No. 862,707.

PATENTED AUG. 6, 1907.

J. BURDICK & C. A. CHURCHILL.

NON-REFILLABLE BOTTLE

APPLICATION FILED JUNE 8, 1906.

2 SHEETS—SHEET 1.

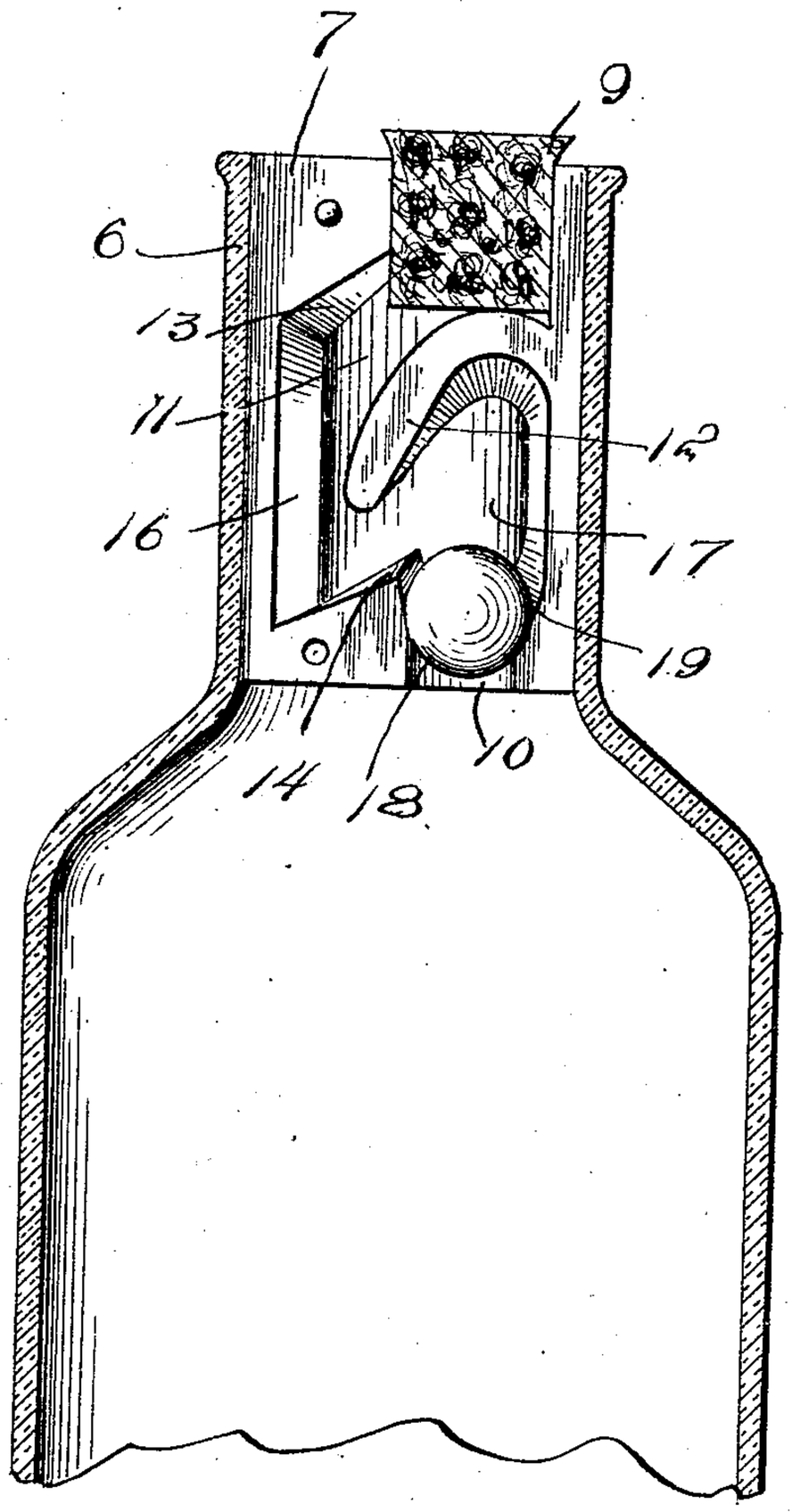
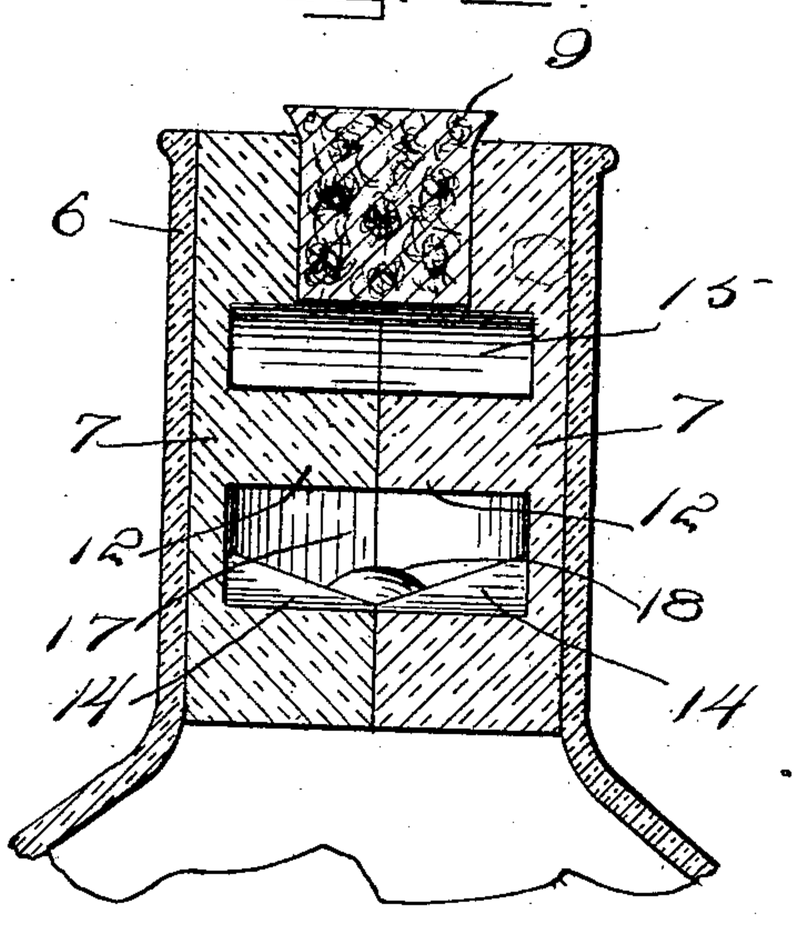


