

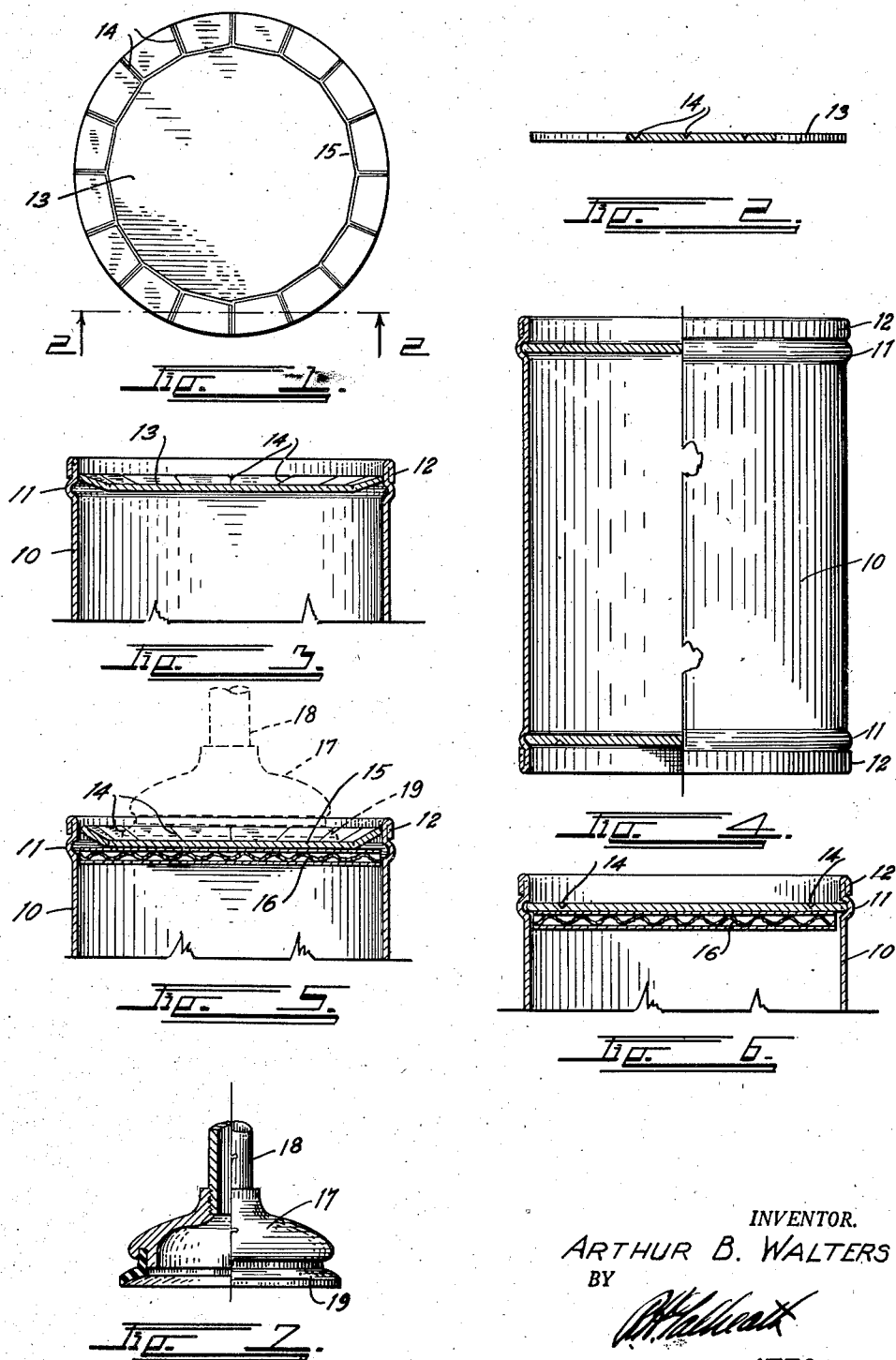
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A. B. WALTERS

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SEALING CAP FOR CONTAINERS

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INVENTOR.
ARTHUR B. WALTERS
BY

Arthur B. Walters

ATTORNEY.

UNITED STATES PATENT OFFICE

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SEALING CAP FOR CONTAINERS

Arthur B. Walters, Denver, Colo.

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1 Claim. (Cl. 229—5.5)

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This invention relates to a container, more particularly but not necessarily, a cylindrical cardboard container. The principal object of the invention is to provide a cylindrical container with a simple and highly efficient cap or closure which can be quickly and easily snapped into place, and which will securely hold and seal the contents in the container.

