

(No Model.)

J. D. MATTISON.

STOPPER LOCK.

No. 297,425.

Patented Apr. 22, 1884.

Fig. 1.

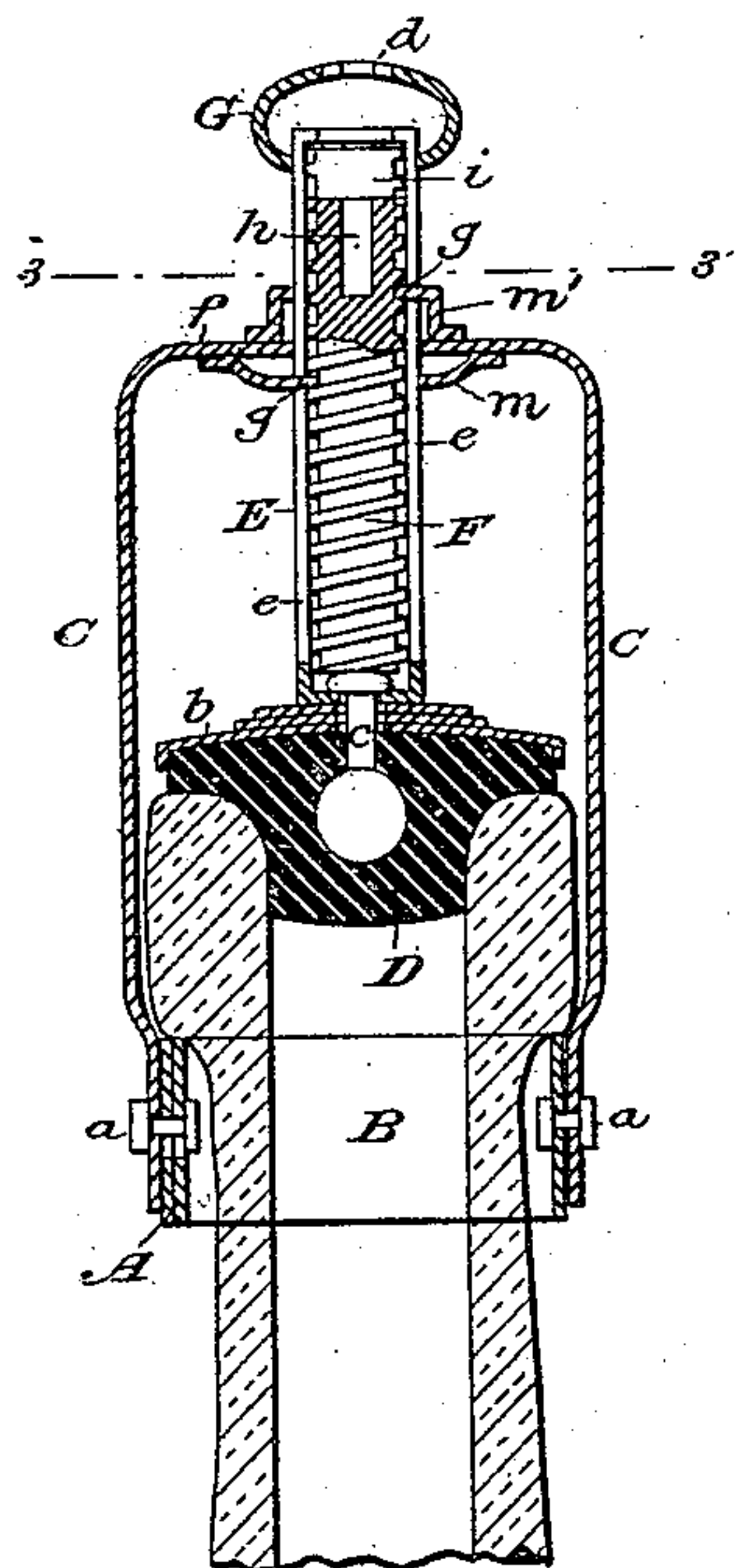


Fig. 2.

