connected permanently to the inner surface and one edge of the form 14, and the inner end of the filler being secured permanently to the outer surface of the core 15. The filler when closed, as shown in Fig. 1, is of cylindrical form, and therefore the inner surface of the form 14 is also made cylindrical to agree therewith, while the outer surface of the form 14 is made tapering similar to the shape of an ordinary stopper or cork, so as to conform approximately to the internal shape of the bottle-neck and also agree with the internal shape of the outer shell 12, all as clearly illustrated in Figs. 1 and 2. The core is provided with an internal shoulder 16 for the reception of a stop 17, consisting of a button or other enlargement on the end of a flexible connection 18, which operates to limit the withdrawal of the filler or padding in the manner which will presently appear. The core is provided at its upper end with a taper head 19, which fits in a seat made in the cover 20, made in the form of a disk constituting the top of the stopper, said cover serving to conceal and protect the coiled filler or padding.

21 represents a handle having its ends inserted through openings in the top 20 and provided with buttons or enlargements 22 at its ends, which are received in corresponding recesses 23 in the inner surface of the top, as illustrated in Fig. 1. Said handle is com-

posed, preferably, of wire or cord, so as to render the same flexible, whereby it may be pressed downward against the top of the stopper while forcing the stopper into the neck of the bottle. The lower portion of the shell 12 is contracted or made frusto-conical in shape, as illustrated in Figs. 1 and 2, and is reinforced by means of an auxiliary bottom 24, which is securely attached to the inside of the shell of the stopper by cement or in any other convenient manner.

The reinforced or auxiliary bottom 24 is provided with a central opening to receive the connection 18 and is also provided with a recess 25 to receive a button or enlargement 26 at the lower end of said flexible connection 18. It will now be seen that as the extensible filler or padding is drawn outward, so as to assume the position shown in Fig. 2, the flexible connection 18, which is normally contained within the space 27 below the coil, is simultaneously stretched to its full length, thereby serving to limit the extent to which the extensible filler or padding and form 14 may be withdrawn. The form 14 is split vertically, as indicated at 14^a, and has an edge of the split attached to the inner surface of the outer shell 12 and the other and inner edge of the split secured to the outer end of the coil, so that when the coil is extended the form will contract and relieve the shell 12 of pressure. As soon as the flexible connection 18 is rendered taut, the further pulling strain on the handle 21 is imparted to the reinforced bottom of the stopper-shell, which may then be readily withdrawn from the neck of the bottle owing to the fact that the outward pressure exerted by the coiled filler or padding has been removed by the partial withdrawal of such filler or padding.

The top or cover 20 is not connected to the shell 12 or form 14, but merely rests against the upper edges thereof. By means of the handle 21, however, the top or cover 20 is readily lifted, and as the core 19 connects with the top and has the inner extremity of the spiral connected therewith the filler or padding will be drawn out in the helical or spiral form illustrated in Fig. 2.

In view of the foregoing description it will be seen that as the spiral filler or padding is drawn outward the outward pressure which said filler has previously exerted against the shell of the stopper is removed. This permits a very slight or partial collapse or contraction of the shell, and the stopper as a whole may then be readily removed from the bottle by continuing the pulling action on the handle 21, the strain applied thereto, as previously stated, being transmitted to the reinforced bottom of the stopper.

In order to reinsert the stopper in the bottle, the parts of the stopper are first restored to their normal positions, as illustrated in Fig. 1, after which any desired pressure may be imposed upon the outer end of the stopper for forcing the same into the bottle-neck.

When the stopper is ready for the market, in handling there is a possibility of the top being turned either to the right or left, which would have a tendency to either loosen or tighten the coil, which would make the said spiral defective in pulling, and to guard against this I use a thin stay or piece of paper 28, one end glued to the inside of the shell and the remaining end glued to the top, or the shell may be manufactured with that piece on it. The coil will not turn readily; but this stay will prevent any possibility of its doing so in case of rough handling.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. A bottle-stopper comprising an outer shell and an extensible coiled filler in the shell, whereby the stopper is held in its seat in the bottle, and means for extending the coil to release the pressure on the stopper.

2. A bottle-stopper comprising an outer shell, a yielding cylindrical form within the shell, a central core, an extensible coiled filler within the cylindrical form to expand the form within the shell, and means to withdraw the core and extend the filler.

3. A bottle-stopper comprising an outer shell, an inner core, a coiled filler interposed between the shell and core, and means substantially as described for elevating the core and extending the coiled filler.

4. A bottle-stopper comprising an outer shell, an inner core arranged therein, a spirally-wound filler interposed between the shell and core and connected with said parts, and means for drawing the core outwardly.

5. A bottle-stopper comprising an outer shell, an inner core, a spirally-wound filler interposed between the shell and core and connected at opposite ends to said parts, a cover connected to the core and removably seated on the shell, and means for lifting the cover with the core to extend the coil in a line with its axis.

6. A bottle-stopper comprising an outer shell, an inner core, a coiled filler interposed between the shell and core and connected at its opposite ends to said parts, a cover inclosing the filler and connected with the core, and a handle connected with said cover to lift the cover with the core and extend the coil.

7. A bottle-stopper comprising an outer shell, an inner core, a coiled filler interposed between the shell and core and connected therewith, means for drawing the core outward, and means for limiting the outward movement of the core.

8. A bottle-stopper comprising an outer shell, an inner core, a coiled filler interposed between the shell and core and connected with said parts, means for drawing the core outward, and a flexible connection interposed between the shell and core for limiting the outward movement of the core relatively to the shell.

9. A bottle-stopper comprising an outer

shell, a core, a coiled filler interposed between the shell and core and connected with said parts, means for drawing the core outward, a reinforce at the bottom of the stopper, and a flexible connection between said reinforce and core.

10. A bottle-stopper comprising an outer shell, a tubular core having an internal shoulder, a coiled filler interposed between the shell and core and connected with said parts, means for drawing the core outward, a reinforce at the bottom of the stopper, and a flexible connection having terminal stops one of which is associated with the reinforce and the other arranged to bear against the shoulder within the core.

11. A bottle-stopper comprising an outer shell, a tapering form inclosed therein, a central core, a coiled filler interposed between the form and core and having its opposite ends connected to said parts, means for drawing the core outward, and means for limiting the outward movement of the core with respect to the shell of the stopper.

12. A bottle-stopper comprising an outer shell, an inner core, a coiled filler interposed between the shell and core and connected with said parts, a cover fastened to the core and forming the top of the stopper, means for limiting the outward movement of the core, and a flexible handle connected with said cover.

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

GEORGE ROUSE.

Witnesses:
H. C. BOSTWELL,
ALICE H. TINDALL.