Another object of the invention is to provide an efficient means for placing cardboard caps of this type in cylindrical containers.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a face view of the cap employed in the improved container;

Fig. 2 is a section therethrough, taken on the line 2—2, Fig. 1;

Fig. 3 is a cross-section through the upper portion of the improved container, illustrating the cap partially inserted therein;

Fig. 4 is a side view of the improved container, partially in section, illustrating the top and bottom caps of the container in their final positions;

Fig. 5 is a cross-section through the upper portion of the container, illustrating an alternate form of the cap partially inserted therein;

Fig. 6 illustrates the alternate form of cap in place in the container; and

Fig. 7 is a side view, partially in section, of an inserting tool which may be employed either by hand or in a conventional capping machine for placing the caps in place in the containers.

The improved container is illustrated at 10, preferably formed of cardboard, fiber, or similar material. The container could, however, be formed of sheet metal if desired. As illustrated, both the top and bottom of the container employ the improved cap construction. If preferred, the bottom could be of any desired construction, and the improved cap employed only on the top.

As illustrated, the container 10 contains an internal, peripheral, indented groove 11 around its top and bottom, adjacent the open extremities thereof. Between the groove 11 and these extremities, the material of the container is turned back upon itself to form a reinforcing fold 12,

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which reinforces the open extremities of the container.

The improved cap is shown in detail in Figs. 1 and 2, and consists of a disc 13 of cardboard or similar material. The outer surface of the disc 13 is indented or scored by means of V-shaped scoring, there being a plurality of diametrically-extending scores 14 joined at their inner extremities by means of circumferentially-extending scores 15 so as to form a rim of segments separated by fold lines or scores.

The scores 14 and 15 render the outer edge of the disc flexible in one direction, that is, this outer edge can be bent toward the scored surface, causing the scores to contract to accommodate the bending. The cap 13 is of larger diameter than the inner diameter of the container 10, and of slightly larger diameter than the inner diameter of the groove 11.

In placing the cap 13 in the container, it is simply forced into the open end thereof with the scored surface outward, as shown in Fig. 3. This causes the annular edge portion of the cap to fold upwardly or outwardly until the groove 11 is reached, at which time the cap will straighten to its original flat position, as shown in Fig. 4. Since the disc is slightly larger than the internal diameter at the groove, the tendency of the disc to attain its flat shape causes it to expand and compress against the bottom of the groove 11 throughout its entire circumference to form a tight seal. The cap resists bending in the opposite direction, due to the fact it is scored on only one side so that it cannot be readily forced from its position in the container 10.

In Figs. 5 and 6 an alternate form of the end cap is illustrated, comprising a disc 15 which may be exactly similar to the disc 13. A second reinforcing disc 16 is cemented to the inner face of the disc 15, the cement being applied only within the outline of the segmental scored edge, so that the annular rim portion of the disc 13 is free to flex as usual. The reinforcing disc 16 may be of any material, such as corrugated cardboard, and is of a diameter to snugly slide into the container 10 without distortion.

The alternate form of cap is inserted similarly to the previously described form by forcing it into the open end of the container 10, allowing the rim portion of the disc 13 to bend outwardly, as shown in Fig. 5, until the groove 11 is reached, at which time it will flatten against the disc 16, as shown in Fig. 6, to form a positive, rigid seal.

It is exceedingly difficult to force the alternate form of the cap outwardly, due to the fact that

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the reinforcing disc 16 prevents the edge portion of the disc 15 from flexing inwardly.

An inserting device for placing the caps in position is illustrated in Fig. 7, and comprises a conical, hollow shell portion 17 mounted on the extremity of a vacuum pipe 18. The lower periphery of the shell 17 carries a flexible sealing gasket 19 of rubber or similar material. The diameters of the shell and gasket are slightly less than the diameter within the scores of the disc. The inserting tool is placed against the cap to be inserted, and the cap is forced inwardly therewith, as shown in broken line in Fig. 5. The tool may be employed by hand or mounted in a capping machine. In either case, the tube 18 is preferably connected to a source of vacuum so that, if the caps are forced too far into the containers, they may be withdrawn to their proper sealing point.

As before stated, the container may be formed of any suitable material. This is also true of the discs 13, 15, and 16, any or all of which may be formed from cardboard, corrugated board, fiber, plastic, or metal, if desired.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claim, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

Means for closing the open end of a container of the type having an outwardly indented circum-

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ferential groove positioned parallel to the open end, comprising: a capping disc of slightly larger diameter than the internal diameter of said container; a plurality of radially-extending indented scores in the outer surface of said disc extending inwardly from the periphery thereof for a relatively short distance; tangentially-extending scores connecting the inner extremities of the radially-extending scores, said scores allowing flexing of the edge of said disc to permit insertion thereof into said container to reach said groove, the periphery of said disc resting in said groove; and a second unscored disc secured at its middle to the inner face of the first disc, said disc being substantially equal in diameter to the inner diameter of said container, and lying against the first disc over the entire surface of the second disc to prevent inward flexing of the edges of the first disc.

ARTHUR B. WALTERS.

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