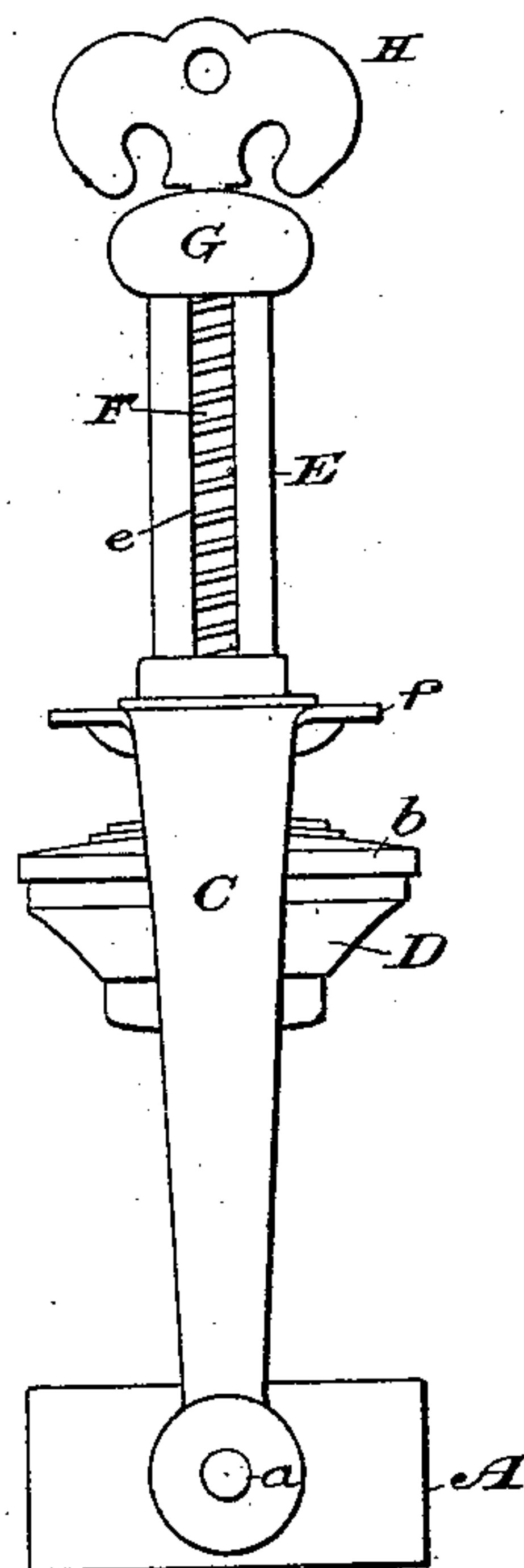


Fig. 3.

