

No. 864,834.

PATENTED SEPT. 3, 1907.

F. J. DAVIS.

NON-REFILLABLE BOTTLE.

APPLICATION FILED NOV. 2, 1906. RENEWED FEB. 8, 1907.

Fig-1-

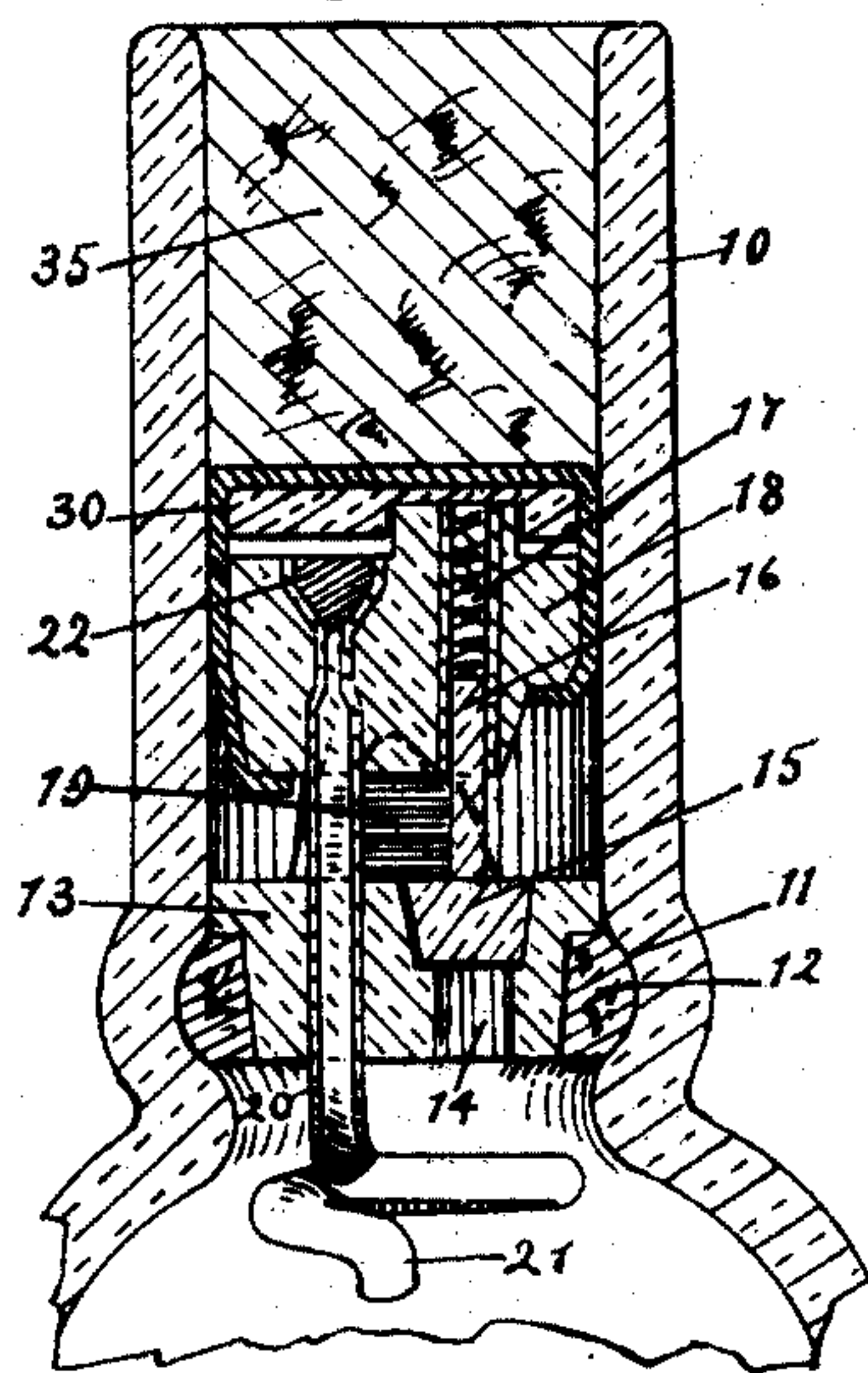


Fig - 2 -

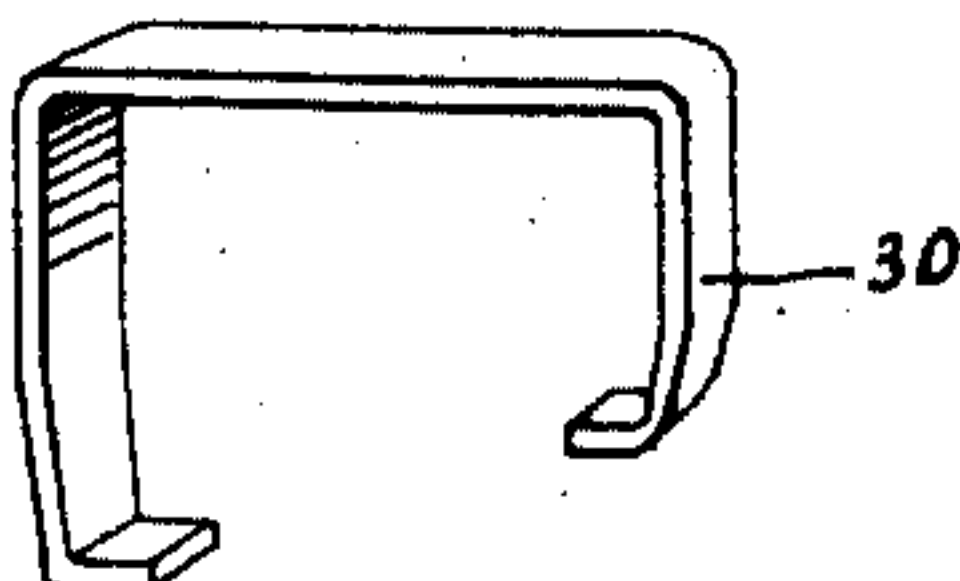


