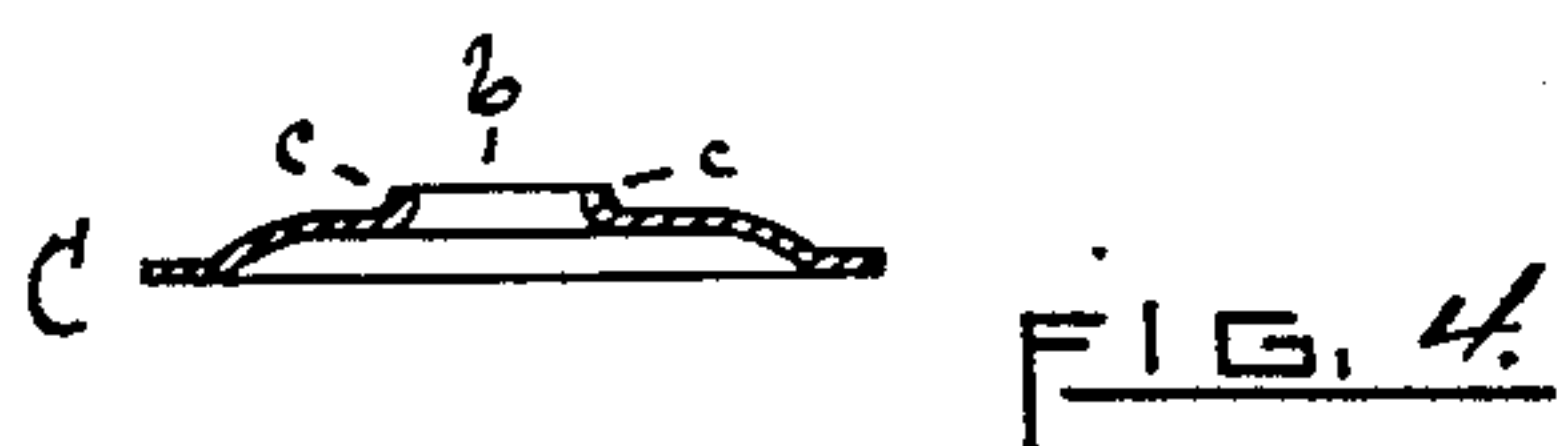
