F. TUCHFARBER.
Bung.

No. 222,164. Patented Dec. 2, 1879.

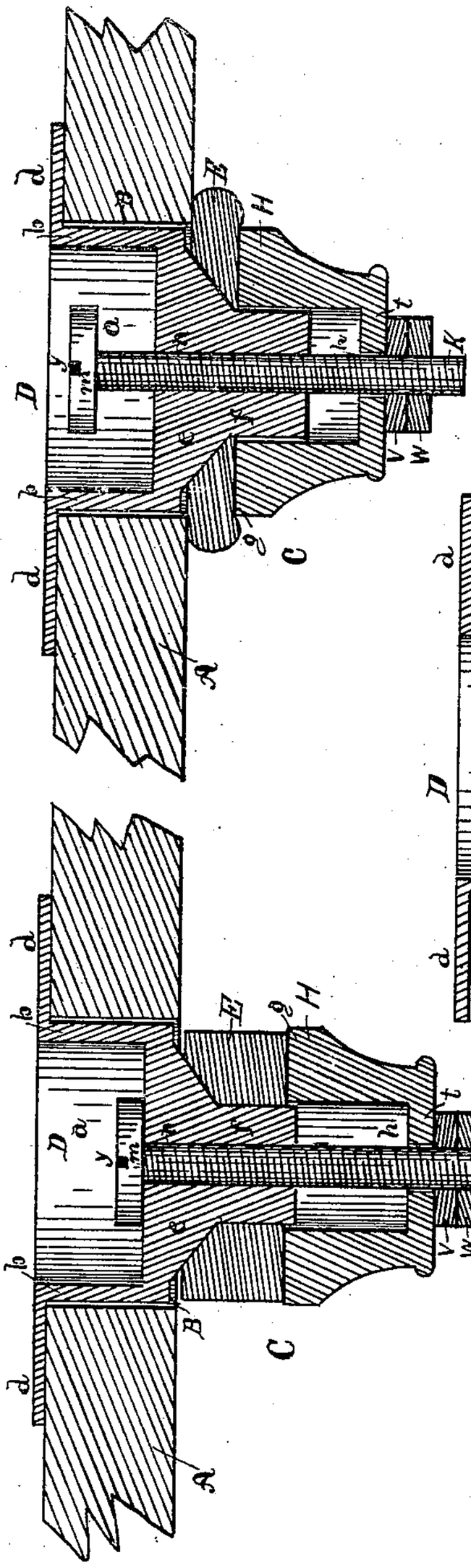

Fig. 2.

Fig. 1.

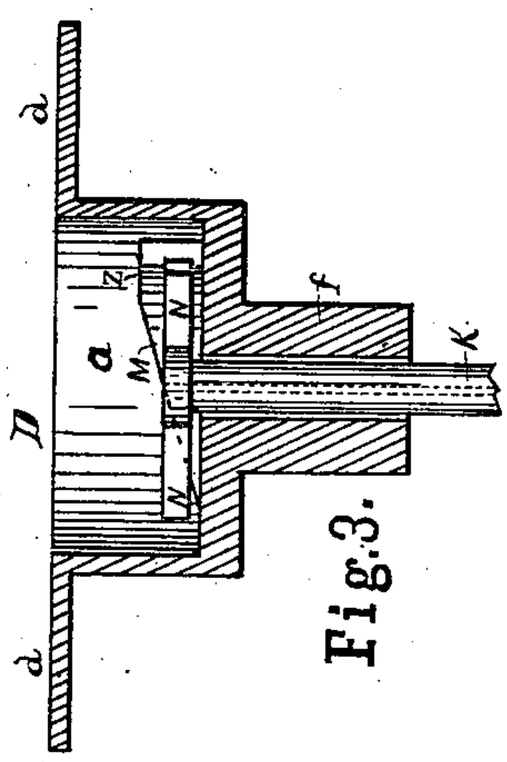

Fig. 3.

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UNITED STATES PATENT OFFICE.

FRANK TUCHFARBER, OF CINCINNATI, OHIO.

IMPROVEMENT IN BUNGS.

Specification forming part of Letters Patent No. **222,164**, dated December 2, 1879; application filed July 15, 1879.

To all whom it may concern:

Be it known that I, FRANK TUCHFARBER, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Bungs, of which the following is a specification.

The more prominent feature of my invention consists in an elastic substance applied by appropriate devices to the interior of the stave at the bottom of the bung-hole in such a manner as to completely close the bung-hole.

The other features of my invention, and which will be apparent from a subsequent description thereof, consist of devices for successfully carrying into effect the first portion of my invention.

My invention provides a bung which can be easily and quickly removed from the bung-hole of the barrel, keg, cask, &c., to which it is applied, and as quickly replaced in the said hole, and caused to close the latter.

Among the many advantages derived from the use of my invention are the following, viz: The bung is permanent and durable, and capable of use for many years, and will outlast the barrel, &c., to which it is first applied, and can then be employed with a second one, and so on. The bung is applicable to the ordinary bung-hole just as it is—that is, the surface of the bung-hole or the stave containing it does not require to be worked over or altered before inserting the bung. Any outward pressure of liquid or gas within the barrel, &c., tends only to tighten the bung and render it more impervious. The bung is strong, simple, and cheap of construction, and not liable to get out of repair.