Fig - 3 -

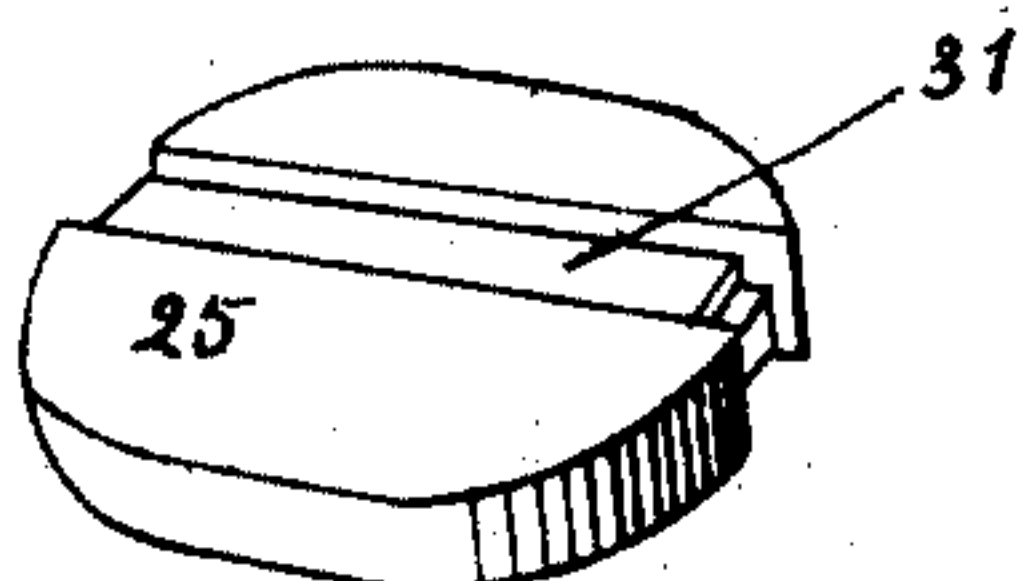


Fig - 4 -

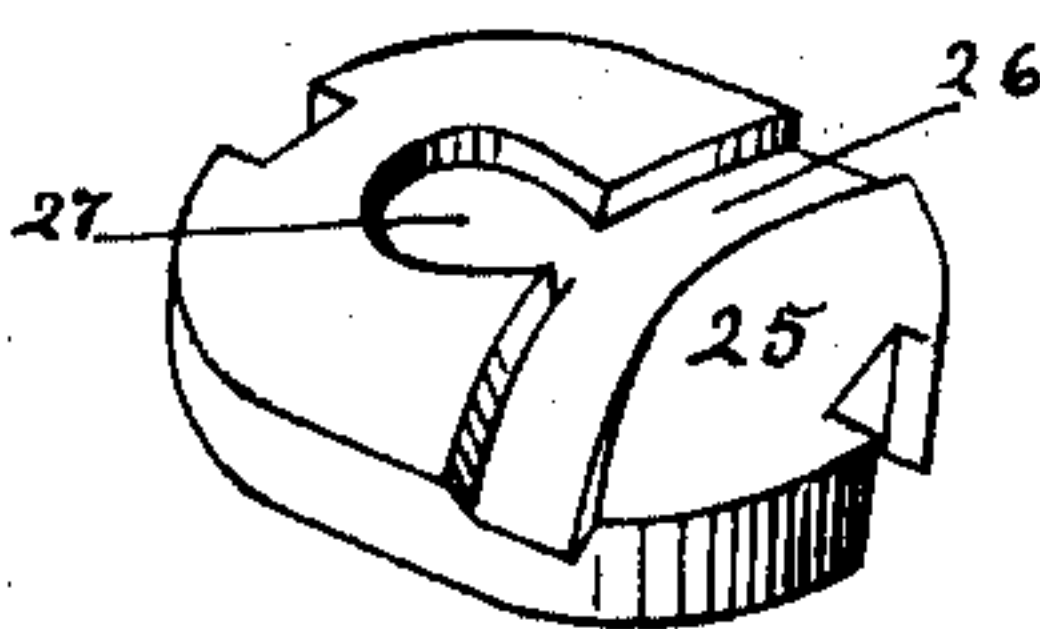


