

No. 667,217.

Patented Feb. 5, 1901.

C. A. GROSS.
NON-REFILLABLE BOTTLE.

(Application filed Dec. 23, 1899.)

(No Model.)

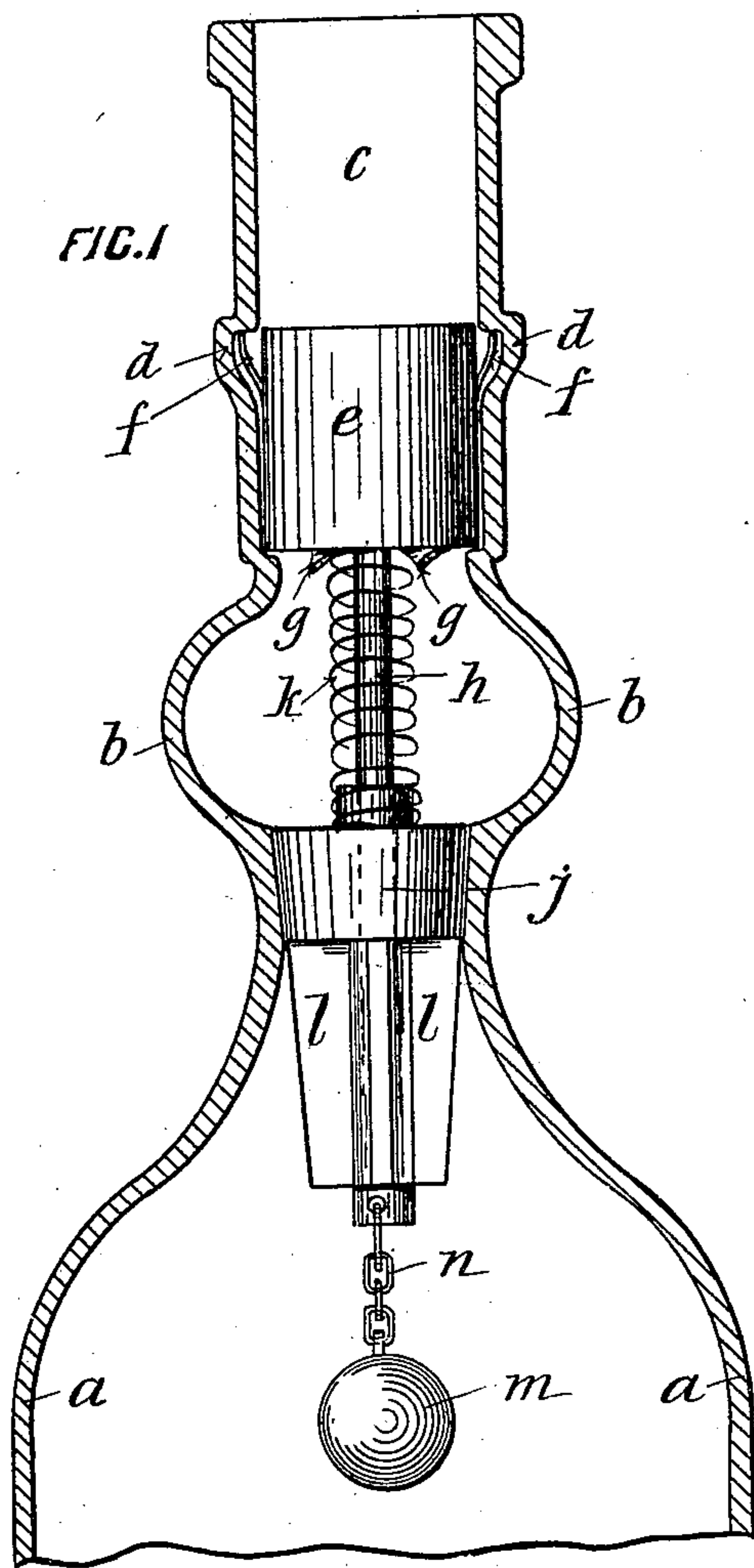


FIG. 2

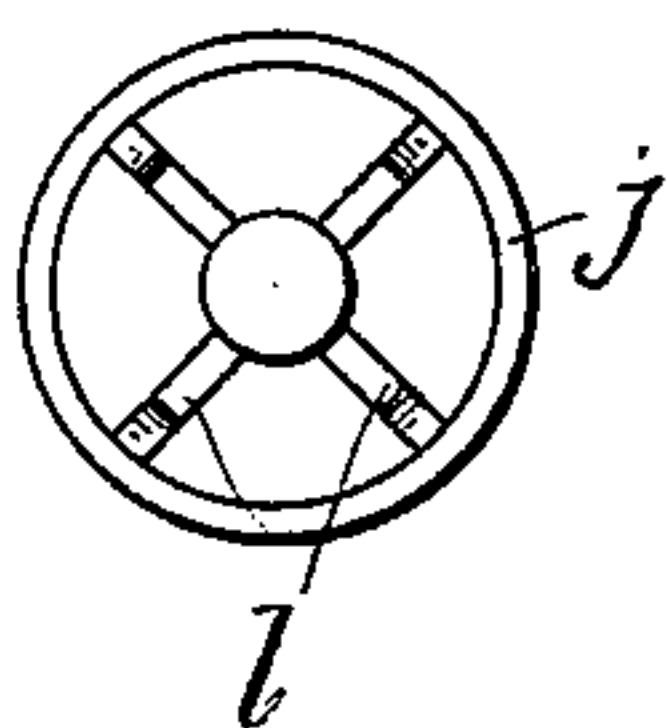


FIG. 3

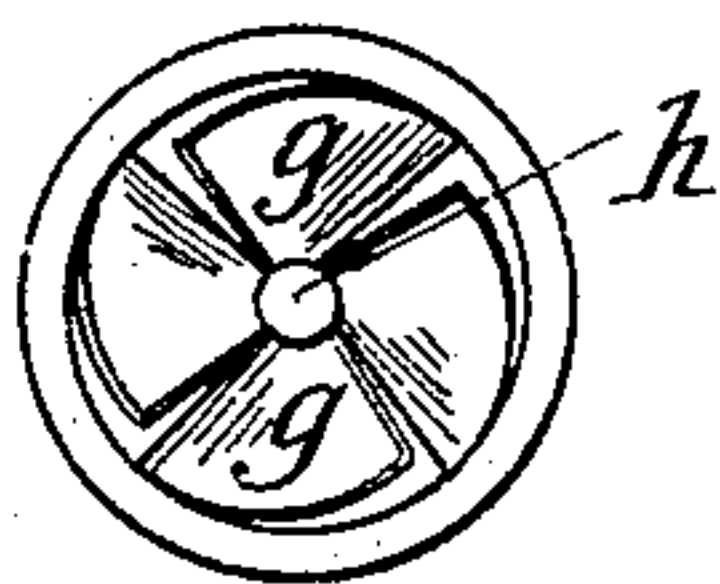
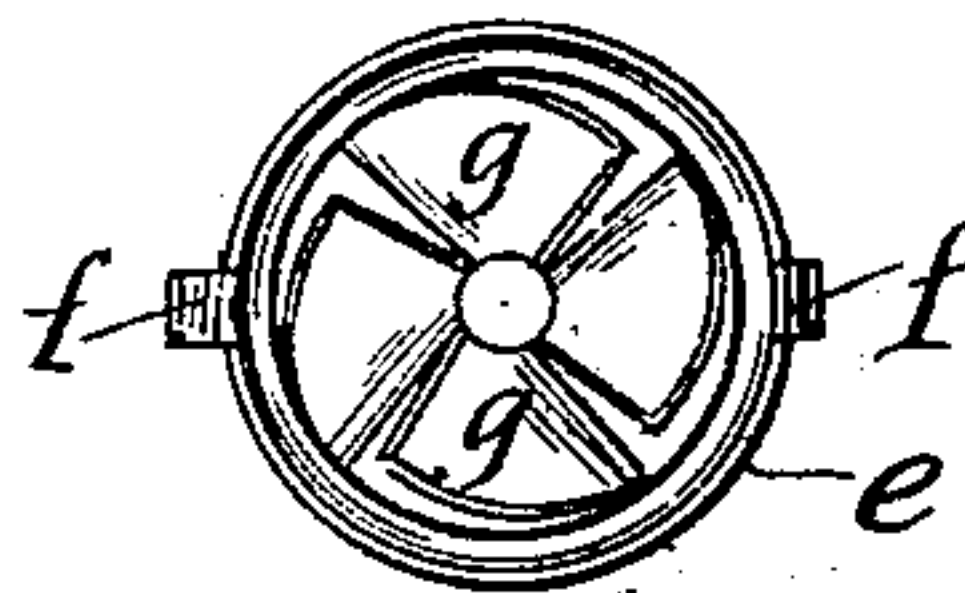


FIG. 4



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES AUGUSTUS GROSS, OF MARRICKVILLE, NEW SOUTH WALES.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 667,217, dated February 5, 1901.

Application filed December 23, 1899. Serial No. 741,446. (No model.)

