No. 733,344. PATENTED JULY 7, 1903.

G. P. SULLIVAN & Z. P. FREEMAN.

BOTTLE OR VESSEL STOPPER DEVICE.

APPLICATION FILED OCT. 4, 1902.

NO MODEL.

Fig. 1.

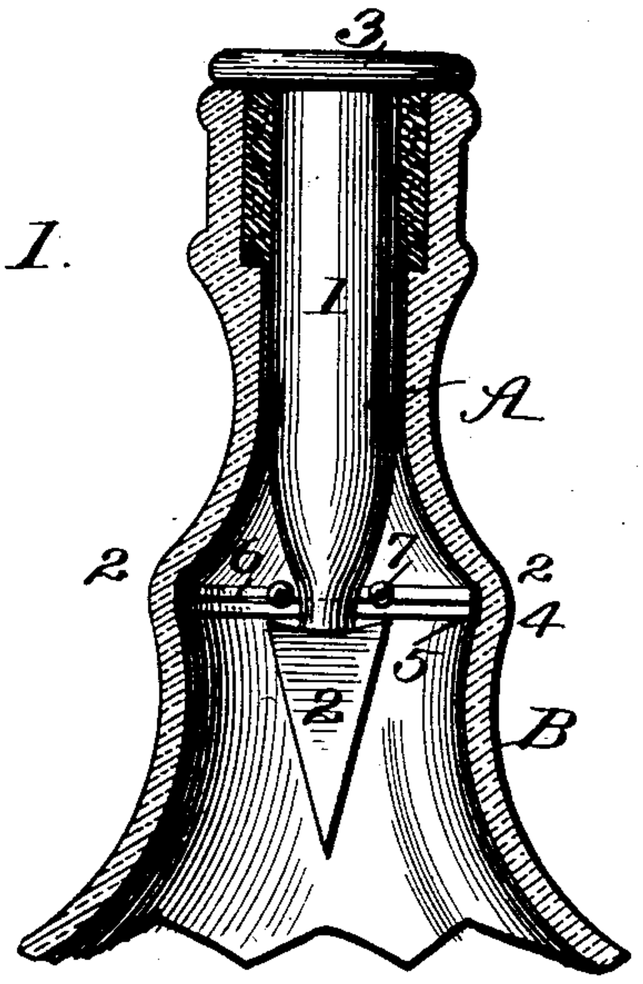


Fig. 2.

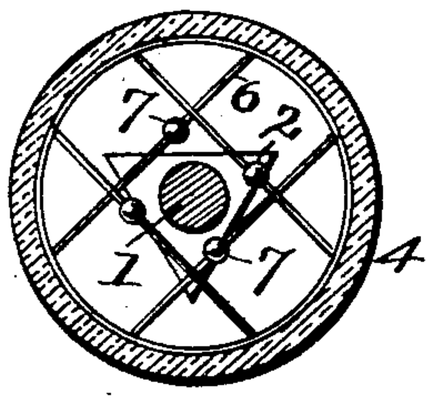
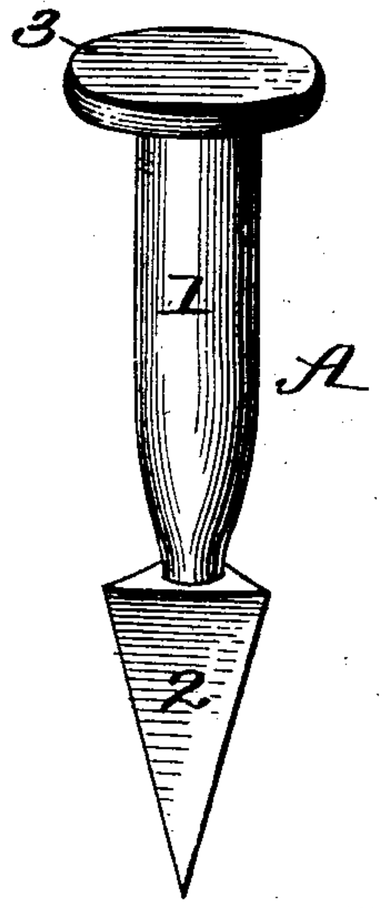


Fig. 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GEORGE PIERCE SULLIVAN AND ZENAS PARKER FREEMAN, OF TAMPA, FLORIDA.

BOTTLE OR VESSEL STOPPER DEVICE.