In the accompanying drawings, the figures are vertical central sections of a bung embodying my invention, Figure 1 showing the bung as it is when first inserted, and Fig. 2 showing the same when the bung has been operated and the bung-hole closed; and Fig. 3 showing a modification of the devices for compressing the bung.

A indicates the barrel-stave, and B the bung-hole. C is the bung, consisting of various parts as follows, viz.: D is a center-piece, provided with a central recess, *a*, in its upper part. The sides *b* of piece D preferably fit closely, but not tightly, within the bung-hole. The upper part of piece D is provided with flanges or one circular flange, *d*, which laps over and rests upon the outside of the stave. The middle portion, *e*, of the piece D forms a truncated cone, and ends in a cylindrical extension, *f*. These conical and cylindrical portions are surrounded by a gasket, E, (or stopper,) of rubber or other elastic material, which stopper, in interior configuration, conforms to the shape of said portions *e* and *f*, and fits them closely. This stopper is exteriorly in the shape of a segment of a cylinder, whose diameter is a trifle less than that of the bung-hole B. Below piece D is another piece, H, provided with a broad annular bearing, *g*, supporting the gasket E, and provided with a circular recess, *h*, open above and closed below, (except where rod or screw K passes through,) and of such size as to accurately fit over and receive the cylindrical portion *f* of piece D, when the pieces H and D are pressed together. A screw, K, provided with head *m* in recess *a*, engages a female screw, *n*, in piece D, and passes through and projects beyond the bottom *t* of the piece H. Upon this portion of the screw which projects beyond the piece H are a couple of set-nuts, V W.

The mode in which my invention operates is as follows: The bung, being in the position shown in Fig. 1, is inserted into the bung-hole until the flange *d* rests upon the outer surface of the stave. A screw-driver is then inserted into the slot *y* of the screw-head *m*, and the screw turned so as to draw up the piece H toward piece D. As the pieces H and D approach each other they compress the rubber gasket or disk E, which, from the pressure of the pieces D and H at its sides, is forced outward and caused to assume the position shown in Fig. 2.

The wedge form of part *e* of piece D aids and facilitates the rubber while being compressed in spreading beyond the sides of piece D, and in overlapping the lower edges of the bung-hole, and extending over the lower surface of the stave beyond the surface of the bung-hole.

The movement of piece H toward piece D brings the extended rubber tightly against

the under side of the bung-hole and stave, and thus completely stops the hole. When the rubber, by reason of wear, becomes permanently somewhat compressed and thinner, the change in the thickness of the rubber may be obviated by resetting the set-nut V W on screw-rod K closer to the piece D.

The amount of compression which the rubber is to receive, and consequent extent of the spread of the rubber when compressed, is attained by the setting of the set-nuts on the rod K nearer to or farther from the piece D.

When preferred, the slanting sides of the conical portion *e* may be omitted and the piece become the same and one with the extension *f*. Also, a button may be substituted for the set-nuts V W, but is somewhat objectionable, as not enabling the length of the rod K between the head and the button to be regulated to fit the special thickness of rubber to be employed, or vary, as desired, the amount of pressure upon the rubber.

When preferred, a square head may be substituted for the slotted head *m* and the said head turned by a wrench or key.

There are many other forms of devices which can be employed to carry into effect the first and principal portion of my invention. One of such forms is shown in Fig. 3, where the rod K is elevated by means of inclines M, as follows: The end of the rod is provided with horizontal arms N, one of which rests upon the face of its respective incline, as shown.

A turn-key or wrench being placed over the arms, and the rod being thereby rotated, the arms will be forced up the inclines until they rest upon the flat faces Z. The rubber is thus compressed and the bung-hole closed.

To open the bung-hole, the foregoing operation is reversed. In such instance the employment of a screw to elevate or depress the rod K in reference to portion D is dispensed with. The rod K may be perforated for a vent, this vent-opening connecting the interior of the barrel with the outer air, and being closed by any appropriate means, as screw, stopper, &c.

What I claim as new and of my invention is—

1. In a bung, the combination of the piece *b d* and wedge *c*, whose beveled sides are located below the inner surface of the cask, and elastic disk E, likewise located below the inner surface of the cask, said wedge being adapted to impinge against the central opening of the disk, and piece H, located below the disk E, and tightening-screw K, and the nuts V W, substantially as and for the purposes specified.

2. In a bung, the combination of piece D, closely fitting the bung-hole, and provided with a shoulder located at or below the inner surface of the cask, and piece H, also located below the inner surface of said cask, rubber E, located between said shoulder of piece D and the piece H, and of less diameter than the bung-hole, and sufficiently thick to expand when compressed beyond the edges of the bung-hole and rest against the inner surface of the cask, and tightening-screw K and the nuts V W, substantially as and for the purposes specified.

3. The combination of piece D, provided with flange *d* and parts *e* and *f*, and the piece H, provided with shoulders *g* and bottom *t*, and the screw-rod K, provided with an appropriate head for turning it, and with set-nuts V W, and the elastic stopper E, substantially as and for the purposes specified.

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