Fig - 5 -

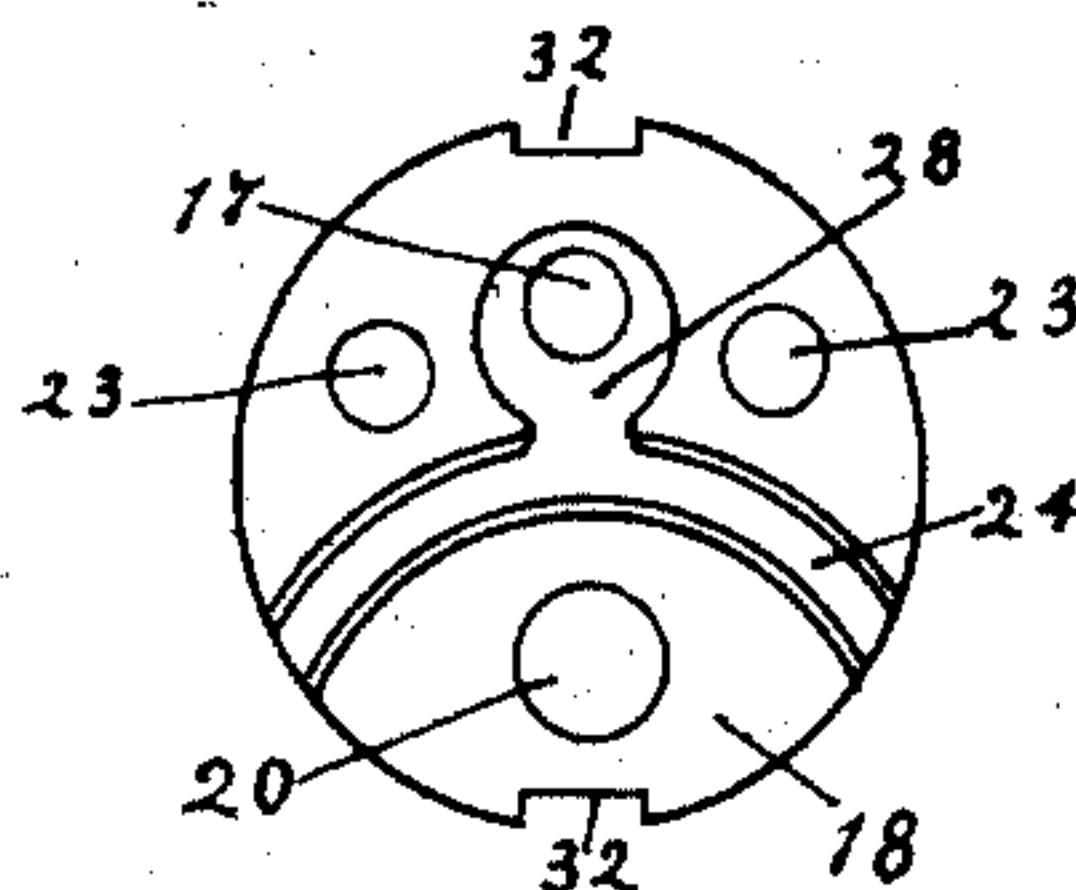


Fig-6-

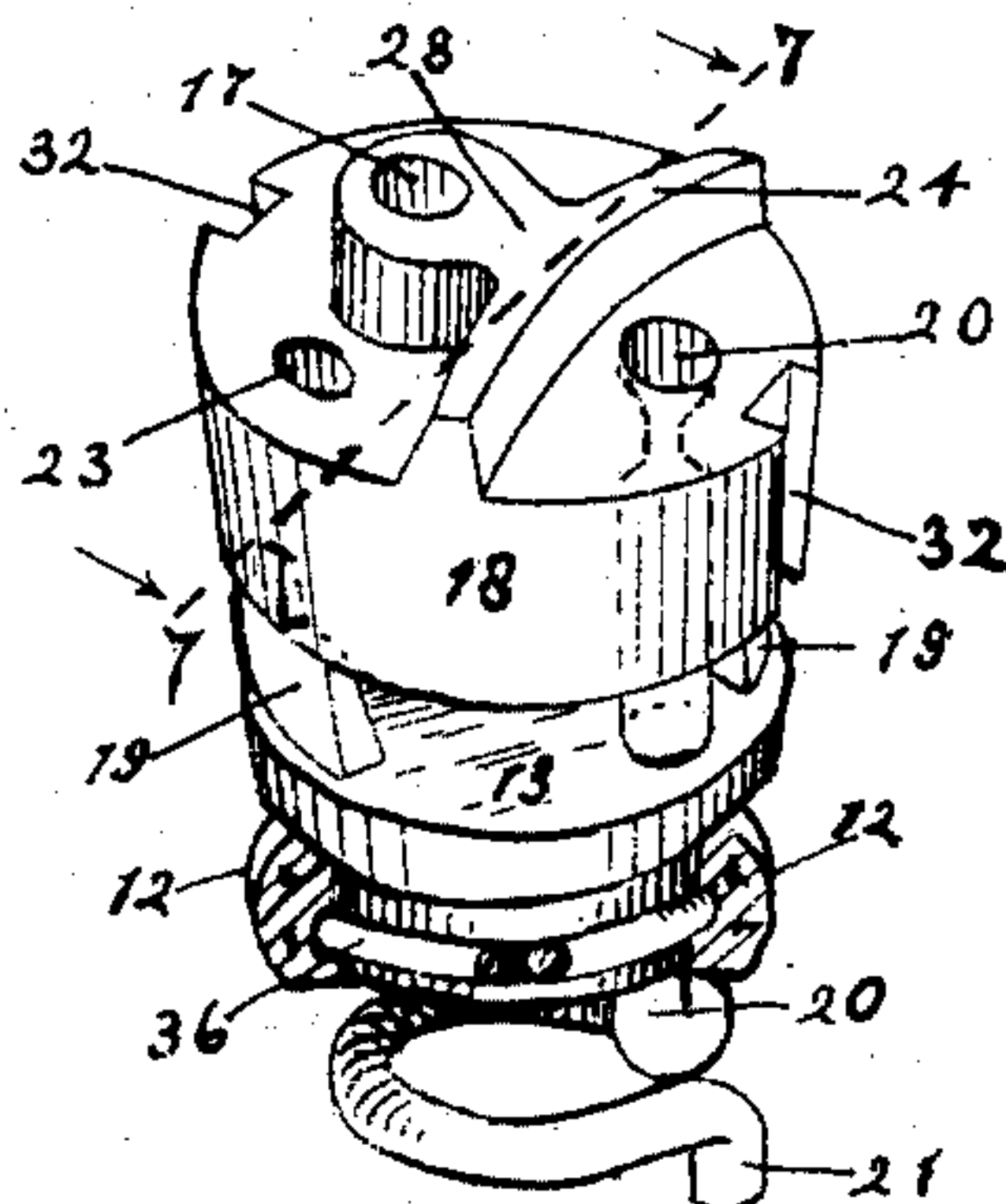