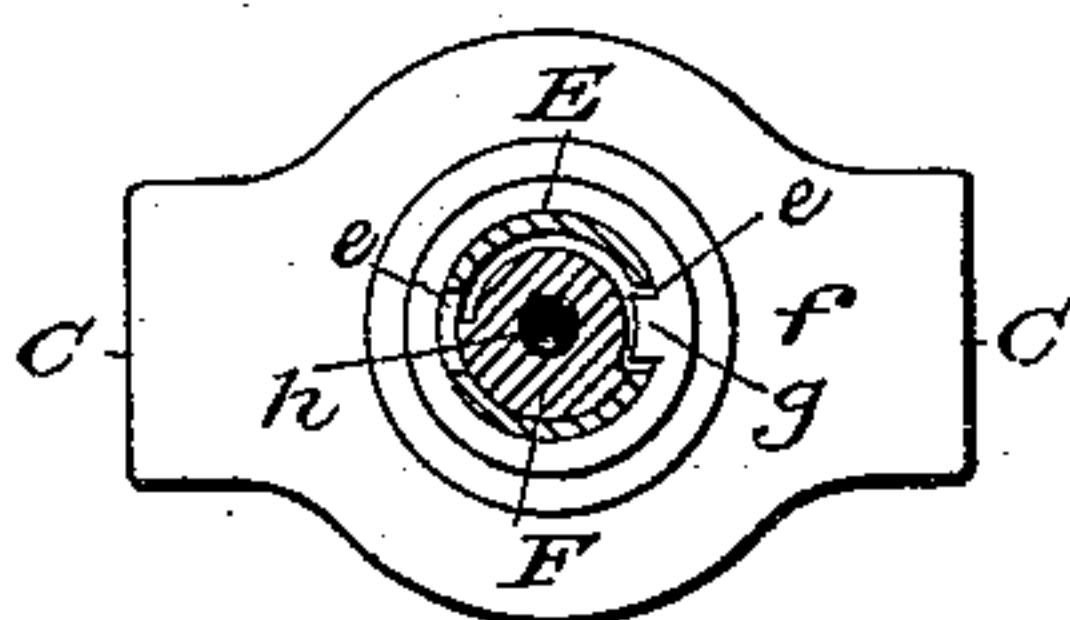


Fig. 4.

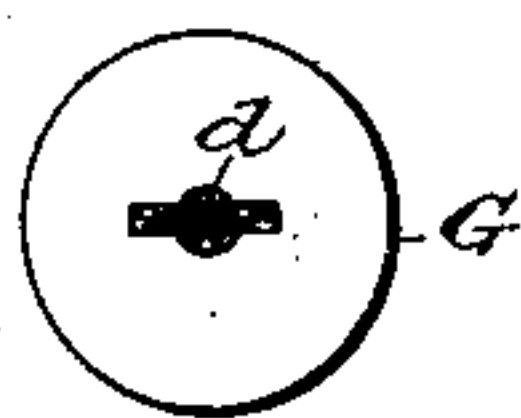


Fig. 5.

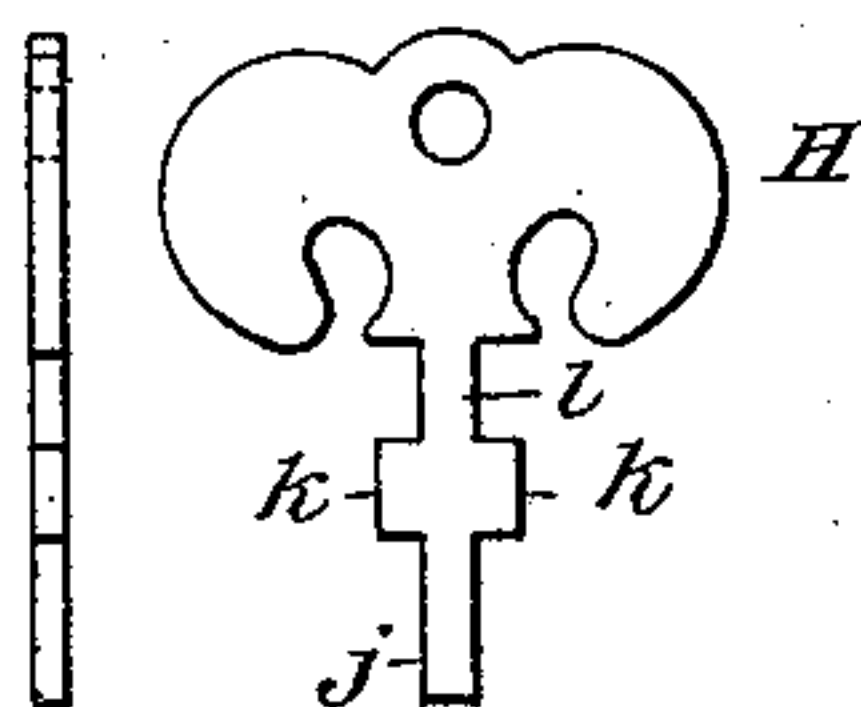


Fig. 6.