Fig. 1.

Fig. 2.



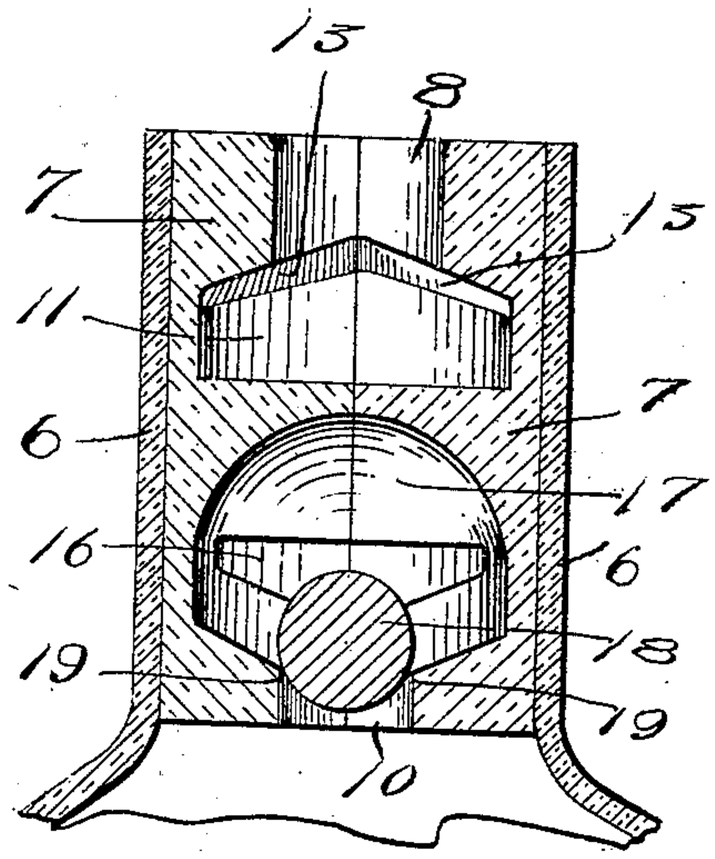


Fig. 3.

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2 SHEETS—SHEET 2.

