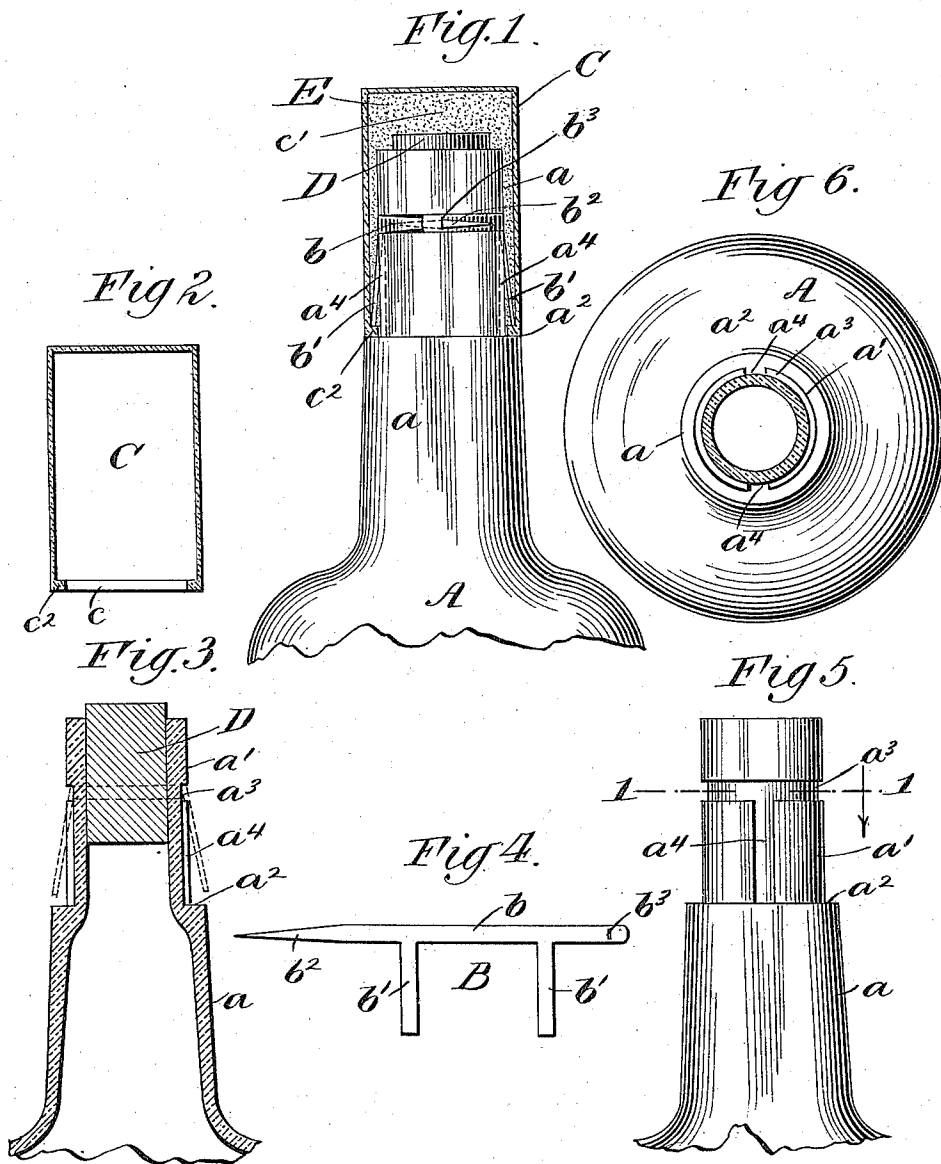


(No Model.)

J. A. PEARSON.
BOTTLE.

No. 579,304.

Patented Mar. 23, 1897.



WITNESSES:

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JOHAN AUGUST PEARSON, OF GLEN COVE, NEW YORK.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 579,304, dated March 23, 1897.

Application filed September 24, 1896. Serial No. 606,860. (No model.)

To all whom it may concern:

Be it known that I, JOHAN AUGUST PEARSON, a citizen of the United States, and a resident of Glen Cove, county of Queens, and State of New York, have invented certain new and useful Improvements in Bottles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to bottles, and has special relation to an improved safety-cap construction of that class which is designed to prevent unauthorized reuse of the bottle.

The object of my invention is to provide a simple and improved safety-cap bottle in which only one member of the safety-cap devices will be destroyed in opening the bottle, thus insuring economy in manufacture and use, and which in its general construction and arrangement will effectively guard against unauthorized refilling and reuse of the bottle.

In the drawings, Figure 1 is a side elevation of the top or neck portion of a bottle embodying my improvements, the capsule being shown in section. Fig. 2 is a detail vertical sectional view of the capsule detached. Fig. 3 is a detail vertical sectional view of the neck of the bottle proper. Fig. 4 is a detail plan view of the spring-blank. Fig. 5 is a detail side view of the neck of the bottle; and Fig. 6 is a detail transverse sectional view taken on the line 1 1, Fig. 5.

Referring to the drawings, A designates the body of the bottle, which may be, in the main, of any suitable or desired shape or construction, having the neck portion *a*.

