

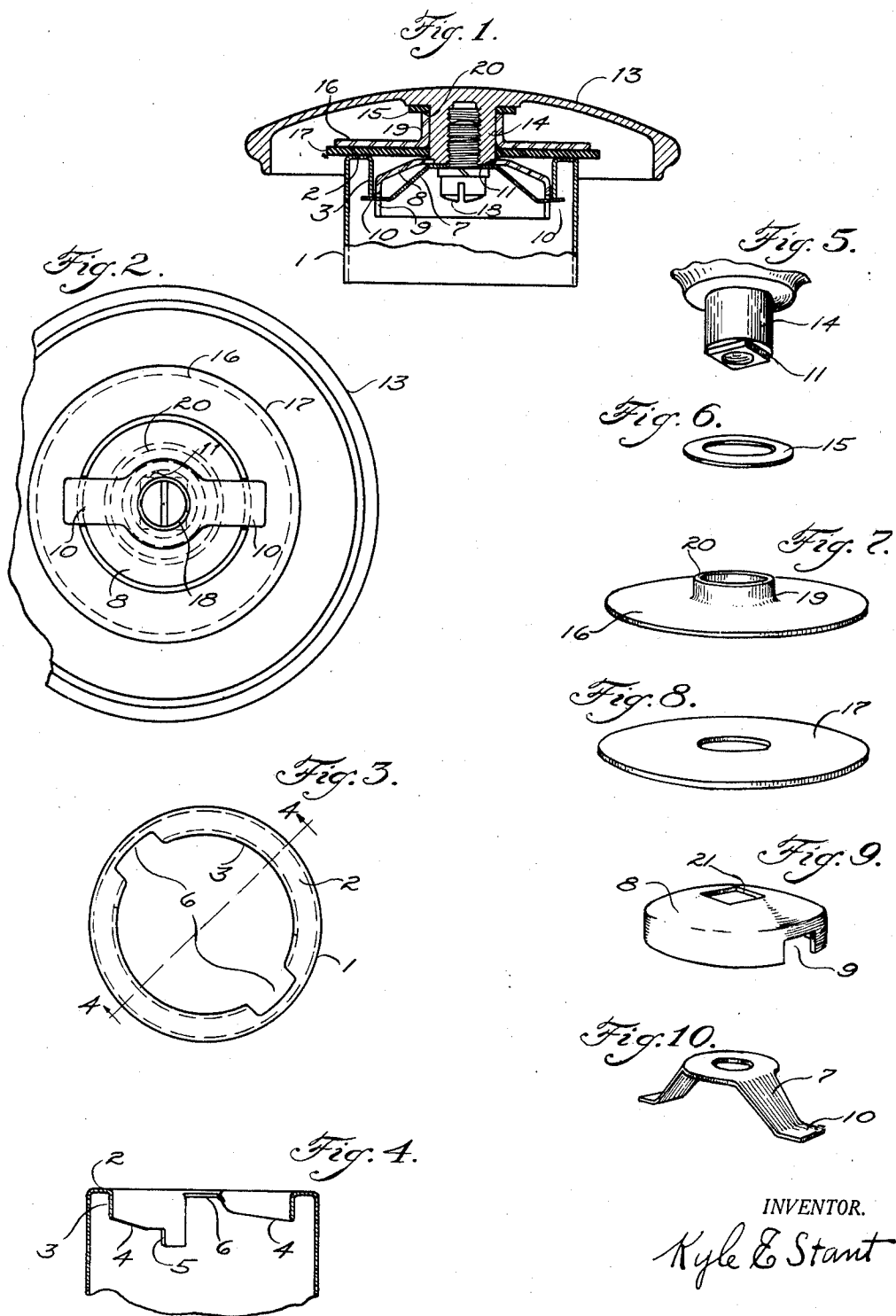
Aug. 22, 1933.

K. E. STANT

1,923,336

CLOSURE CAP

Filed May 11, 1931.



## UNITED STATES PATENT OFFICE

1,923,336

## CLOSURE CAP

Kyle E. Stant, Connersville, Ind.