SPECIFICATION forming part of Letters Patent No. 733,344, dated July 7, 1903.

Application filed October 4, 1902. Serial No. 125,938. (No model.)

To all whom it may concern:

Be it known that we, GEORGE PIERCE SULLIVAN and ZENAS PARKER FREEMAN, citizens of the United States, residing at Tampa, in the county of Hillsboro and State of Florida, have invented a new and useful Bottle or Vessel Stopper Device, of which the following is a specification.

Our invention is an improvement in the class of bottles having stoppers and other attachments so constructed and arranged that the stoppers cannot be withdrawn without leaving indications thereof.

Our invention is embodied in the construction, arrangement, and combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal central section of a bottle-neck provided with our improvement. Fig. 2 is a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the stopper.

The stopper A may be constructed of any suitable material. It has an elongated cylindrical body 1, an arrow-shaped head 2, which is triangular in cross-section, and a flanged head 3.

The bottle-neck B is provided with a swell 4, and a ring 5 is arranged in the groove thus formed in the interior of the neck. This ring may be constructed of metal or any suitable material. The ring is inserted in the bottle-neck in the process of manufacture—that is to say, in making the bottle the body is blown in proper form, leaving the neck thereof funnel shape or flared outward. At this stage the ring is introduced, and the neck is then molded and contracted to the desired shape. Four wires 6 are attached to the said ring and extend across the space inclosed by it. These wires are arranged to form a quadrilateral, (see Fig. 2,) which is slightly less in dimension than the largest cross-sectional area of the arrow-point 2 of the stopper A. It will be seen that when the stopper A is inserted in place, as shown in Fig. 1, its pointed head 2 will pass through the quadrilateral formed by the wires 6 and that the latter will be required to yield laterally in order to allow the largest diameter of the head 2 to pass, that when the head 2 has reached the position shown in Fig. 1, the angular shoulders of the same being below the wires and the latter resuming their normal position, the stopper cannot be withdrawn without engagement of such head with the wires and that in such withdrawal one or more of the wires will be broken. The elasticity of the wires will always permit the head 2 of the stopper to pass downward without breaking them. It will be further seen that since the shoulders of the triangular head 2 are curved upward (see Fig. 1) they will tend to draw the wires toward the shank of the stopper when the latter is being withdrawn, thus insuring rupture of one or more of the wires. For the purpose of more plainly indicating the rupture of the wires by withdrawal of the stopper A—that is to say, for indicating more plainly the normal and abnormal positions of the wires—we apply small spheres or balls 7 to them. The same may be in the form of glass beads, and they are in any case threaded loosely on the wires, so that when the latter are broken the spheres will slide off, or in case that this does not occur at the time of rupture it will do so when the bottle is tilted for pouring out its contents.

The stopper A is made nearly of the same diameter as the neck of the bottle in its upper portion, and the head 3 being extended laterally over the edge of the neck it is impossible to insert a wire or other instrument so as to spread the wires, and thus effect withdrawal of the stopper, without breaking of the wires.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a bottle having a ring secured in its neck and provided with wires arranged and crossing each other in such manner as to form a quadrilateral, and spheres loosely mounted on said wires, of a stopper having a flanged head, and a triangular point whose largest diameter exceeds the diameter of the quadrilateral taken parallel to one of the wires, the said head being adapted to pass through the quadrilateral by slight distention of the latter and to engage the same, substantially as shown and described.

2. The combination, with a bottle having cross-wires arranged transversely in its neck

and forming a quadrilateral, of a stopper having a triangular point which is adapted to pass through said quadrilateral by distending the same, and whose greatest diameter is such that upon any attempted withdrawal of the stopper its shoulders will engage one or more of the wires, substantially as shown and described.

3. The combination, with a bottle having cross-wires arranged transversely in its neck, of a stopper having a pointed head adapted to pass between the several wires and provided with upturned shoulders which are adapted to engage the wires when the stopper is withdrawn, substantially as shown and described.

4. The combination, with a bottle having cross-wires arranged transversely in its neck and forming a quadrilateral as specified, of a stopper having a cylindrical body which is nearly of the same size as the interior of the bottle-neck above said wires, and provided with a flanged head, and a triangular point adapted to pass between the wires by distention of the latter and into engagement when drawn out, substantially as shown and described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE PIERCE SULLIVAN.
ZENAS PARKER FREEMAN.

Witnesses:
THOS. J. O'NEILL,
JOHN C. WHITE.