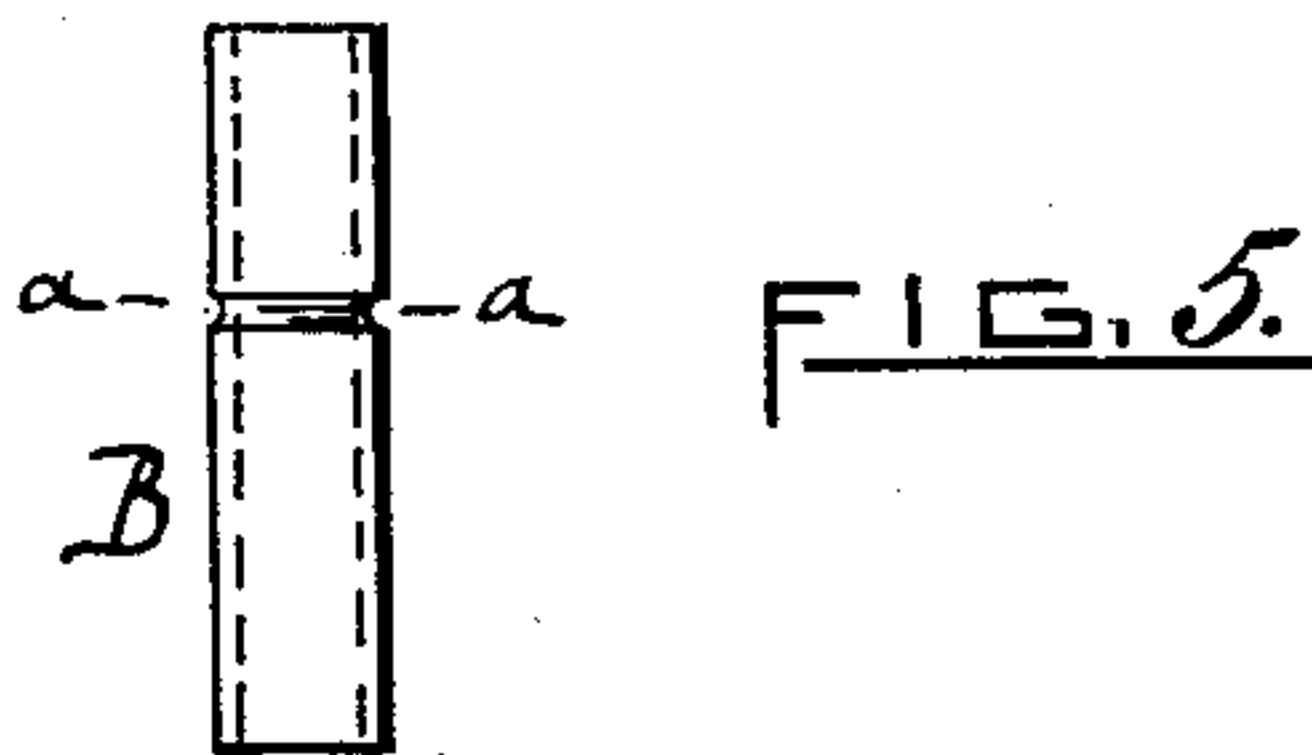
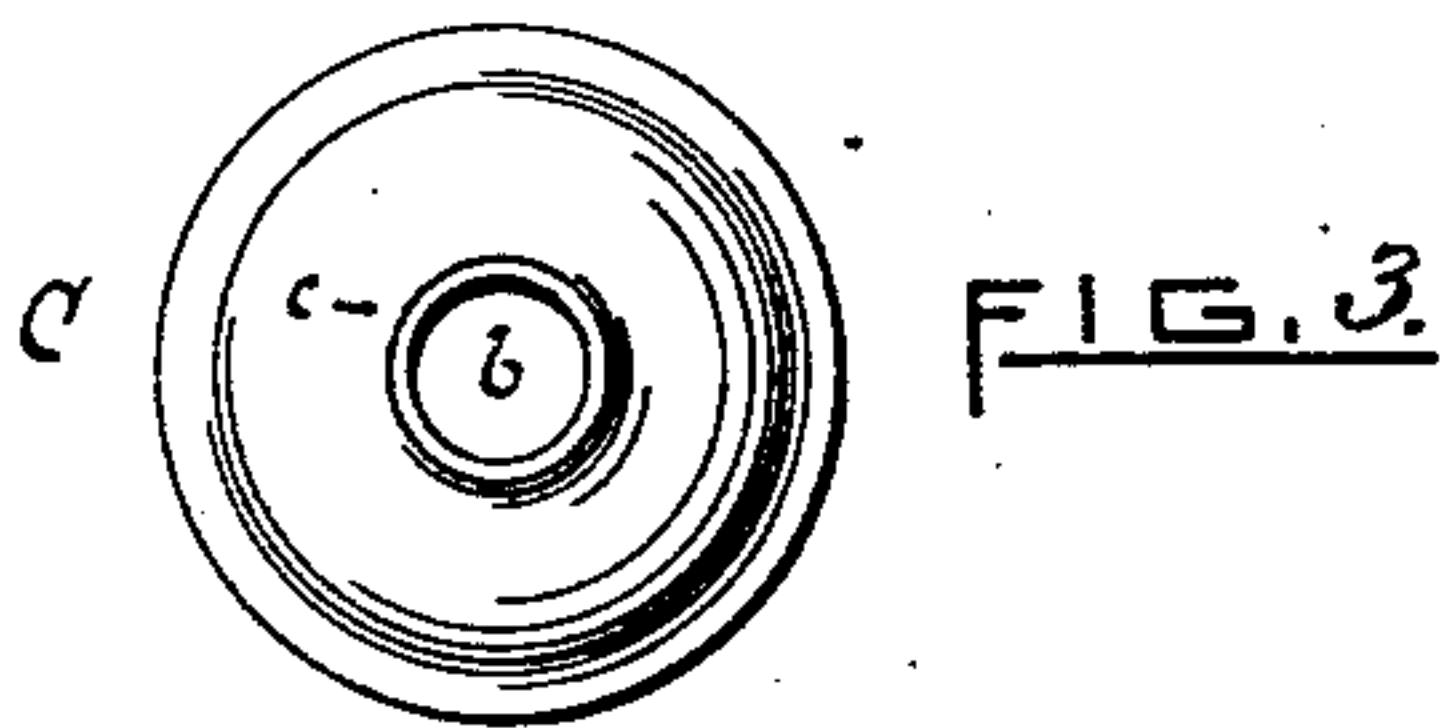
