(No Model.)

A. R. POLLARD.

BOTTLE AND STOPPER THEREFOR.

No. 594,423. Patented Nov. 30, 1897.

FIG. 1.

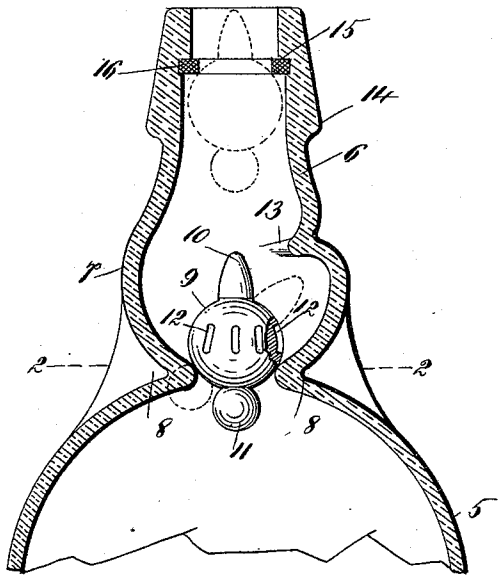


FIG. 2.

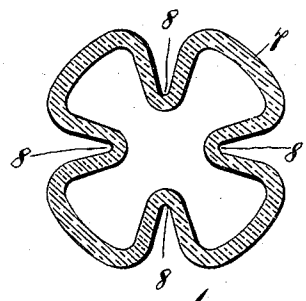
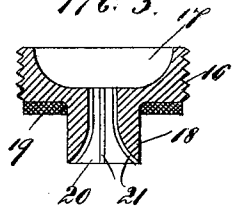


FIG. 3.



WITNESSES

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARTHUR READ POLLARD, OF WORTHING, ENGLAND.

BOTTLE AND STOPPER THEREFOR.

SPECIFICATION forming part of Letters Patent No. 594,423, dated November 30, 1897.

Application filed July 2, 1897. Serial No. 643,283. (No model.)

To all whom it may concern.

Be it known that I, ARTHUR READ POLLARD, a subject of the Queen of Great Britain, residing at Worthing, in the county of Sussex, England, have invented certain new and useful Improvements in Bottles and Stoppers Therefor, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to bottle-stoppers, and particularly to that class thereof which are adapted for use in connection with mineral-water bottles, soda-water bottles, and other bottles of this class which contain gas under pressure; and the object thereof is to provide an improved stopper for bottles of this class which is held in place so as to close or seal the bottles by means of the pressure from within.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a central vertical section of the upper part of a bottle and the neck thereof provided with my improvement; Fig. 2, a section on the line 2 2 of Fig. 1, and Fig. 3 a central vertical section of a device which is employed in connection with a filling-machine for filling bottles.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same numerals of reference in each of the views, and in the practice of my invention I provide a bottle 5, which is provided with a neck 6, and said neck is enlarged just above the upper portion of the bottle, as shown at 7, and the lower end thereof is provided with inwardly-directed ribs, as shown at 8, and the inwardly-directed projections thus formed are adapted to support a spherical stopper 9, which is provided at its upper side with a conical projection 10 and at its lower side with a spherical ball or body 11, which is secured thereto and which is adapted to serve as a weight to retain the stopper in proper position and also to increase the length thereof.

The spherical stopper 9 is provided around the central circumference thereof with a plurality of grooves 12, any desired number of which may be employed, and the upper part of the enlarged portion 7 of the neck is provided at one side with an annular inwardly-directed rib or projection 13, and the outer walls of the upper end of the neck are thickened, as shown at 14, and the upper inner walls thereof are contracted, so as to form an annular shoulder 15, below which is placed a packing-ring 16, of rubber or any suitable material.

In Fig. 3 I have shown a filling attachment by means of which the bottle may be filled, and this filling attachment is adapted to be connected with the filling-tube of an ordinary filling-machine, and said attachment consists of a screw-threaded plug 16, which is provided in the upper side thereof with a cavity 17, and the lower side with a tubular projection 18, around which is placed a packing-ring 19, and the passage through the tubular projection 18 is enlarged at its lower end or bell-shaped in form, as shown at 20, and formed in the side walls thereof are grooves 21.

In filling the bottle said bottle is inverted in the usual manner, and in this operation the stopper 9 drops into the position shown in dotted lines in Fig. 1, and the nozzle of the bottle is then mounted on the tubular extension 18 of the filling device 16, and this operation forces the stopper from its seat or from the annular packing-ring 16 to a slight extent, and said valve is held in this position by pressure from within the bottle and the bottle is filled in the usual manner, and after the bottle is removed from the filling attachment the pressure from within the bottle will force the stopper upon its seat, as shown in dotted lines in Fig. 1, where it will remain until it is desired to empty the bottle.

When it is desired to empty the bottle, the thumb or finger is placed on the conical projection 10, and said conical projection is forced to one side, and the stopper is turned so that the gas within the bottle will escape through the slots or grooves 12 in the side of the stopper, and when this is done the stopper will drop downwardly into the neck of the bottle and the contents of said bottle will be poured out in the usual manner.

The inwardly-directed rib or projection 13 is designed to prevent the stopper from moving forwardly when the bottle is inverted in pouring out the contents thereof, and in this operation the bottle is so held that the con-

ical projection 10 on the stopper will pass beneath said rib or projection, as shown in dotted lines in Fig. 1.

The inwardly-directed ribs or projections 8 serve to prevent the stopper from dropping into the bottle, and thus always hold said stopper in position for use, and it will be apparent that the bottle may be refilled and resealed whenever desired by simply repeating the operation hereinbefore described.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A bottle provided with a neck which is enlarged at its lower end and which is provided with inwardly-directed ribs or projections, said neck being also provided at its upper end with an inwardly-directed portion whereby an annular shoulder is formed, a packing-ring placed beneath said annular shoulder, and a stopper which is spherical in form, and which is adapted to rest upon the inwardly-directed ribs or projections at the bottom of the neck, said stopper being provided at its upper side with a conical projection, and around its center circumference with slots or grooves which extend in line with said projection, substantially as shown and described.

2. A bottle provided with a neck which is enlarged at its lower end and which is provided with inwardly-directed ribs or projections, said neck being also provided at its upper end with an inwardly-directed portion whereby an annular shoulder is formed, a packing-ring placed beneath said annular shoulder, and a stopper which is spherical in form, and which is adapted to rest upon the inwardly-directed ribs or projections at the bottom of the neck, said stopper being provided at its upper side with a conical projection, and around its center circumference with slots or grooves which extend in line with said projection, and at its lower side with a ball or body which serves as a weight, substantially as shown and described.

3. A bottle provided with a neck which is enlarged at its lower end and which is provided with inwardly-directed ribs or projections, said neck being also provided at its upper end with an inwardly-directed portion whereby an annular shoulder is formed, a packing-ring placed beneath said annular shoulder, and a stopper which is spherical in form, and which is adapted to rest upon the inwardly-directed ribs or projections at the bottom of the neck, said stopper being provided at its upper side with a conical projection, and around its center circumference with slots or grooves which extend in line with said projection, and at its lower side with a ball or body which serves as a weight, and the enlarged portion of the neck being provided at one side with an inwardly-directed circular rib or projection, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 14th day of June, 1897.

ARTHUR READ POLLARD.

Witnesses:

REGINALD ARTHUR RODGERS,

ERNEST H. KEMPE.