Fig - 7 -

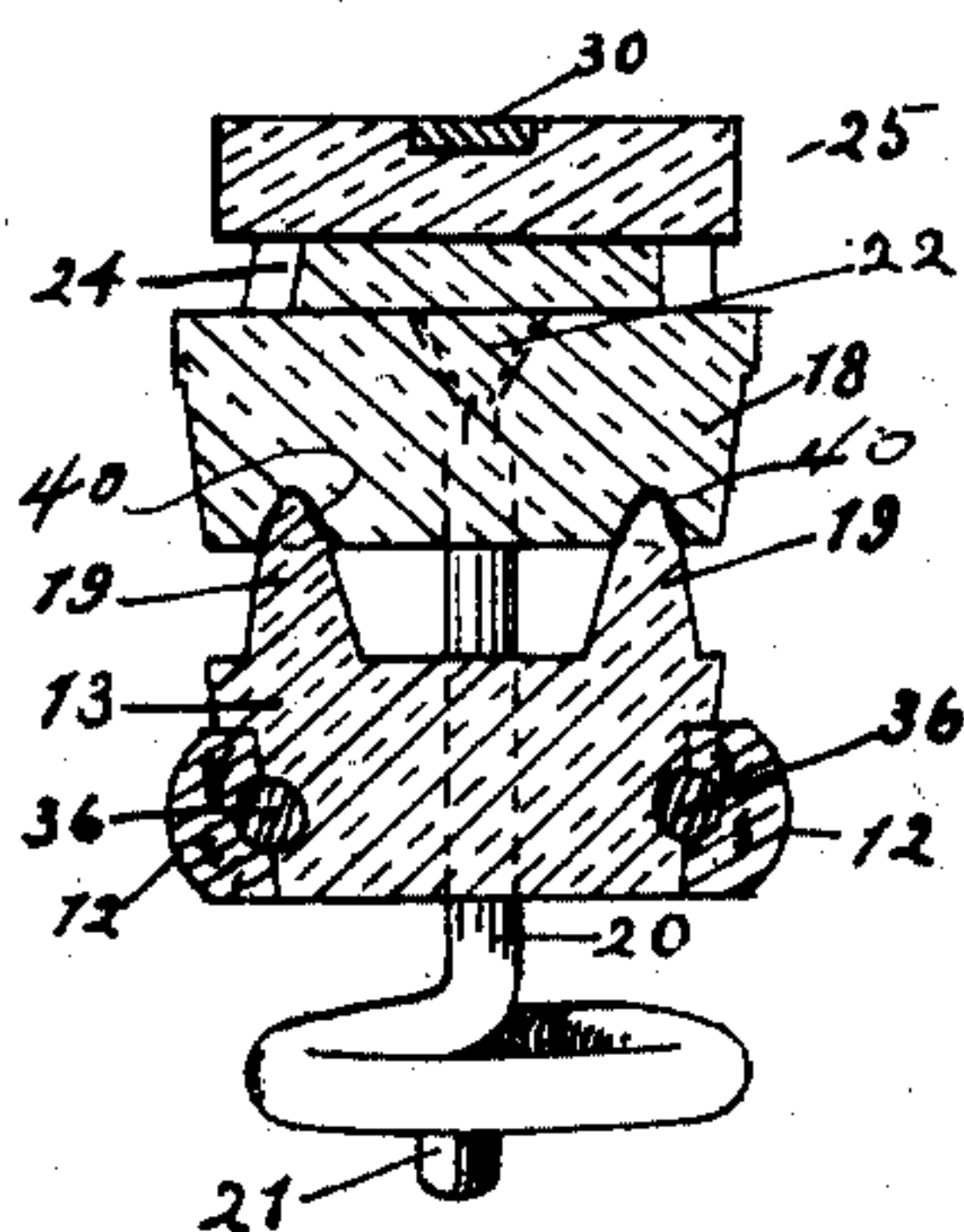


Fig - 8 -

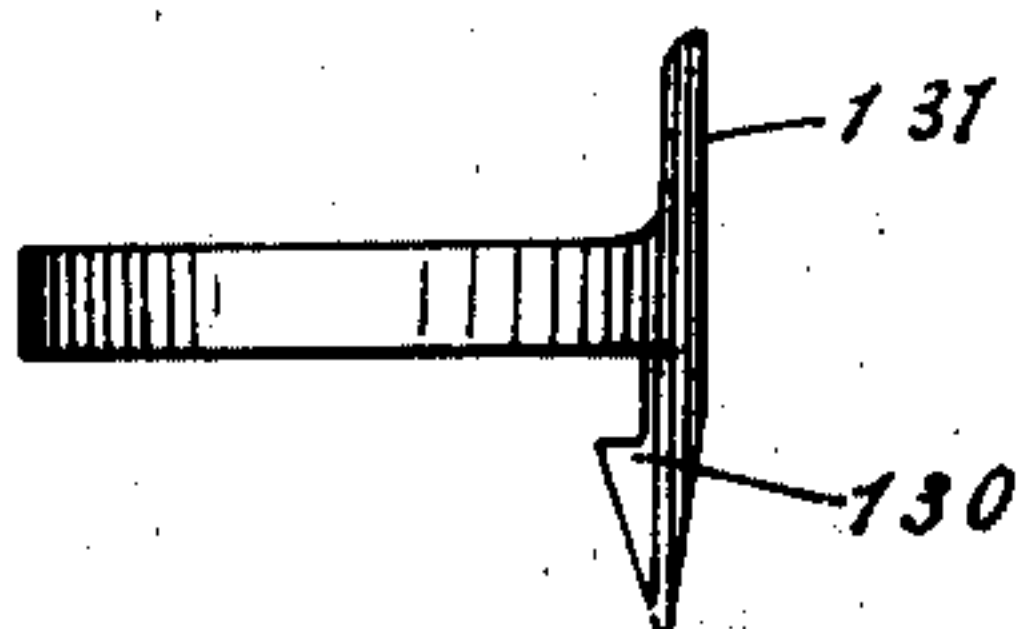