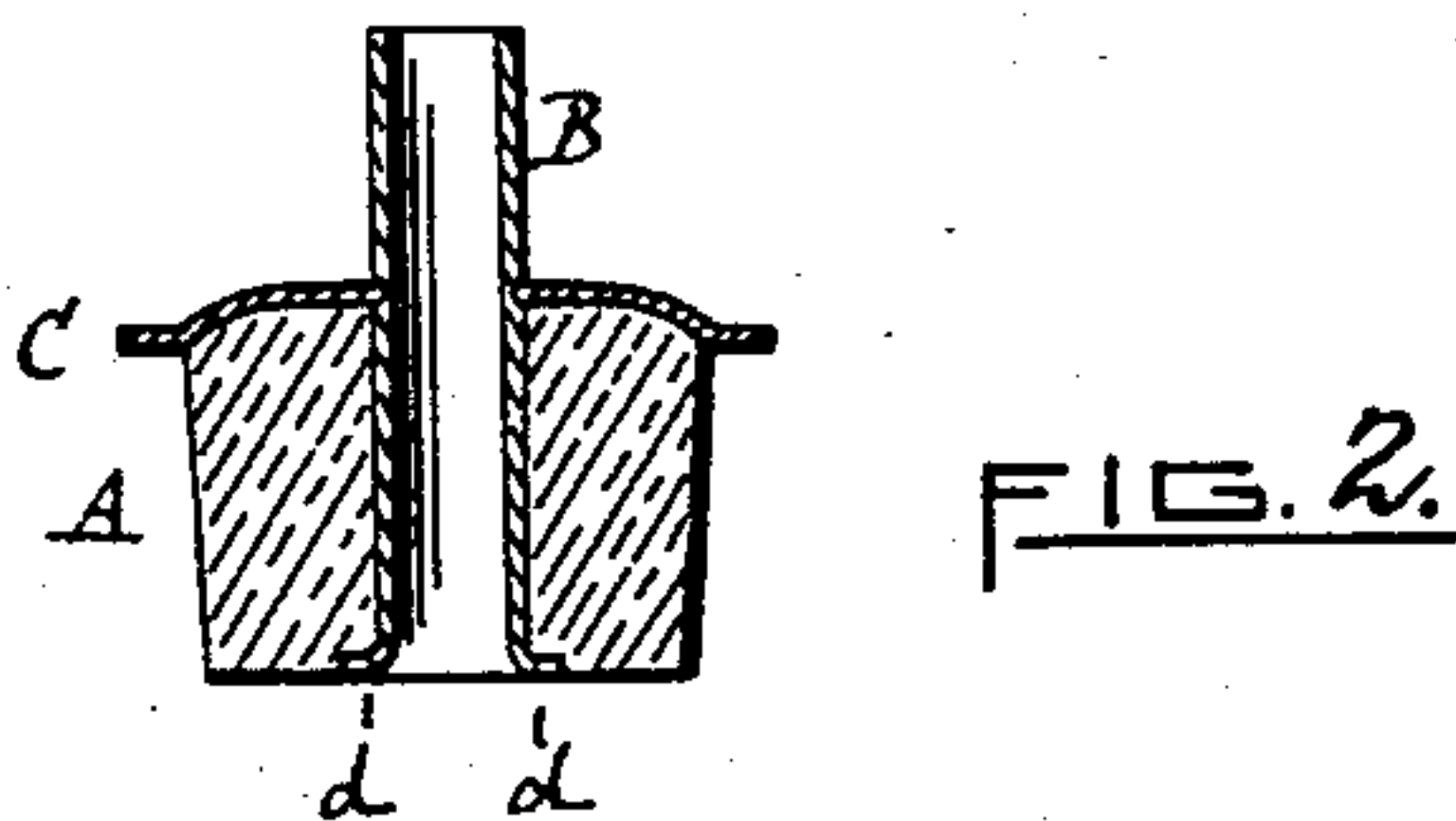