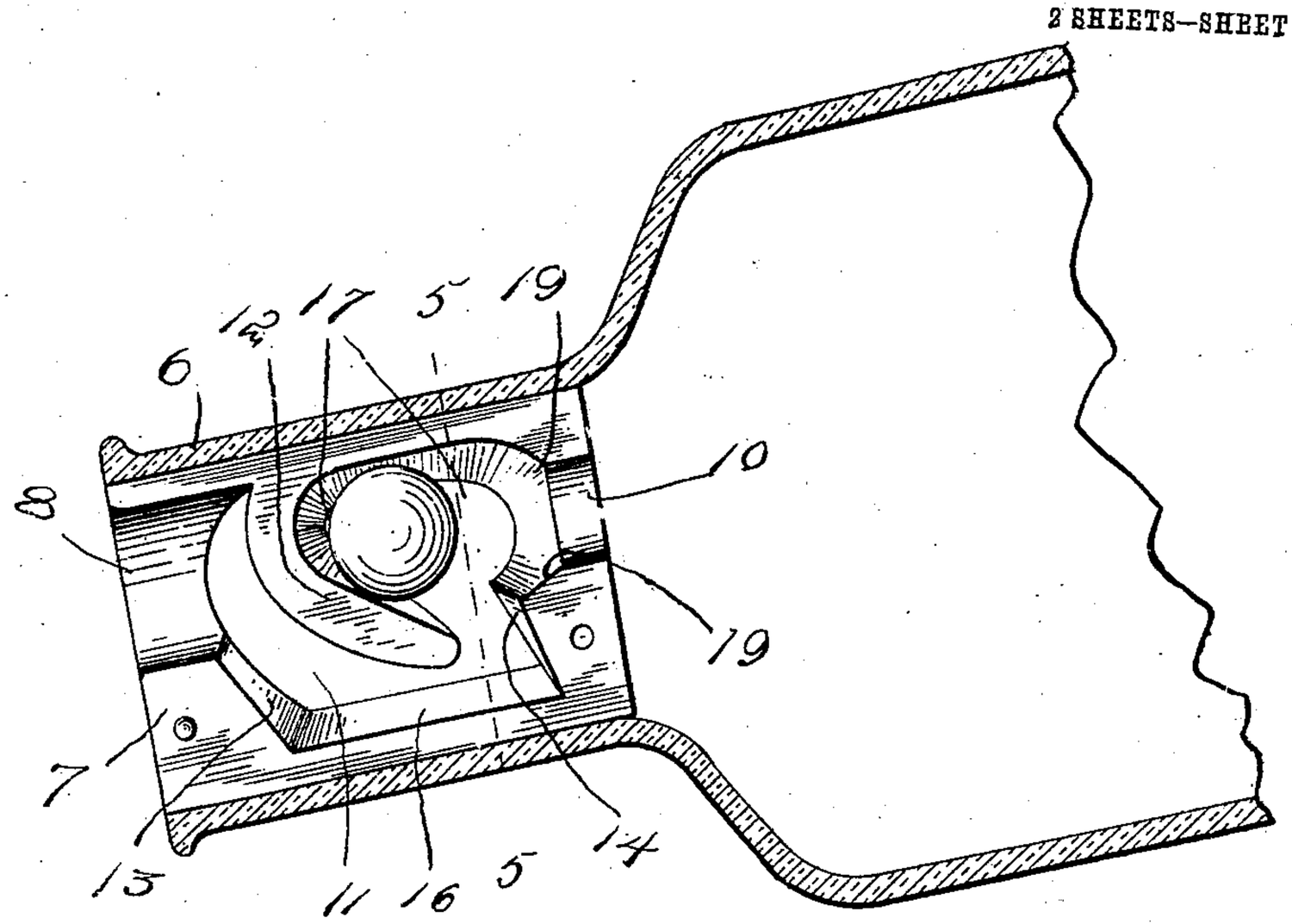

Fig. 4.

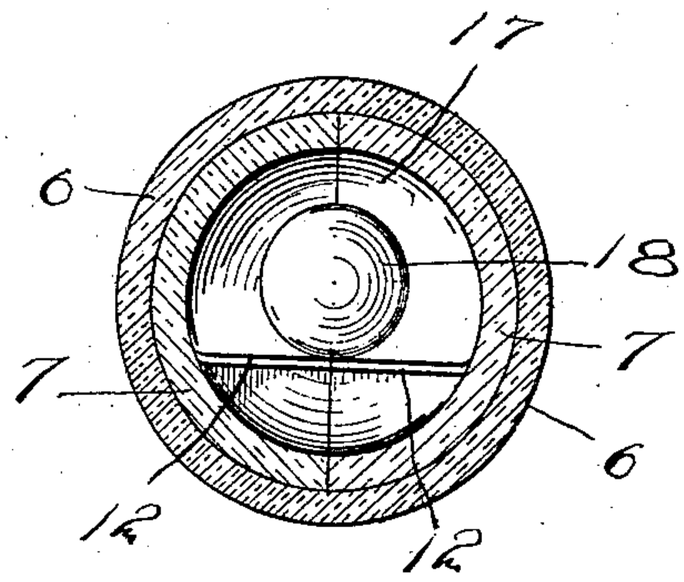

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN BURDICK AND CLARENCE A. CHURCHILL, OF BROWNING, MONTANA.

NON-REFILLABLE BOTTLE.

No. 862,707. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed June 8, 1906. Serial No. 320,802.

To all whom it may concern:

Be it known that we, JOHN BURDICK and CLARENCE A. CHURCHILL, citizens of the United States, residing at Browning, in the county of Teton, State of Montana, have invented certain new and useful Improvements in Non-Refillable Bottles; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to non-refillable bottles and has for its object to provide a two-part plug which may be inserted in the neck of a suitable sized bottle and having a novel form of zig-zag passageway formed therethrough in which is located a ball-valve which will effectually prevent refilling of the bottle but will permit ready discharge of the contents therefrom.

With the above and other objects in view, the present invention consists in the construction and arrangement of parts, shown in the accompanying drawings, in which:

Figure 1 is a vertical sectional view through a bottle-neck showing one member of my two-part plug in position therein and in elevation. Fig. 2 is a vertical sectional view taken at right angles to the plane of Fig. 1. Fig. 3 is a view similar to Fig. 2 but looking in an opposite direction. Fig. 4 is a view similar to Fig. 1 showing the bottle tilted to discharge its contents therefrom, and, Fig. 5 is a transverse sectional view through the plug and the neck of the bottle in which it is seated on the line 5—5 of Fig. 4.