Fig - 9 -

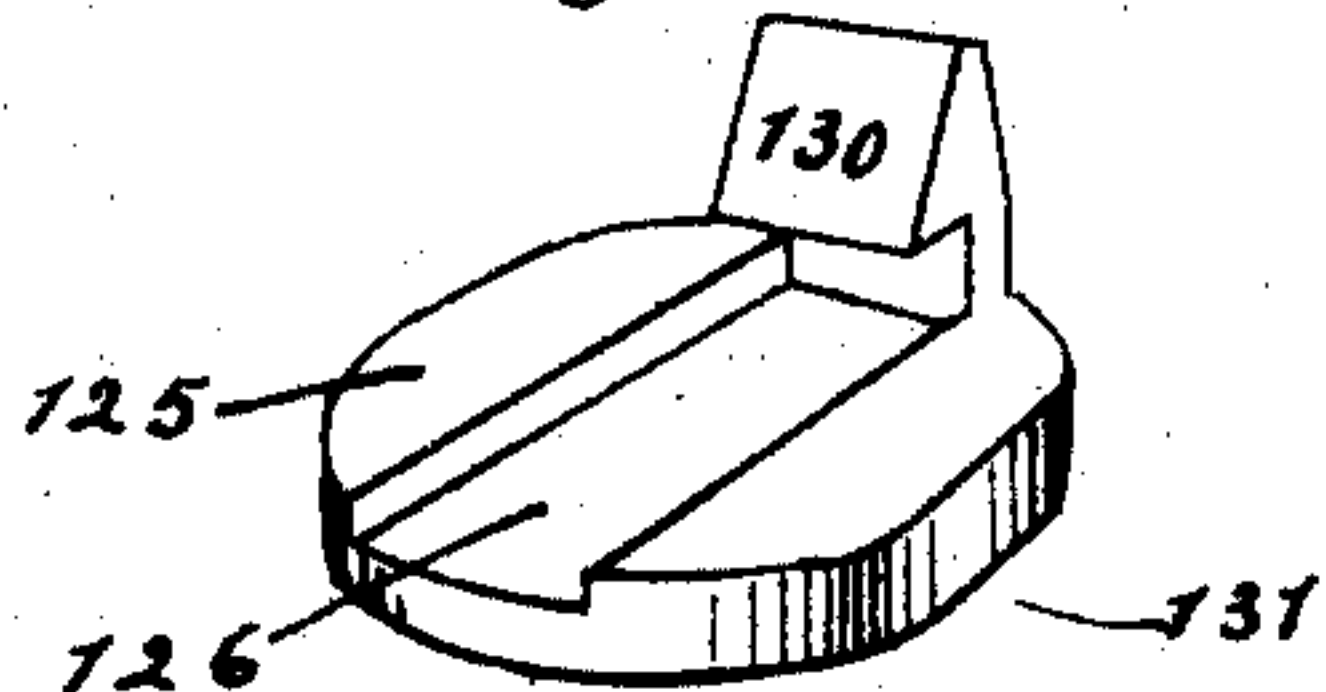
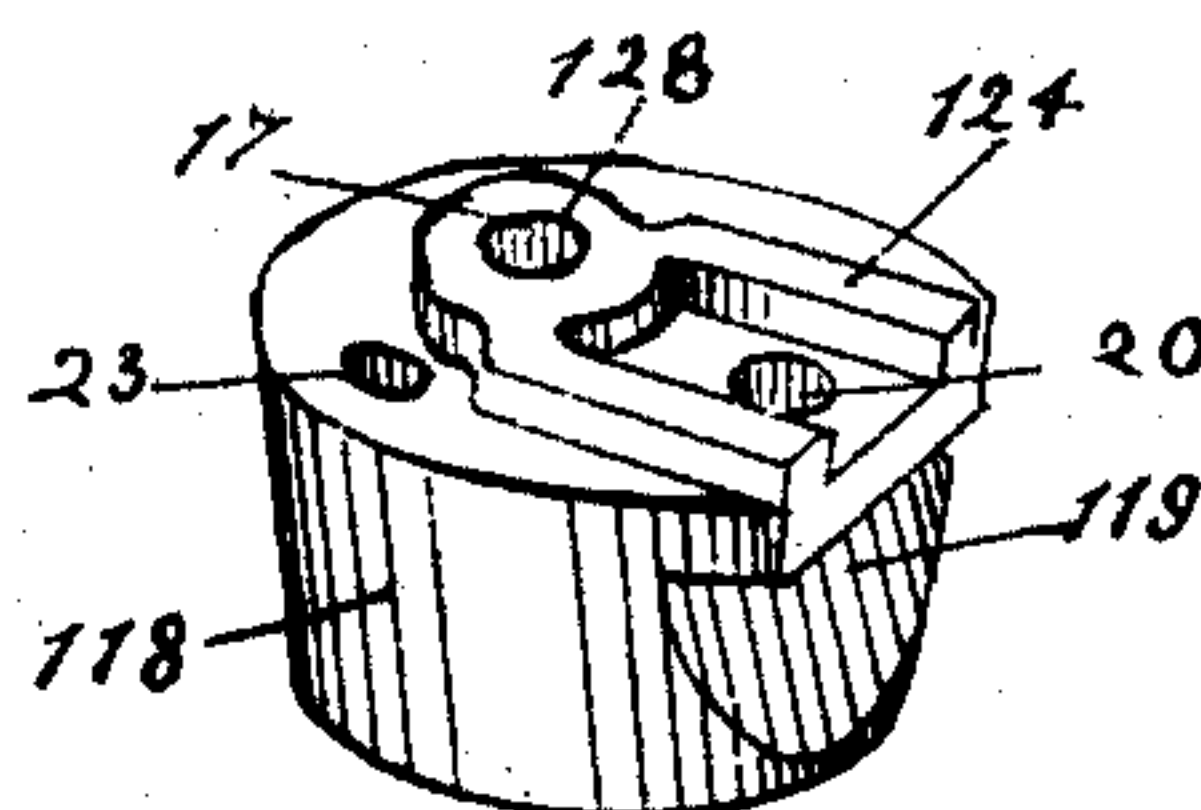