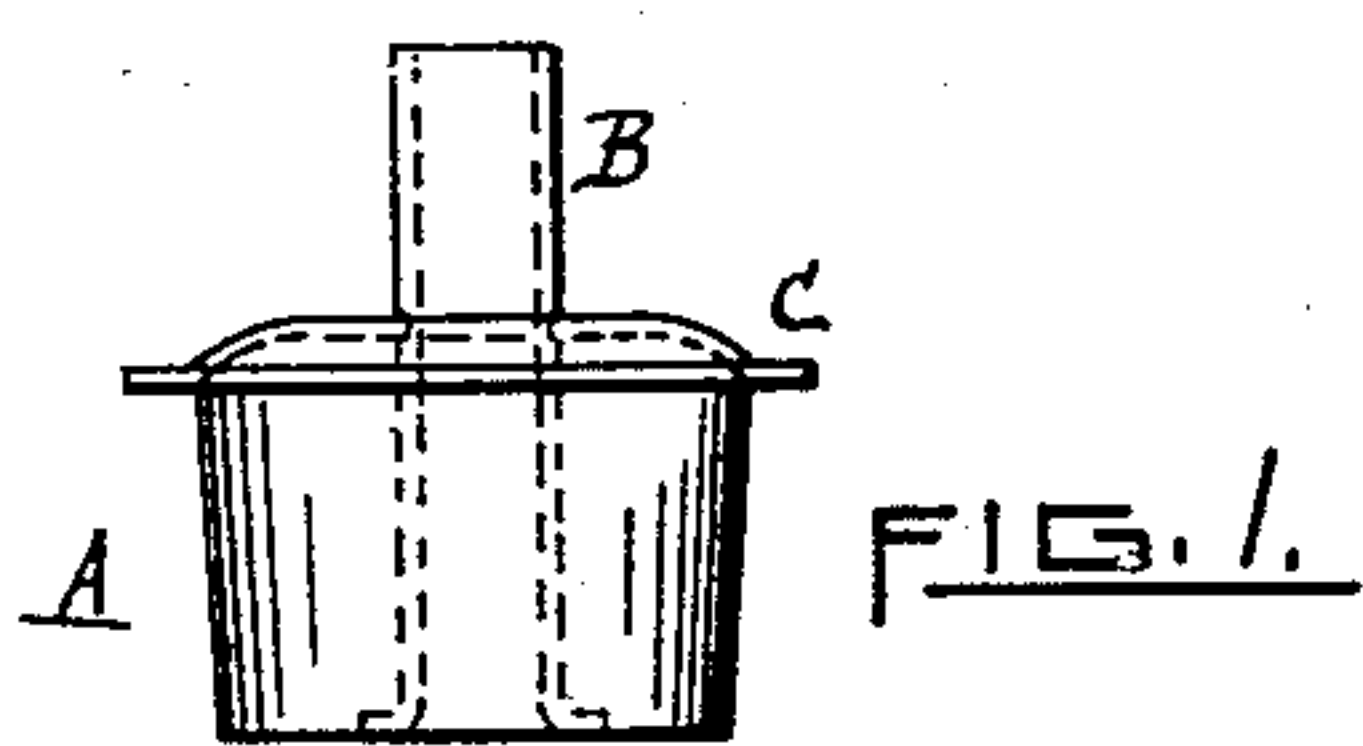


