H. D. VREDENBURGH.

BOTTLE STOPPER.

APPLICATION FILED SEPT. 29, 1921.

1,424,862. Patented Aug. 8, 1922.

Fig. 1.

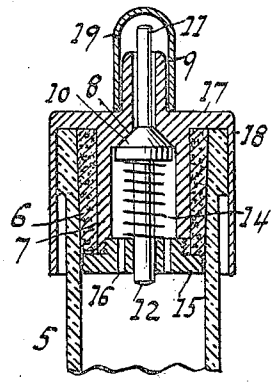


Fig. 2.

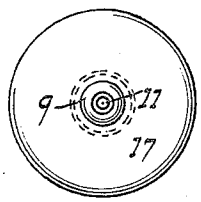
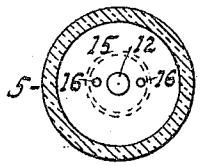


Fig. 3.



Harry D. Vredenburgh INVENTOR.

BY

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UNITED STATES PATENT OFFICE.

HARRY D. VREDENBURGH, OF BROOKLYN, NEW YORK.

BOTTLE STOPPER.

1,424,862. Specification of Letters Patent. Patented Aug. 8, 1922.

Application filed September 29, 1921. Serial No. 504,060.

To all whom it may concern:

Be it known that I, HARRY D. VREDENBURGH, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Bottle Stoppers, of which the following is a specification.

This invention relates to that type of bottle stopper in which a spring controlled plunger valve permits the ejectment of a drop or small volume of the perfumery or other fluid contained in the bottle.

An object of the invention is to provide a valve in which a sliding push stem for opening the valve gauges the amount of fluid permitting only the ejectment of a drop of the fluid.

Another object of the invention is to provide means for the adjustment of the spring and its replacement when broken.

Another object of the invention is to provide a device for clamping a packing ring on the tubular casing so that it will effectively seal the mouth of the bottle and prevent leakage of the fluid.

The novel features of the invention are more fully described in the following specification and claims and illustrated in the accompanying drawing in which:

Figure 1 represents a vertical section of a bottle stopper embodying this invention.

Figure 2 is a plan view showing the cap removed.

Figure 3 is a sectional inverted plan view of the same.

In the drawing the numeral 5 designates a bottle of ordinary shape and especially adapted to contain a fluid such as perfume. In the neck of the bottle is arranged a stopper including a cork or rubber packing ring 6 mounted on a tubular casing 7 and made to seal the mouth of the bottle.

The inner portion of the casing is formed with a truncated conical seat 8 and a stem 9 is provided with a bore to constitute a channel for the fluid to flow along.

A plunger having a conical valve 10 with an upper stem 11 and a lower stem 12 is forced by means of a coil spring 14 mounted on the lower stem into the seat to effectively close the channel in the stem. A nut 15 screwed into the lower part of the casing holds the spring in its position on the lower stem of the valve. The nut has a central hole coacting with the lower stem to prevent the valve from getting out of alignment with the seat. The nut can be adjusted to compress the spring or when it is desired to replace it the nut can readily be unscrewed and the spring slipped from the valve stem. The nut also has a number of holes 16 to permit the fluid to flow through.

As shown in the drawing, the nut is flanged so that it can be forced against the lower end of the packing ring jamming it against the top 17 of the casing so as to rigidly hold it therebetween. In this construction when the packing becomes worn it can be removed by unscrewing the nut and slipping the packing off the casing. A sleeve 18 depends from the upper portion of the casing and it surrounds the upper portion of the neck to cover or hide the stopper so that it cannot be seen from the outside. The sleeve also gives an ornamental appearance to the stopper and it also serves as a convenient grip to insert or remove the device from the bottle. A cap 19 with a hemispherical apex is arranged over the stem of the casing so as to prevent accidental opening of the valve while the bottle is not in use.

When the upper stem of the plunger is forced downward it moves the conical valve away from its seat thus permitting the fluid to flow through the holes in the nut into the tubular casing, the interior of which is of larger diameter than the valve, and thence up around the conical valve into the annular channel to be ejected from the apex of the stem. The top of the casing stem in conjunction with the upper stem of the plunger forms a pencil point whereby when the valve is opened a single drop of the fluid will trickle from the channel.

I claim:

1. A bottle stopper comprising a tubular casing having a valve seat, a channeled stem surmounting the casing, a spring pressed plunger valve cooperating with the seat, and a stem projecting from the valve coacting with the channelled stem.

2. A bottle stopper comprising a tubular casing having a valve seat, a channeled stem surmounting the casing, a spring pressed plunger valve cooperating with the seat, a stem projecting from the valve coacting with the channeled stem, a packing ring arranged on the casing, and a nut threaded in the lower part of the casing to engage the packing.

3. A bottle stopper comprising a tubular casing having a valve seat, a channeled stem

surmounting the casing, a spring pressed plunger valve cooperating with the seat, a stem projecting from the valve coacting with the channeled stem, a packing ring arranged on the casing, a nut threaded in the lower part of the casing to engage the packing and press against the spring.

4. A bottle stopper comprising a tubular casing having a valve seat, a channeled stem surmounting the casing, a sleeve depending from the top of the casing to surround the neck of the bottle, a spring pressed plunger valve cooperating with the seat, a stem projecting from the upper and lower part of the valve, a packing ring arranged on the casing, a flanged fluid inlet nut threaded in the lower part of the casing made to guide the lower stem and jam the packing between the top and flange.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HARRY D. VREDENBURGH.

Witnesses:
INEZ M. SCHOMBS,
WILLIAM MILLER.