Fig - 10



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK J. DAVIS, OF INDIANAPOLIS, INDIANA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE WAGNER-DAVIS GLASS COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

NON-REFILLABLE BOTTLE.

No. 864,834.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed November 2, 1905, Serial No. 285,530. Renewed February 8, 1907. Serial No. 356,460.

To all whom it may concern: .

Be it known that I, FRANK J. DAVIS, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Non-Refillable Bottle; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to provide a stopper for bottles that will permit the contents to flow out but will prevent the refilling of the bottle.

One feature consists in the idea of uniting the sections or parts of a stopper with gelatin or other adhesive material that will be rendered non-adhesive by the contents of the bottle after the stopper has been put in place.

Another feature consists in forming the stopper of sections, arranging and combining them so that they will resist much pressure when applied to the insertion of the stopper but will separate so as to destroy the stopper when any attempt is made to withdraw the stopper.

The nature of this invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Figure 1 is a central vertical section through the neck of a bottle provided with my stopper. Fig. 2 is a perspective view of the metal band for holding the cap in connection with another part of the stopper. Fig. 3 is a perspective view of the cap. Fig. 4 is a perspective view of the cap inverted. Fig. 5 is a plan view of the part of the stopper below the cap. Fig. 6 is a perspective view of said part. Fig. 7 is a central vertical section on line 7—7 of Fig. 6 through a plane at a right angle with the section shown in Fig. 1, the form shown in Fig. 7 being modified somewhat. Figs. 8, 9 and 10 show a modified form of the top and upper portion of the stopper.

In detail 10 represents the upper part of a bottle in which there is an annular recess 11 at the lower part of the neck to receive the cork 12 for holding in place the lower part 13. Said lower part 13 is provided with a passageway 14 for the fluid having a valve seat in its upper end adapted to receive the valve 15. This valve has a stem 16 in a guideway in the upper part of the stopper 18 which guideway contains a spring 17 that tends to force the stopper 15 downward.

The lower part 13 of the stopper has two upwardly extending posts or lugs 19 that project into slight recesses in the under side of the upper part 18 of the stopper. Gelatin or other soluble adhesive 40 is placed upon the upper end of these lugs 19 for temporarily uniting parts 13 and 18 of the stopper. An air tube 20 likewise coöperates in holding the two parts of the stopper together, as it extends through them.

The lower part of the air tube is horizontally coiled to form the coil 21, so that liquid will not flow into the bottle through said coil while in a horizontal position. Liquid cannot flow into said tube in an inclining or upright position because of the valve 22. This gravity valve will freely open while the contents of the bottle are being discharged and permit air to enter the bottle. The upper part 18 of the stopper has two fluid outlets 23; it also has an upwardly extending rib 24 entirely across it to separate the air inlet side from the fluid outlet side.