Application May 11, 1931. Serial No. 536,419

8 Claims. (Cl. 220-40)

This invention relates to improvements in bayonet-joint closures of the type provided with opposed locking fingers for cooperation with opposed cam portions of the device having the opening to be closed and sealed.

The general object of the present invention is the provision of a closure of the type described which is of simple and inexpensive construction and highly efficient in use.

A further object of the invention is to provide a means whereby the sealing washer is maintained at a constant height in relation to the bottom edge of the cap and at the same time permit said sealing washer to rotate with the cap or to remain stationary in relation to the filler spout while the locking parts are rotated into locked position on the filler spout by the rotation of the cap. As can be readily seen this feature permits the use of cheaper gaskets and at the same time cause them to last much longer than common rubber or leather gaskets.

Further objects of the invention are in part obvious and in part will appear more in detail hereinafter.

Referring to the drawing which represents one suitable embodiment of the invention:

Fig. 1 is a vertical sectional view of my closure applied to the tubular neck portion of a tank or the like.

Fig. 2 is a bottom view of the closure.

Fig. 3 is a plan view of the tubular member of Fig. 1.

Fig. 4 is a vertical sectional view of the tubular member taken on the line 4-4 of Fig. 3.

Fig. 5 is a perspective view of the central boss member of the cap.

Fig. 6 is a perspective view of the sealing washer to seal the plate member of Fig. 7 to the central boss of Fig. 5.

Fig. 7 is a perspective view of the rigid plate member.

Fig. 8 is a perspective view of the sealing washer which seals the spout opening.

Fig. 9 is a perspective view of the driving and centering cup member.

Fig. 10 is a perspective view of the resilient locking member.

As disclosed in the accompanying drawing, 1 denotes a tubular member provided at its upper end with the inwardly extending peripheral flange portions 2 and the downwardly extending locking lips, 3 the last named lip portions being separated by the openings 6. The lower edges of the flanges 3 are inclined so as to form cam edges 4, and are provided with the lugs 5 to serve as

stops for limiting the rotary movement of the closure thereupon. The closure proper is composed of the ornamental or operating portion 13 having on the interior and substantially the central part thereof a boss portion 14, the end of the boss 14 is formed into a plurality of shoulders of graduated diameters and a square shoulder 11. On one of the shoulders of the boss 14, are mounted the rigid circular plate 16 having a turned up sleeve 19 located centrally thereof for centering and guiding the plate 16 on the boss and for engaging the sealing washer 15 as shown at 20, and the other sealing washer 17 which is adapted to be pressed against the spout flange 2 by the plate 16. Mounted on the square shoulder 11 is a cup shaped member 8 having in the top portion thereof the square hole 21 for driving said cup by said shoulder 11 and also having in the side walls thereof openings 9 for receiving loosely the finger portions 10 of the resilient locking member 7. Passing through and clamping the parts 7 and 8 to the boss 14 is a screw 18 which is threaded into the boss 14.

The closure is detachably secured to the spout by passing the finger portions 10 down through the openings 6 of the spout and then imparting clockwise rotary movement to the closure so as to cause said finger portions 10 to ride down the cam edges 4 until they reach the stops 5. The movement of the finger portions along the cam edges causes the sealing washer 17 and the rigid plate 16 to be drawn down tightly against the spout flanges 2. The force by which the plate 16 presses the washer 17 against the spout flange is generated by the resilient member 7 when it is sprung by the passage of the fingers 10 along the cams, and this force is directly equal to that tension generated in the resilient member 7.

At the moment the washer 17 touches the spout at 2 it becomes stationary in relation to the spout and further rotation of the cap 13 turns only the cup member 8 and the resilient locking member 7.

It is very obvious from the foregoing description that this closure will efficiently close and seal a tank opening carrying a filler neck as described and further will assure long life to the sealing washers by reason of the rotation of the rigid plate member carrying the sealing washer.

It is evident that the above described construction is capable of being modified in various ways and while I have shown and described this particular form I do not wish to be limited in the construction of the same further than is re-

quired by the state of the art or that which comes within the appended claims.