To all whom it may concern:

Be it known that I, CHARLES AUGUSTUS GROSS, a subject of the Queen of Great Britain and Ireland, and a resident of Marrickville, near Sydney, in the county of Cumberland and Colony of New South Wales, have invented a certain new and useful Non-Refillable Bottle, of which the following is a specification.

10 The neck of the bottle is formed into a spherical bulb, and above the bulb the neck is continued upward to receive the cork. In the upward continuation two recesses are made for purposes to be hereinafter explained.
15 The bottom of the upward continuation is formed with an annular projection, which forms a seat for a cylindrical appliance which is to be inserted in the continuation. The cylindrical appliance, that is seated upon the
20 annular projection, is open at the top and partially closed at the bottom by means of a fan-shaped arrangement of vanes which do not rotate. In order to prevent the cylindrical appliance being withdrawn from the continuation
25 of the neck, spring-lugs are placed on the sides of the cylinder, which will enter the recesses formed in the continuation of the neck. Extending downward from the bottom of the cylindrical appliance and axially
30 with the same is a guide-rod. Inserted into the neck below the spherical bulb, which is ground to receive it, is a non-oxidizable stopper which perfectly fits the neck and stops the liquid from entering or leaving. The
35 stopper is intended to work back and forth in the same axial line with the cylindrical appliance above it. To this end it is bored axially to receive the guide-rod, which depends from the cylindrical appliance above. The
40 stopper is maintained in its seat by means of a non-oxidizable compression-spring of very weak power. Extending downward from the stopper is a four-way taper piece, and from this tapered piece depends a weight, which
45 will have the effect, in combination with the spring above the stopper, of causing the stopper to return to its seat in the neck when the bottle is placed in a perpendicular position.

50 In the accompanying drawings, Figure 1 is a vertical section of the neck of a bottle constructed according to this invention, the several internal appliances being in elevation.

Fig. 2 is an underneath plan of the tapered stopper. Figs. 3 and 4 are respectively underneath and top plans of the cylindrical appliance which is inserted in the continuation of the neck.

a is the bottle.

b is the spherical bulb.

c is the continuation of the neck.

d represent the recesses formed in the neck.

e is the cylindrical appliance, that is inserted in the continuation *c* of the neck.

f represent the lugs, which may fall into or be pressed into the recesses *d*.

g represent the vanes in the bottom of the cylinder *e*.

h is the guide-stem, which depends from the cylinder *e* and enters the stopper *j*, which is bored to receive it.

k is the compression-spring, which is placed between the cylinder *e* and the stopper *j*.

l is the four-way taper piece, which is a continuation downward of the stopper *j*.

m is the weight, which depends from the taper piece *l* and is connected to it by means of the chain *n*.

The *modus operandi* is as follows: The bottle must first be filled with the necessary liquor. The stopper *j* is then inserted onto its seat. The cylinder *e* is then introduced, care being taken that the guide-stem *h* shall enter the axial bore in the stopper, the spring *k* being introduced at the same time as the cylinder *e*. The cylinder *e* is forced down until it rests upon the annular projection above the bulb *b*. The lugs *f f* will either spring into the recesses *d d* or be punched into such recesses by a specially-constructed punch. By this means the cylinder *e* will be prevented from being withdrawn from the neck of the bottle. A cork may then be inserted into the top of the neck above the cylinder *e* in the usual way.

When it is desired to pour out the liquor contained in the bottle, the cork having been removed, it must be inverted and a slight shake given to it. This will have the effect of removing the stopper *j* from its seat in the neck, when the liquor will gurggle past the four-way part *l* into the bulb *b* and through the openings between the vanes *g* into the glass. When the bottle is empty, no fresh liquor can be inserted, because the stopper will always

remain on its seat, and no appliance can be introduced to lift the stopper *j*, because any such appliance would be deflected from the vertical by means of the vanes *g*. The four-
 5 way tapered piece *l* permits the liquid to run out when the stopper enters the bulb. At the same time it serves to hold the stopper fairly central of the neck and insures its proper return to position when the bottle is
 10 set upright, thereby avoiding all liability of the stopper turning or catching on the edge of its seat.

Having now described my invention, what I claim as new, and desire to secure by Letters
 15 Patent, is—

In non-refillable bottles, a neck provided

with a bulb in combination with a stopper adapted to fit into the neck of the bottle below the bulb, such stopper being provided at its lower part with a four-way taper piece, 20 and a small cylinder adapted to be fastened into the neck of the bottle, above the bulb, the bottom of which is constructed of deflector-vanes and from which depends an axial stem or rod upon which the stopper is 25 adapted to slide, as herein specified.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHARLES AUGUSTUS GROSS.

Witnesses:

JAS. T. HUNTER,
 R. W. EWERS.