The cap 25 is slightly elliptical and has on its under side a groove 26 adapted to rest upon and receive rib 24 and also a recess 27 adapted to rest upon the projection 28 of the upper part of the stopper. The cap is held in place on the upper part of the stopper by a band 30 that rests in a groove 31 along the greater diameter of the upper part of the cap and the band is turned downward to fit in the recesses 32 in the side of the upper part of the stopper and its lower extremes are turned inward to catch under the part 18 of the stopper.

The parts of the stopper are assembled before they are placed in the bottle, the two parts 13 and 18 being united by gelatin or other soluble adhesive located upon the lugs 19. Thus assembled, the stopper is forced into the neck of the bottle until the cork ring 12 enters the recess 11. Then the cork 35 is forced in upon the stopper. Considerable force may be used in forcing the stopper in without breaking it or dislocating any parts thereof.

The contents of the bottle may be discharged by inverting the same wholly or partially whereupon the liquid contents will force the valve 15 against the spring 17 which must be weak enough to be overcome by the weight of the fluid. The spring must be strong enough however to seat the valve 15 when it is not resisted by the fluid contents of the vessel. This will prevent the bottle being refilled. The stopper cannot be interfered with for the purpose of refilling it without breaking or destroying it, for soon after the stopper is put in place the connection between the two parts 13 and 18 will be severed by the solution of the gelatin or other adhesive and then nothing but the air tube 20 will remain as a connection and that is so frail as to break readily if any attempt be made to withdraw the upper part of the stopper from the neck of the bottle.

In Fig. 7 a spring ring 36 is shown for securing the cork 12 on the lower part 13 of the stopper. In Figs. 8, 9 and 10 a still further modification is shown as a substitute for the cap and the upper part 18 of the stopper. The portion shown in Fig. 10 marked 118 is a substitute for the part 18, it having a notch 119 on one side and upward extensions 124 and 128 on top. The part shown in Figs. 8 and 9 marked 125 is a substitute for the cap 25, it having on its under side a groove 126 to fit over

the portions 124 and 128 of the part 118. The cap 125 has also a downwardly extended catch 130 to engage the notch 119 when the cap is in place on the part 118. Said cap has also an upward extension 131 that, when
 5 the modified stopper is in place, will be held against the side of the neck of the bottle. The cap 25 is elliptical so that there be space between the two contracted sides and the neck of the bottle for the outlet of the contents. This construction prevents the insertion of
 10 a tool or wire through the hole 23 to reach and affect the valve.

A bottle cannot be refilled by placing it in a horizontal position in shallow fluid with the expectation of some fluid passing in through the air tube, whereof the
 15 coil which, when the bottle is in position extends above the line of the body of the air tube and higher than the level of the fluid in such an attempt. If the bottle be thus placed in deeper fluid so as to submerge the bottle or bring the level of the fluid above the body of the air
 20 tube, no fluid can enter because it will be resisted effectually by the air in the bottle.

What I claim as my invention and desire to secure by Letters Patent is:

1. A non-refillable bottle stopper including inner and
 25 outer portions, and a soluble adhesive for holding the parts together prior to and during the insertion thereof in a bottle.
2. A non-refillable bottle stopper formed of inner and

outer sections, means for separating said sections to leave
 a chamber between them and that will not crush while the
 stopper is being inserted in the neck of the bottle, and
 means connecting the two sections that is so fragile as to
 break if any effort be made to withdraw the stopper. 30

3. A non-refillable bottle stopper including inner and
 outer sections with a chamber between them and a passage-
 way through the inner section, a valve for closing said pas-
 sageway that opens into said chamber, lugs on the inner
 section for separating it from the outer section to form
 said chamber and so that the stopper may be forced into
 the bottle without injury to the parts, and a glass air tube
 extending through said sections of the stopper, said outer
 section being provided with fluid outlet passages there-
 through. 35

4. A non-refillable bottle stopper including inner and
 outer sections, the outer section having passageways
 through it for the fluid and air and an upwardly extending
 rib between the air and fluid passage-ways, a cap that fits
 upon said rib, said cap and outer section being grooved
 along the top and sides, and a band fitting over said parts
 in said grooves. 40

5. A non-refillable bottle stopper with a fluid outlet
 therethrough on one side of the center thereof, a valve for
 closing said outlet, and an air tube extending through said
 stopper on the other side of the center thereof with its in-
 ner end horizontally coiled. 45

In witness whereof, I have hereunto affixed my signature
 in the presence of the witnesses herein named. 50

FRANK J. DAVIS.

Witnesses:

HELEN B. MCCORD,
 N. ALLEMONG.