What I claim is:

1. In a closure for receptacles, a cap, a boss depending therefrom, an inherently rigid plate mounted rotatably thereon having means adjacent its central portion adapted to cooperate with the boss to prevent lateral movement of the plate in relation to the axis of said cap and to retain said plate in a constantly spaced position relative to the cap during rotation of said plate with respect to said cap, and a resilient locking member adjacent the end of said boss.

2. In a closure for receptacles, a cap, a boss depending therefrom, an inherently rigid plate mounted rotatably thereon having means adjacent its central portion adapted to cooperate with the boss to prevent lateral and longitudinal movement of the plate in relation to said cap and to retain said plate in spaced relation to the cap, a sealing washer between said plate and said boss, a locking member having resilient fingers extending laterally therefrom mounted on said boss and a sealing washer between said locking member and the plate.

3. In a closure for receptacles, in combination, a filler spout having an inwardly turned peripheral lip with rigid locking members thereon, a cap, a boss depending therefrom, an inherently rigid plate member mounted rotatably thereon having means adjacent its central portion adapted to cooperate with the boss to prevent lateral movement of the plate in relation to said cap and to retain said plate in spaced relation to the cap, said plate extending adjacent to the peripheral lip of the spout, and a resilient locking member mounted non-rotatably of the cap for engagement with the locking members on the filler spout.

4. In a closure for receptacles, in combination, a filler spout having an inwardly turned peripheral lip with rigid locking members thereon, a cap, a boss depending therefrom, an inherently rigid plate member mounted rotatably thereon having means adjacent its central portion adapted to cooperate with the boss to prevent lateral movement of the plate in relation to said cap and to retain said plate in spaced relation to the cap, said plate extending adjacent to the peripheral lip of the spout, a sealing washer between the rigid plate member and the boss, and a resilient locking member mounted non-rotatably of the cap thereof for engagement with the locking members on the filler spout.

5. In a closure for receptacles, in combination, a filler spout having a peripheral lip with spaced

flanges thereon, a cap, a depending boss thereon, an inherently rigid plate member mounted rotatably on said boss and extending adjacent the peripheral lip of the spout, said plate member having at its central portion a sleeve extending axially therefrom, said sleeve adapted to telescope the depending boss, a sealing washer mounted between said plate member and said peripheral lip, a resilient locking member mounted non-rotatably of said cap for engagement with the said spaced flanges and means adjacent the end of the boss for retaining the resilient locking member thereon.

6. In a closure for receptacles, in combination, a filler spout having an inwardly turned peripheral lip with rigid locking members thereon, a cap, a depending boss on the interior thereof, an inherently rigid plate member mounted rotatably at its central portion on said boss and extending adjacent the peripheral lip of the spout, cooperating means in the plate and boss to retain the periphery of the plate in a constantly spaced position relative to the cap, a locking means on said boss comprising an inverted cup having slots in the side walls thereof attached rigidly to the boss, and a afflexible spring having a central portion abutting said boss and radially extending flexible arms extending through the slots of said cup member to engage the locking members on the filler spout.

7. In a closure for receptacles, in combination, a filler spout having a peripheral lip with spaced flanges thereon, a cap, a depending boss thereon, an inherently rigid plate member mounted rotatably on said boss and extending adjacent the peripheral lip of the spout, said plate member having at its central portion a sleeve extending axially therefrom, said sleeve adapted to telescope the depending boss, a sealing washer mounted between said plate member and said peripheral lip, an inherently resilient locking member mounted non-rotatably on said boss for engagement with the said spaced flanges and means adjacent the end of the boss for retaining the resilient locking member thereon.

8. In a closure for receptacles, a filler spout having spaced flanges thereon, a cap, a boss depending therefrom, a rigid cover plate for said spout, said plate mounted on said boss and having means adjacent its central portion adapted to cooperate with the boss to retain said plate in a constantly spaced position relative to the cap during rotation of said cap, and a yielding locking member carried by said boss for engaging said flanges.

KYLE E. STANT. 130

40

135

65

140

70

145

75

150