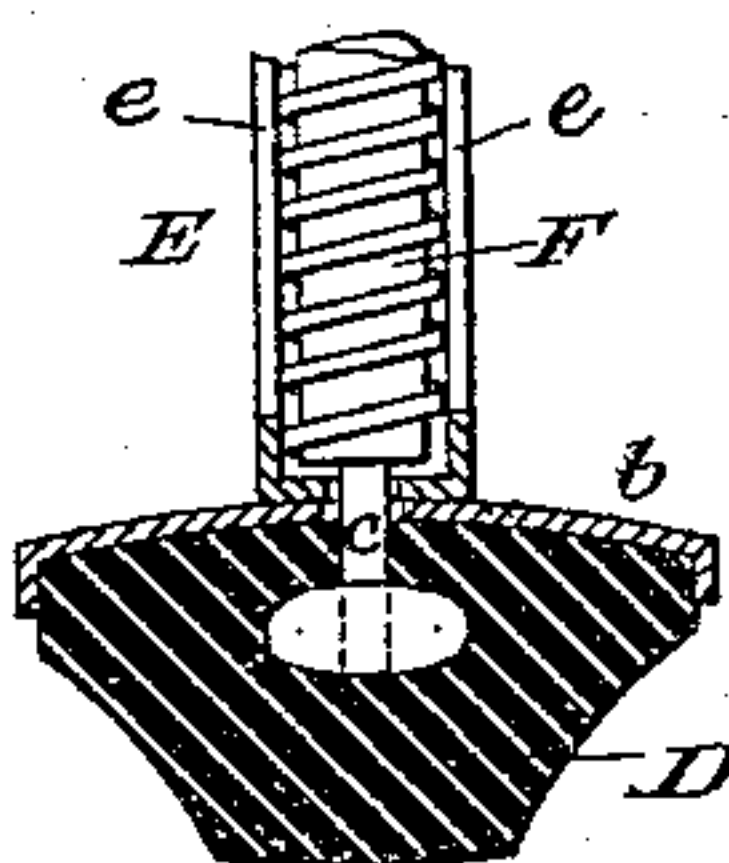


Fig. 7.

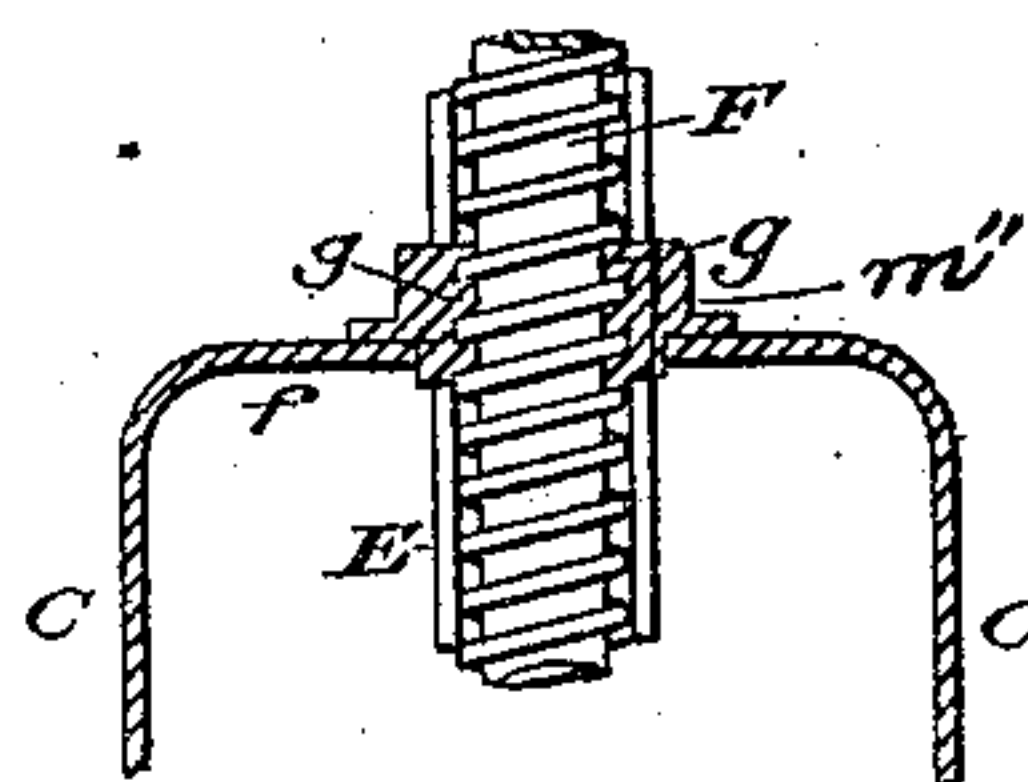
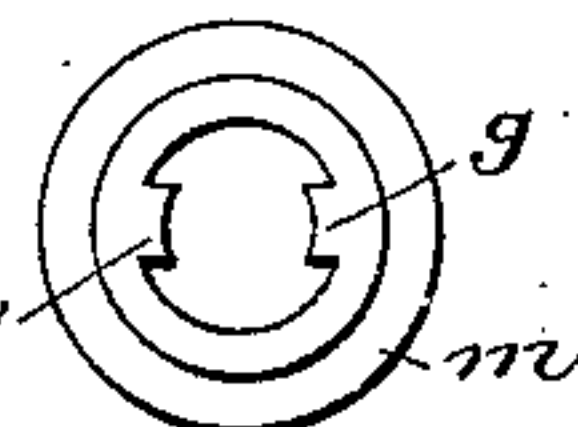


