May 7, 1940. A. T. ANTONSON 2,199,732

STOPPER FOR THERMOS BOTTLE

Filed March 1, 1939

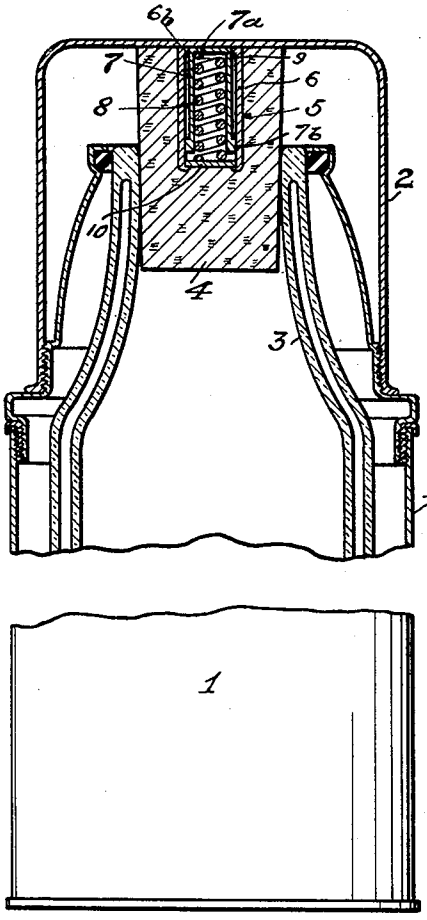


Fig. 1

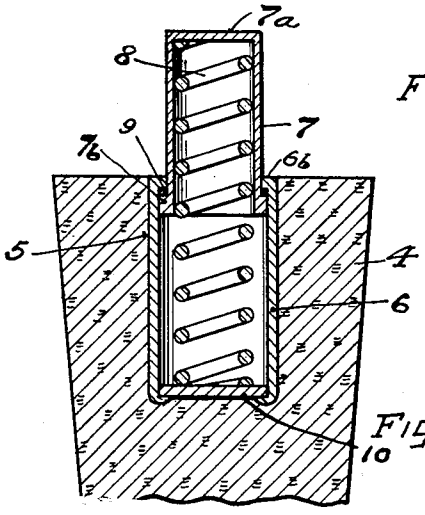
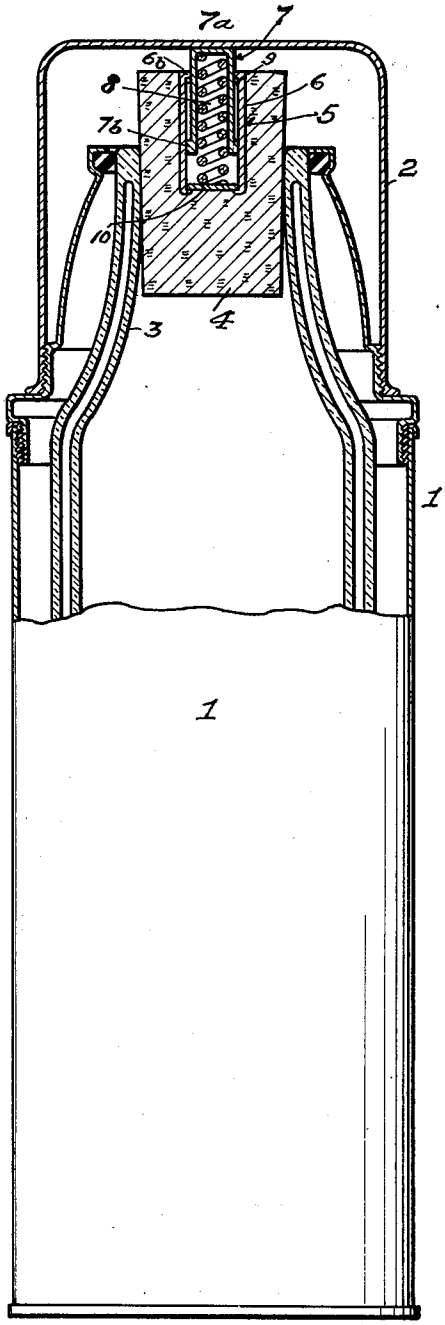


Fig. 2

Fig. 3



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STOPPER FOR THERMOS BOTTLES

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Application March 1, 1939, Serial No. 259,225

1 Claim. (Cl. 215—47)

My invention relates to an improvement in a stopper for Thermos bottles, shown in the accompanying drawing and more particularly described in the following specification and claims.

An object of the present invention is to provide means adapted to securely maintain the stopper in sealing contact with the discharge neck of the bottle, until it is manually released.

