

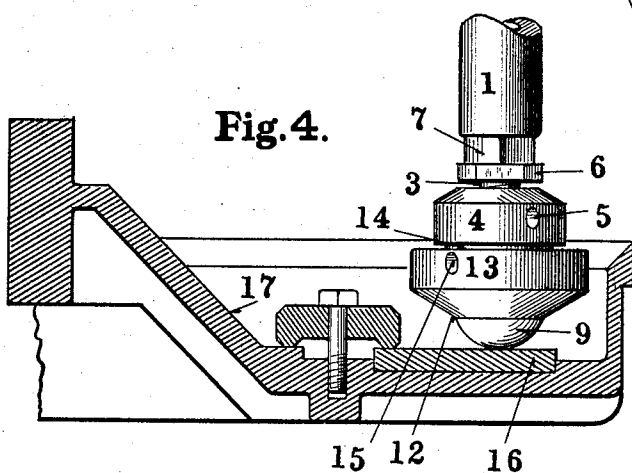
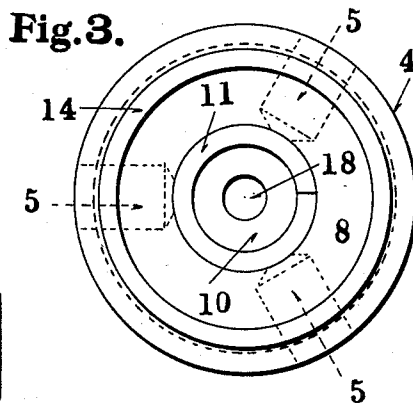
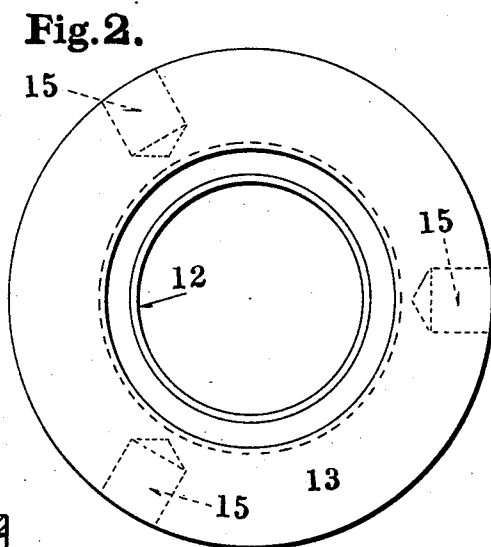
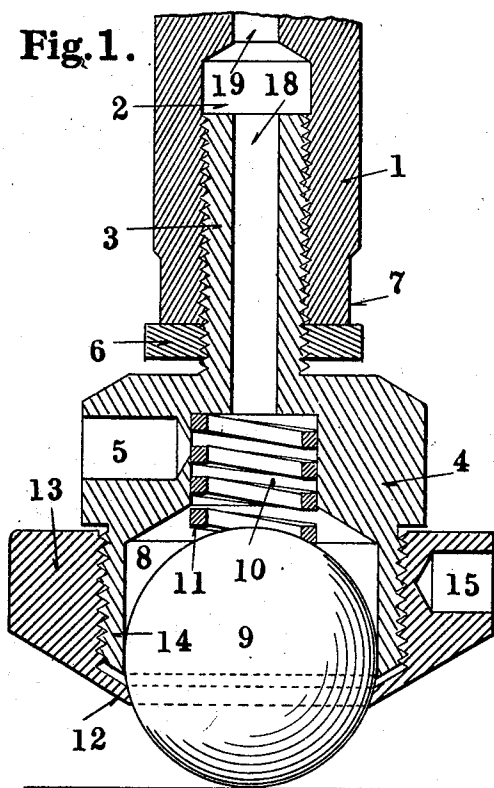
Feb. 25, 1930.

C. T. SMALL

1,748,086

BALL PLUNGER SUPPORT

Filed Jan. 25, 1928



Inventor  
C. T. Small

By *E. S. Huffman*  
Att'y.

## UNITED STATES PATENT OFFICE

CHESLEY T. SMALL, OF ST. LOUIS, MISSOURI

## BALL PLUNGER SUPPORT

Application filed January 25, 1928. Serial No. 249,386.

My invention relates to a ball plunger support and is specifically adapted for use with the plungers of a can filling or capping machine in which the plungers run on a track by means of which they are raised to present the cans supported thereon to the operating mechanism of the machine. One form of machine with which my support is adapted to be used is that shown in application Serial No. 88,765, filed by me February 17, 1926.

In the accompanying drawings, which illustrate one form of ball plunger support made in accordance with my invention, Figure 1 is a vertical section; Figure 2 is a top plan view of the detached cap nut; Figure 3 is a bottom plan view of the ball socket; and Figure 4 is a view on a reduced scale, partly in elevation and partly in section, showing the support in position on its operating track.

The plunger 1 is provided with an internally threaded bore 2 at its lower end to receive the threaded stems 3 of a ball socket 4. Formed in the periphery of the ball socket are holes 5 which may be engaged by a wrench bar or spanner to rotate the socket and thus accurately adjust it vertically with relation to the plunger. The socket is held in position after adjustment by a lock nut 6 on its stem, and the lower end of the plunger is preferably provided with a hexagonal portion 7 to be engaged by a wrench when the lock nut is tightened to prevent torsional strain. Formed in the socket 4 is a ball chamber 8 of a diameter to receive the supporting ball 9 and of sufficient depth to allow substantial vertical movement of the ball. Situated in an extension 10 of the chamber 8 is a coil spring 11 bearing on the top of the ball 9 and normally holding it against a retaining lip 12 on the cap nut 13. This nut is threaded on a reduced portion 14 of the socket 4 and has holes 15 in its periphery for engagement with a wrench bar or spanner for screwing it into position.

In Figure 4 the support is shown as bearing on a track 16 secured in an oil pan 17 like that shown in my prior application above referred to. The stem 3 is also provided with a central passage 18 and the plunger with a similar passage 19 for the reception of a wick

to convey oil from the pan to the plunger bearing, as described in my said prior application.

My construction not only provides a simple and strong support in which a defective ball may be readily replaced but the use of the spring to hold the ball against its seat is highly advantageous to the action of the device. It not only supports the ball in such a manner that it is not liable to become jammed in the socket, but provides a cushioning effect to lessen shocks and to compensate for variation in the height of the can operated upon.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a device of the class described, the combination with a plunger, of a ball socket provided with a spindle threaded into said plunger, a lock nut for holding the spindle in adjusted position, a ball in said socket, a spring interposed between said socket and ball, and a cap nut threaded on said socket for holding the ball in position.

2. In a device of the class described, the combination with a plunger provided at its lower end with an internally threaded bore, of a spindle having threaded engagement with said bore, a lock nut on said spindle, an enlarged head on said spindle provided with a ball chamber having an extension forming a spring seat, a ball in said chamber, a spring in said extension between said seat and ball, and a threaded cap on said head engaging the ball to hold it in the chamber.

In testimony whereof, I hereunto affix my signature, this 21st day of January, 1928.

CHESLEY T. SMALL.