Fig. 8.



UNITED STATES PATENT OFFICE.

JAMES D. MATTISON, OF NEW YORK, N. Y.

STOPPER-LOCK.

SPECIFICATION forming part of Letters Patent No. 297,425, dated April 22, 1884.

Application filed February 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. MATTISON, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain Improvements in Stopper-Locks for Bottles, &c., of which the following is a specification.

The object of my invention is to provide a stopper for a bottle or similar receptacle which is adapted to be raised and lowered by a screw, which screw can only be turned by a special key. Therefore when the stopper is driven down to its seat by turning the screw, and the key is removed, the screw cannot be rotated, so as to raise the stopper, by reason of the peculiar construction of the apparatus.

In the drawings, which serve to illustrate my invention, Figure 1 is a vertical mid-section of my apparatus, showing the stopper seated and the key removed. Fig. 2 is a side elevation of the apparatus detached from the bottle. Fig. 3 is a horizontal cross-section on line 3 3 in Fig. 1. Fig. 4 is a plan view of the case at the top of the stem, showing the key-hole. Fig. 5 shows side and edge views of the key detached. Figs. 6, 7, and 8 illustrate slight modifications, which will be hereinafter described.

In order to distinguish between what is new and what is old in these stoppering devices, I will say that heretofore collars have been made to embrace the neck of a bottle below the collar, and a bail has been hinged or pivoted to this. In the top bar of this bail a nut has been constructed, and the screw-threaded stem of the stopper passed through this nut. This is merely a screw-stopper, and any one may remove the stopper at will. My invention contemplates means for preventing the removal of the stopper, except by the use of a special key.

A is an adjustable collar to embrace the neck B, Fig. 1, of the bottle; and C is the bail, hinged to the collar at *a a* in the usual way. These features are shown in a former patent of mine.

D is the stopper, which is usually of rubber, and provided with a sheet-metal cap, *b*.

E is a tube, within which is the screw F, the latter being retained in place in the tube by the turning in of the tube E over the ends of

the screw. The stopper D is preferably connected to the tube E by means of a stem, *c*, the spherical head of which is embedded in the rubber forming the stopper. The neck of stem *c* passes through cap *b* and through the bottom of the tube E, and a head on the upper end of the stem secures it in place. On the top of tube E is secured a case, G, which houses the upper end of the same, and which has in its top a key-hole, *d*, as best seen in Fig. 4. The tube E has longitudinal slots *e e* at each side, which extend or may extend nearly its entire length. The tube E fits snugly in and plays through a hole in the cross-bar or plate *f* of the bail C, and inwardly-projecting teeth *g g* on this bar project through the slots *e e* in the tube and engage the screw-threads on screw F, thus playing the part of a nut. It will be seen that screw F is simply incased in tube E, and is not connected with it in any way, nor with the stopper—that is to say, it may rotate freely independently of the tube and stopper; but it must move longitudinally with said tube and stopper; but if the screw be turned the engagement of its threads with the teeth *g g* will move it longitudinally through *f*, and it will carry the tube and stopper with it; but the tube cannot turn by reason of the engagement of the teeth *g g* with the sides of the slots *e e* in said tube.

