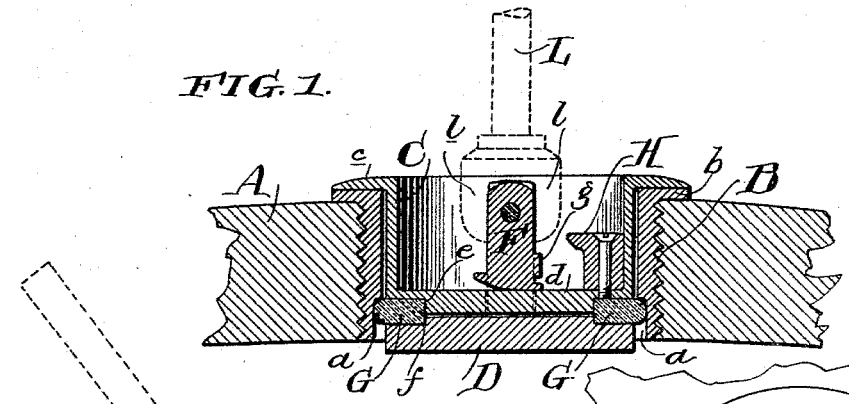
(No Model.)

T. MARPLE.

BUNG.

No. 490,153. Patented Jan. 17, 1893.

FIG. 1.



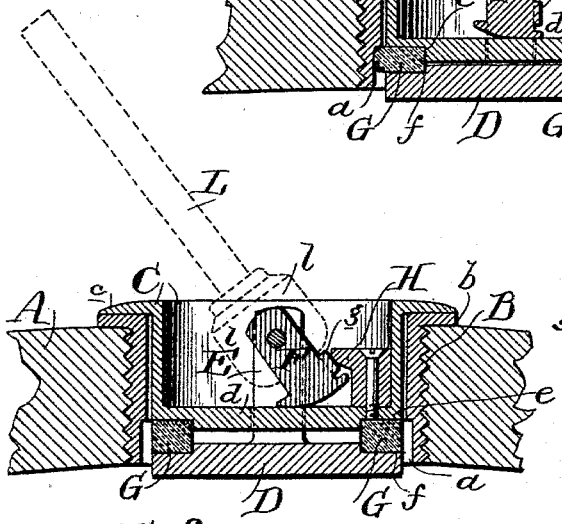


FIG. 3.

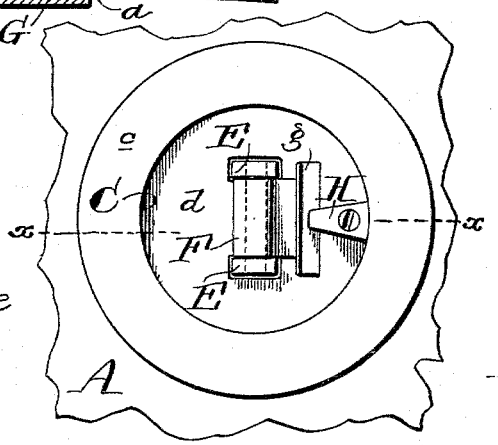


FIG. 2.

WITNESSES:
Henry Dorsey
S. T. Yerkes.

INVENTOR:
Thomas Marple,
By his attorney,
S. T. Yerkes.

UNITED STATES PATENT OFFICE.

THOMAS MARPLE, OF PHILADELPHIA, PENNSYLVANIA.

BUNG.

SPECIFICATION forming part of Letters Patent No. 490,153, dated January 17, 1893.

Application filed August 25, 1892. Serial No. 444,037. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MARPLE, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Bungs, of which the following is a specification.

My invention relates to bungs for barrels, and consists of certain improvements which are fully set forth in the following specification and are shown in the accompanying drawings which form a part thereof.

It is the object of my invention to produce an efficient and economical metal bung suitable for use in beer barrels &c.

The use of wooden bungs is objectionable, because of the great inconvenience and difficulty met in removing bungs from empty barrels and because the bungs when so removed are not available for further use. In many cases the bung passes into the barrel and must then be broken and picked out. This consumes much time and labor, and necessitates the passage of a light into the barrel so that the bung may be visible, often resulting in serious injury to the inner lining of the barrel. Metal bungs may be used indefinitely and may be removed and replaced without injuring them. It is essential that such bungs may be easily applied to the barrel and removed from it while being securely held in the bung hole when fastened; that they shall be simple in construction and not liable to become out of order, and that they shall form a perfectly air and liquid tight closure of the bung hole. My improved bung is designed to accomplish these objects.

In the drawings: Figure 1 is a vertical sectional view of my improved bung showing the same closed and locked in its bushing; Fig. 2 is a plan view of the same showing the bung unlocked; Fig. 3 is a vertical sectional view of the same on the line *x*—*x* of Fig. 2.

A is the barrel.

B is a metal bushing which may be screwed into the bung hole of the barrel. The bushing B may be provided with the flange *b* upon its upper rim, which is adapted to rest upon the upper surface of the barrel. The inner surface of bushing preferably adjacent to the lower rim, is offset or enlarged in diameter so as to form an annular seat *a*.