The cylindrical portion *a'* of the neck *a* is reduced in diameter to form an annular shoulder *a²*, and in this reduced portion at a suitable distance above said shoulder is provided a circumferential annular groove *a³*, intersected on diametrically opposite sides by vertical grooves *a⁴*, extending downwardly to the base-shoulder *a²*.

B designates a spring, which may be formed of tin, sheet-iron, or other suitable metal, and comprises a main strip or belt portion *b*, adapted to be arranged and secured in the circumferential groove *a³*, from which portion *b* extend downwardly two spring-arms *b'* *b'*, cor-

responding to the vertical grooves *a⁴* *a⁴*. In their normal position the spring-arms *b'* *b'* are swung outwardly from the vertical grooves in relatively divergent position. (See Fig. 1.) The top or belt portion *b* of the spring may be secured in its annular seat-groove *a³* in any suitable or adapted manner, but I prefer to form this portion *b* with a binding end, as shown at *b²*, adapted to enter the slot or opening *b³* in the opposite end to bind or clamp the spring in position.

C designates a capsule or cap-piece, which may be formed of glass or other fragile material, and is adapted to inclose the reduced neck portion of the bottle. The capsule C is of cylindrical construction with an open bottom end *c*, and is of greater interior diameter than the reduced portion of the neck, the exterior diameter of the capsule preferably corresponding to the diameter of the main neck portion *a*. The capsule is adapted to rest, when in position, upon the circumferential shoulder *a²*, and it is also of greater length than the reduced neck portion *a'* to provide a suitable space, as at *c'*, between the top of the neck portion of the bottle and the cork or stopper and the top of the capsule. (See Fig. 1.)

At the bottom of the capsule is provided interiorly an annular projecting flange or shoulder *c²*, the base of which rests upon the shoulder *a²*.

It will be noted that there are but three parts to my improved bottle—viz., the bottle, spring, and inclosing capsule or cap-piece—all of which are permanent in the reuse of the bottle, except the capsule, thus insuring economy in manufacture and reuse.

In practice the bottle is first corked by means of the cork or stopper D, the arrangement being preferably such that the top of the latter projects a short distance above the rim of the neck of the bottle. The capsule is then filled, preferably to about one-third the capacity, with plaster-of-paris, sealing-wax, or other suitable plastic material, as shown at E, and the capsule is then permitted to stand after filling in inverted position. The spring is then fastened in position upon the neck of the bottle, the pointed end or tine being secured in the opening *b³*, with the

spring-arms projecting outwardly from the vertical grooves. The bottle is then turned into reverse position and the reduced portion of the neck is inserted downwardly into the capsule, in which operation the spring-arms are forced inwardly into the vertical grooves by contact with the interior flange c^2 of the capsule until said flange passes beyond the ends of the spring-arms and comes in contact with the base-shoulder a^2 , when the spring-arms return to their normal outwardly-projecting position, and thus serve to lock the capsule in connection with the bottle by their engagement with the shoulder formed by the interior flange c^2 . It will be noted that in this operation of the spring-arms when the neck of the bottle is inserted in the capsule the plastic material in the latter will not reach the spring-arms nor interfere with their locking operation, the bottle and capsule being at this time in inverted position.

When the capsule and bottle are secured in connected position, as above described, the bottle is turned upright into normal position, when the plastic material E within the capsule will run down and properly fill the space between the reduced portion of the neck and the surrounding base portion of the capsule. After the capsule is thus locked in position it will be impossible to remove the cork or stopper or open the bottle without breaking the capsule. The latter operation may be readily accomplished by tapping upon the top of the capsule with a wooden or other suitable instrument, and the impact of the blow will be received upon the top of the cork or stopper D, thus obviating any liability of damage to the rim of the neck of the bottle. It will be understood that after use the bottle can only be reused for the same specific purpose of manufacture by applying a new capsule and resealing the same, which reuse of

the bottle may be effected by the manufacturer at a small expense.

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

1. An improved bottle having vertical grooves in its neck portion for the accommodation of projecting spring-arms; in combination with spring-arms arranged in relation to said grooves, means for securing said spring-arms upon the said neck portion, comprising the belt portion b tapered at one end b^2 and adapted to enter slot b^3 at the end where the band or belt encircles the groove a^3 , a fragile capsule or cap-piece provided with an interior annular shoulder adapted to be engaged by said spring-arms, and a plastic filling, substantially as and for the purpose set forth.

2. An improved bottle, comprising a reduced neck portion forming an annular base-shoulder and provided above the latter with a circumferential groove intersected by vertical grooves extending to said base-shoulder, a spring device embodying a plate or main portion secured in said circumferential groove and downwardly-extending projecting spring-arms arranged with relation to the vertical grooves, and an inclosing capsule or cap-piece adapted to surround and inclose the reduced neck portion and having an interior annular groove at the bottom adapted to be engaged by said spring-arms, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 19th day of September, 1896.

JOHAN AUGUST PEARSON.

Witnesses:

NONT PRESLESCOK,
WILLIAM C. FROST.