(No Model.)

A. G. SANFORD.
SPRINKLING DEVICE FOR STOPPLES.

No. 570,716.

Patented Nov. 3, 1896.



WITNESSES.

Charles T. Hamigan.
A. E. Perce.

INVENTOR.

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UNITED STATES PATENT OFFICE.

ALEXANDER G. SANFORD, OF WARREN, RHODE ISLAND.

SPRINKLING DEVICE FOR STOPPLES.

SPECIFICATION forming part of Letters Patent No. 570,716, dated November 3, 1896.

Application filed February 19, 1896. Serial No. 579,814. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER G. SANFORD, of the town of Warren, in the county of Bristol, in the State of Rhode Island, have
5 invented a certain new and useful Improvement in Sprinkling Devices for Stopples; and I declare the following to be a specification thereof, reference being had to the accompanying drawings.

10 Like letters indicate like parts.

Figure 1 is a side elevation of my invention. Fig. 2 is a diametrical vertical section of the same. Fig. 3 is a top plan view of the cap-piece. Fig. 4 is a diametrical section of
15 the same. Fig. 5 is a side elevation of the tube.

My invention relates to that class of stopples for bottles which is provided with a sprinkling-tube adapted to discharge the contents of the bottle, whether liquid or in powder.
20

It consists of the combination, with a centrally-perforated stopple, of a tube inserted in the central perforation and upset at its inner end to secure it to the stopple and provided with a centrally-perforated cap-piece, which is held in place upon the tube by swaging, as hereinafter particularly specified.

30 In the drawings, A is the stopple, preferably of cork, and made with a central longitudinal perforation.

B is a metallic tube which is circumferentially grooved, as shown at *a*, at or near the center of the length of said tube. The groove
35 *a* may be made in the tube in any desired manner, as by grooving it by a suitable cutting-tool while it is held in a lathe or by means of a burnisher depressing the metal circumferentially into the groove of a spindle upon which the tube is mounted in a lathe, which spindle, however, is of a much smaller diameter than the bore of the tube.
40

C is a circular convex cap-piece of metal made with a central aperture *b*, which is surrounded with an annular lip or flange *c*. (See Fig. 4.)
45

The tube B (shown in Fig. 5) is inserted in the central perforation of the stopple A, and the cap-piece C is placed on said tube with the annular lip or flange *c* surrounding the
50 tube loosely. By a die and plunger the tube and cap-piece are fastened together, as shown in Fig. 2. The annular lip or flange *c* of the cap-piece C is swaged into engagement with the tube B in the circumferential groove *a*
55 thereof, which it fills, thereby uniting the tube and cap-piece firmly together. It has been common heretofore to cast the metallic portion of such sprinklers in a single piece and to form and finish the same in a lathe.
60 This involves much expense and labor. My invention is especially adapted to aluminium, which is a very desirable material because it is not liable to oxidation or corrosion; but it is practically a difficult and costly operation
65 to solder two pieces of aluminium together. I dispense with solder entirely in my construction by swaging the lip *c* of the convex cap-piece C into the groove *a* of the tube B, thus firmly fastening the cap-piece on the
70 tube and at a trifling expense obtaining a stopple-sprinkler as rigid and useful as if first cast and then turned off true in a lathe.

The bottom of the tube is pressed or cupped up by a spindle in a lathe, and the stopper is
75 thus held in place between the cap-piece and the upset end of the tube.

I claim as a novel and useful invention and desire to secure by Letters Patent—

The combination of the stopple A having
80 the central perforation, a metallic tube inserted in said perforation and having the circumferential groove *a* and the centrally-perforated cap-piece C having the annular lip or flange *c*, which is adapted to be swaged into
85 engagement with said tube in the groove thereof, substantially as specified.

ALEXANDER G. SANFORD.

Witnesses:

LE ROY S. SANFORD,
EMILE BERAID.