I have referred to the teeth *g g* as being on plate *f*, and they might be formed on same; but in order to give the screw a longer bearing, I secure to the bar or plate *f* (by brazing, for example) two rings or plates, *m* and *m'*, on its under side and upper side, respectively, and form the teeth *g* on these—one tooth on each by preference—and these arranged oppositely, as clearly shown. These plates and their teeth perform the functions of a nut, and I call them a “nut” when taken collectively.

I will now describe the means I employ for rotating the screw.

In the top of the screw I sink or bore an axial socket, *h*, (see Figs. 1 and 3,) and cut a cross groove or nick, *i*, in the screw also. These are to receive the key H. (Shown detached in Fig. 5.) This key I usually make from a flat plate of steel, and I provide it with a tang, *j*, which may turn in the bore *h* in screw F, side flanges or wings, *k k*, which en-

gage the nick *i* in the screw, and a neck, *l*, which may turn in the enlarged central part of the key-hole *d* in the casing G.

When the apparatus is secured to the bottle, 5 which may be effected by the collar A in the usual way, and it is desired to seat the stopper, so as to close the bottle, the stopper is brought over the mouth of the bottle, and the key inserted until it properly engages the socket in 10 screw F. It is then turned by the thumb and finger, whereby the screw is rotated and the stopper run down and firmly seated. The key is then removed, and the stopper cannot be unseated, except by means of the key. It will 15 be seen that the screw is so housed and inclosed by the tube E and casing G that it cannot be seized and turned by any ordinary means or devices, and the rotation of the stopper, even if this could be effected, would effect 20 nothing, as it rotates independently of the screw. When the key is inserted at the key-hole *d*, the wings *k* may not coincide with the nick *i* in the screw; but space is allowed between the end of the screw and the crown of 25 casing G to receive this winged portion of the key, and it may easily be turned until the wings are brought to coincide with nick *i*.

Although I prefer to make the stem *c*, whereby the stopper is connected with tube E, independent of the screw, this is not absolutely 30 essential. I may turn or form a stem on the lower end of the screw, and then affix a spheroidal knob on this stem, to receive the stopper. This construction is clearly shown in Fig. 6; 35 or, what is the same, the stem may be formed on the knob, and then secured in a socket in the screw. I do not limit myself to any means of attaching the stopper to the tube E or the screw.

40 As the strain in seating the stopper is not very great, I may rely on the teeth *g*, (shown in Fig. 1,) which are merely parts of the sheet metal, to perform the office of a nut; but I

may employ as well the construction shown in Figs. 7 and 8 in lieu of the above. This is 45 in substance a solid metal nut, M, with the screw-threads cut away, except at the points on opposite sides where they engage the slots *e* in tube E. Indeed, the nut in the bail may be formed in various ways. For example, the 50 nut might be inclosed in the tube E, and have lugs to project through the slots *e* and be secured to *f*. I prefer to provide tube E with two slots arranged oppositely, and provide the nut with teeth on opposite sides to engage 55 these slots; but it is obvious that the apparatus might be made to work with but one slot, and teeth on but one side. This would not serve so good a purpose, however, as the strain would be on one side. The screw may have a steep 60 pitch, and be many-threaded, if desired.

Having thus described my invention, I claim—

1. In a stopper-lock for bottles and similar receptacles, the combination, with the bail pro- 65 vided with a nut, of the stopper, the screw provided with a key-socket, the slotted tube which incloses the screw, and the casing secured to said tube and provided with a key-hole, substantially as set forth. 70

2. In a stopper-lock for bottles and similar receptacles, the combination, with the bail provided with a nut, of the stopper, the slotted tube E, the stem *c*, for attaching the stopper to the tube, the inclosed screw F, provided 75 with a key-socket in its upper end, and the casing G, provided with a key-hole to receive the key, all arranged substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing 80 witnesses.

JAMES D. MATTISON.

Witnesses:

ARTHUR C. FRASER,
ELBERT B. BOLTON.