Referring more specifically to the drawings, the numeral 6 denotes the neck of a bottle in which the plug comprising my invention is to be seated, the said plug being formed of sections 7 which are each substantially semi-cylindrical in form and are designed to be placed with their plane faces against each other and to be secured in this position in the neck of the bottle by means of a suitable cement.

Each of the sections 7 is provided in its plane face with a recess or channel, which, when the sections are placed together in the neck of the bottle, register with each other and form a tortuous passageway. The channel in each section opens through the ends thereof at a point adjacent one of the side edges of the member. The end portions of each channel are semi-cylindrical, and it will be understood that when the sections are in position in the neck of the bottle, a circular opening 8 will be formed for the reception of a stopper 9 to close the bottle and that a similar opening 10 will be formed for the passage of liquid from the bottle.

Intermediate the portions 8 and 10 of the channels, they are enlarged to extend to a point adjacent the opposite side edges of the sections as at 11 and extending from one side wall of the recess of each section and into the said recess is a partition 12. The said partition extends into the enlarged portion of the recess and is curved downwardly and has its end terminating in a vertical plane beyond that occupied by the adjacent side of the opening 8. The top and the bottom walls of the enlarged portion of the recess of each section are inclined downwardly and upwardly respectively from the plane face of the section toward the curved face thereof as indicated by the numerals 13 and 14 and the said top and bottom walls are inclined upwardly from the side edge of the enlarged portion of the said recess in substantially parallel planes. As shown in Figs. 1 and 4, the partition 12 is in spaced relation to the top, bottom and side walls of the enlarged portion of the recess and that in this manner, when the sections are placed with their plane faces abutting each other, a tortuous passageway will be formed through the plug, as indicated by the numeral 15. The side walls of the recesses of the two sections, indicated by the numeral 16, are located in different vertical planes. It will be observed that the partition 12 of each section forms a minor recess 17 and in this recess is disposed a ball-valve 18 which is normally designed to close the opening 10 in the plug, the portions of the walls of the recess adjacent the said opening being inclined to form a seat 19 for the ball-valve 18. The corresponding portions of the walls of the minor recesses 17 of the two sections are located in planes at angles to each other as clearly shown in Figs. 1 and 2 and this tends to confine the movement of the ball-valve 18 to the middle of the recess and allow for rapid seating.

When it is desired to remove the contents of the bottle, it is tilted in the usual manner and the ball valve 18 leaves its valve seat 19 and lies in the upper end of the minor recess 17 in which it is located, thereby permitting the passage of liquid from the bottle. The passageway which is formed through the plug, is of greater width than the the ball-valve 18, and it will be readily understood that by reason of this fact and the fact that all of the walls of the recesses are inclined toward the vertical middle of the plug, the ball-valve will assume a position at the middle of the recess 17 and upon the end of the bottom wall of the recess 15 and the end of the partition 12 when the bottle is only slightly tilted, the liquid being thus allowed to pass freely around the sides of the ball-valve and from the bottle.

It is to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

What is claimed is:

A bottle valve casing comprising a pair of sections which are semi-cylindrical in form and are adapted to be placed with their plane faces in registration, each of said sections having a groove formed therein and extending

from end to end of the same, the ends of the grooves being semi-cylindrical in form and adapted to form at one end of the device a stopper opening and at the other end a valve seat, a ball valve located upon the seat, the main portion of the grooves being located out of alinement with the openings formed at the ends of the device, the upper and lower walls of the grooves of each section being inclined downwardly and upwardly respectively and located in different planes with respect to each other, the side walls of the grooves of the two sections being located in different planes with respect to each other, a partition formed in each of the grooves and extending in a downwardly curved direction, and the under walls of the partitions being located in different planes with respect to each other.

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

JOHN BURDICK.
CLARENCE A. CHURCHILL.

Witnesses:
JAS. B. WELCH,
OLIVER J. RACINE.