The usual stopper for Thermos bottles is a cork of suitable size lodged in the neck of the bottle, and bearing at its upper end against the inner face of the customary cover-cup when screwed upon the outer conventional metallic protecting casing of the bottle.

The continual usage of the cork, and the manual pressure applied to force the latter into the neck of the bottle, or in removing the same, causes in time a gradual shifting of the upper end of the cork out of contact with the inner face of the conventional cover-cup, screwed upon the customary outer metallic protecting casing.

The adjustment of the cover-cup upon the upper end of the metallic casing being limited, the cup cannot long contact the upper end of the cork to secure the latter against dislodgment, and therefore the cork soon becomes loose and a leakage of the contents of the bottle results.

In carrying the primary object of this invention into effect, a pair of resilient telescoping sleeves are fitted within a longitudinal central bore extending into the cork from one end, one of the sleeves being fixed within the bore, the other sleeve being adapted under the urge of a spring to extend outwardly into contact with the inner face of the cover-cup.

Upon applying manual pressure to force the cork into the neck of the bottle, the projecting sleeve is forced inwardly into the fixed sleeve in the body of the cork; the surrounding wall of the cork insuring the parts against dislodgment or injury due to rough or careless handling.

While resilient means have been employed to maintain the stopper in the neck of a Thermos bottle, the construction has been such that the manual effort required to remove or insert the cork in the bottle has caused the unprotected exposed parts to break away from the cork, or become detached or displaced through careless handling which results in the device being useless, broken or inoperative.

Referring now to the drawing:

Figure 1 is a fragmentary vertical sectional view, partly in elevation, showing the closure cork lodged in the neck of a Thermos bottle, with the upper end of the cork bearing against the inner face of a conventional cover-cup, and a spring located between telescoping sleeves, lodged in a central bore formed in the cork.

Figure 2 is a similar view showing the cork in spaced relation to the inner face of the cup, as would occur when the cork is worn, or when forced further into the neck of the bottle, and out of contact with the inner face of the cup, thus releasing the movable resilient sleeve that it may bear against the inner face of the detachable cup to hold the cork in the bottle against accidental dislodgement.

Figure 3 is an enlarged fragmentary sectional view of the cork, showing the fixed portion of the telescoping sleeve lodged within the annular wall of the cork, the movable portion being extended to the limit of its outward movement.

Referring now to the reference numerals on the drawing—

Numeral 1, denotes the usual outer protecting sleeve of a Thermos bottle, and 2 is a detachable conventional cup, closing the end of the sleeve.

Numeral 3, indicates a Thermos bottle housed within said protecting sleeve.

Numeral 4, denotes a closure cork fitted to the neck of the Thermos bottle, having a central bore forming a socket 5, to receive a pair of telescoping sleeves 6 and 7, which are protected against accidental injury or dislodgment by the encircling wall of cork forming the socket to receive them. Numeral 8, indicates an expansion spring lodged within the sleeves and bearing at one end against a disc closing the lower end of the stationary sleeve 6, lodged in a socket formed in the cork; and at the other end against the closed end 7*a*, of the movable sleeve 7, to force said sleeve against the inner face of the detachable cup 2, to maintain the closure cork 4, in sealing relation with the neck of the Thermos bottle, when the cork becomes worn through use or can no longer be contacted by the inner wall of the detachable cup upon screwing the latter down on the upper end of the casing in which the Thermos bottle is supported, see Figure 2.

The movable sleeve 7, has an annular rim 7*b*, which upon contacting the inner flange 6*b*, of the sleeve 6, limits the outward thrust of the movable sleeve resulting from the urge of the expansion spring 8, within the sleeves.

Numeral 9, denotes a gasket or washer between the rim 7*b* and flange 6*b*.

Numeral 10, indicates a disc, forming a thrust plate for the spring 8, at the end of the sleeve 6,

the disc being secured in place by peening the wall of the sleeve to overlap the disc.

What I claim is:

The combination of a Thermos bottle including an outer protecting jacket and a removable closure cup fitted to and engaging the jacket, a closure cork fitted in the neck of the bottle and having a central bore extending from its upper end, a cylindrical open ended sleeve fitting within said bore and having an inwardly turned flange at its upper end, a second sleeve having a closed upper end inserted through the open lower end of the first mentioned sleeve and slidable therein and having its outer surface engaging the inwardly turned flange of the first mentioned sleeve, an outwardly extending flange carried by the lower end of the second mentioned sleeve and engaging the inner wall of the first mentioned sleeve and limited in its upward movement by the engagement of the flanges carried by the two sleeves, a coil spring inserted through the open lower end of the first mentioned sleeve and extending into the second mentioned sleeve, a disk in the lower end of the first mentioned sleeve and bearing against the lower end of the spring, and an inwardly turned flange carried by the lower end of the first mentioned sleeve for holding the disk in said sleeve.

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