C is a cup shaped piece fitting loosely within the bushing B but of less depth. The cup shaped piece C may be provided with an annular flange *c* upon its upper edge adapted to rest upon the flange *b* of the bushing.

D is a plate located below the flat surface or bottom *d* of the cup shaped piece C and movable to and from it. The plate D is of substantially the same diameter as the piece. This plate D is provided with arms or projections E which extend up through the bottom *d* of the piece C and carry a cam F by which the plate D may be drawn toward the under surface of the bottom *d*.

G is a rubber ring carried between the lower surface of the piece C and the plate D and located adjacent to the annular seat *a* in the bushing, and adapted when the plate D is drawn toward the piece C to be compressed and forced into the seat *a* to form an air tight packing.

The lower surface of the piece C and the upper face of the plate D may each be provided with annular seats *e* and *f* respectively, located adjacent to their edges, to receive and hold the ring of rubber G. By this means the inner edge of the rubber ring is held against expansion by the shoulder of the seats *e* and *f*, and the entire lateral expansion due to the vertical compression of the rubber ring must take place outwardly unto the seat *a* of the bushing. By this means a very tight joint is obtained. When the plate D is loose or unlocked as is shown in Fig. 3 the rubber ring G should not project materially beyond the outer annular surface of the piece C, so that it will not be any obstruction to the free movement of the bung in the bushing, where it is being inserted or removed.

The cam device for clamping the movable plate D may be varied without departing from the invention.

The plate D is provided with two projecting arms E which extend up through holes in the bottom *d* of the piece C and carry a cam lever F swinging vertically between the arms E and adapted to press upon the upper surface of the bottom *d* and thus draw up the plate D toward the piece C and compress the rubber ring G. This is shown in Fig. 1. When the cam lever F is turned away from contact with the face *d* the plate D is loosened and the rubber G contracts laterally and

moves from the seat *a*. The cam E may be provided with a stop *g* to prevent it being turned through the arms E E.

A stop H may be employed located within the cup shaped piece C to form a stop for the cam piece F and prevent it being turned unnecessarily far when its cam face is moved from contact with the surface *d* to loosen the plate D.

The cam lever F may be operated by a key L, shown in dotted lines, provided with jaws *l*.

A great advantage of this construction is that the bung may be easily removed from the bushing or inserted therein, as there are no projecting parts upon the outside of the bung or upon the inner annular face of the bushing.

Instead of rubber the ring G may be made of any other suitable compressible material.

The minor details of construction which have been shown may be varied without departing from the invention.

What I claim as new and desire to secure by Letters Patent, is:—

1. The combination of a bushing having its internal surface unobstructed throughout its entire depth by any projecting parts and provided with an internal annular seat of enlarged diameter and small vertical depth adjacent to the lower edge of the bushing, a cup shaped piece loosely fitting within the bushing and supported thereby at the top, a plate located below the base of the cup shaped piece provided with an upright extension projecting through the base of the cup shaped piece, a vertically swinging cam carried by said upright extension within the cup shaped piece and adapted to bear against the inner surface of the base of said piece, and an annular elastic ring located between the adjacent edges of the base of the cup shaped piece and the plate below it and adjacent to the annular enlarged seat in the bushing.

2. The combination of a bushing having its inner surface provided with an annular seat of enlarged diameter, a cup shaped piece loosely fitting the bushing and supported thereby at the top, a plate located below the base of the cup shaped piece and provided with an upwardly extending projection extending through the base of the cup shaped piece, a vertically swinging cam carried by said projection and bearing against the inner surface of the base of the cup shaped piece, an annular elastic ring located between the adjacent edges of the base of the cup shaped piece and the plate below it, and a stop located upon the interior of the cup shaped piece in the path of the upward movement of the cam.

3. The combination of a bushing having its inner surface provided with an annular seat of enlarged diameter, a cup shaped piece loosely fitting the bushing and supported thereby at the top, a plate located below the base of the cup shaped piece, and provided with an upwardly extending projection extending through the base of the cup shaped piece, a vertically swinging cam carried by said projection and bearing against the inner surface of the base of the cup shaped piece, and an annular elastic ring located between the adjacent edges of the base of the cup shaped piece and the plate below it, the extreme upper edge of the upwardly extending projection and the cam carried by it being at all times below the upper rim of the cup shaped piece.

4. The combination of a bushing having its inner surface provided with an annular seat of enlarged diameter, a cup shaped piece loosely fitting the bushing and supported thereby at the top and provided at its lower edge with an annular angular seat, a plate located below the base of the cup shaped piece and provided with an upwardly extending projection extending through the base of the cup shaped piece, a vertically swinging cam carried by said projection and bearing against the inner surface of the base of the cup shaped piece, and an annular elastic ring located between the adjacent edges of the base of the cup shaped piece and the plate below it, and having an angular edge fitting within the annular angular seat on the lower edge of the cup shaped piece.

In testimony of which invention I have hereunto set my hand.

THOS. MARPLE.

Witnesses:

GEO. B. LAUER,

ERNEST HOWARD HUNTER.