

No. 749,560.

PATENTED JAN. 12, 1904.

A. D. HULQUIST.
LOCK FOR THE ADJUSTABLE BACKS OF LOOSE LEAFED LEDGERS,
ACCOUNT BOOKS, &c.

APPLICATION FILED MAY 28, 1903.

NO MODEL.

Fig. 1.

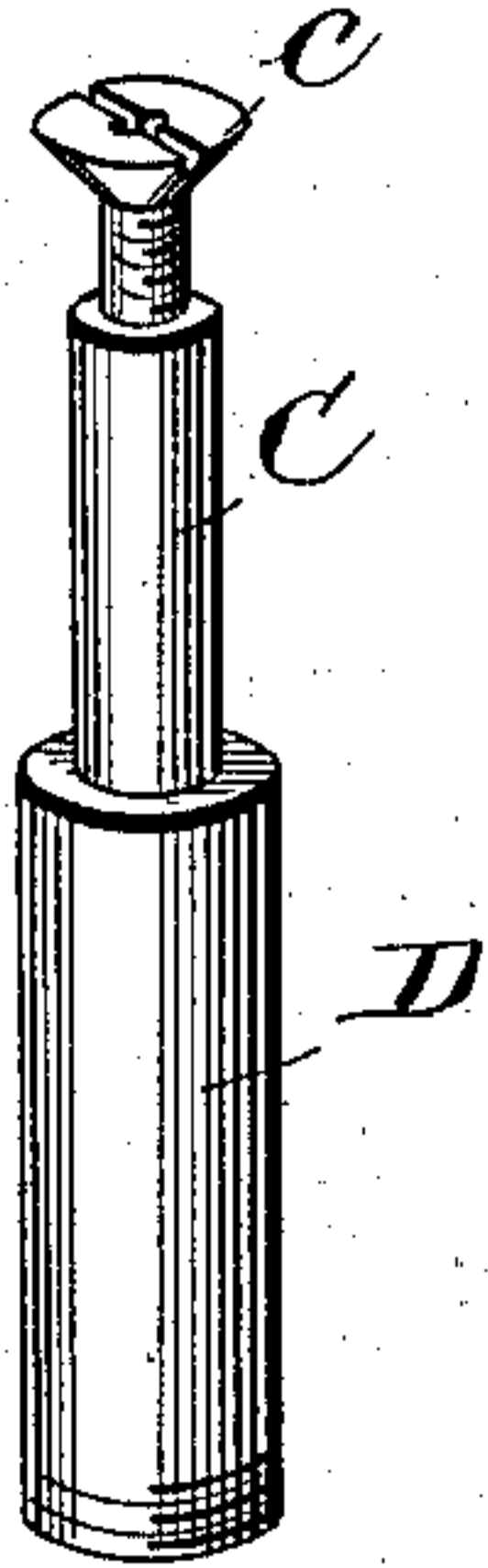


Fig. 2.

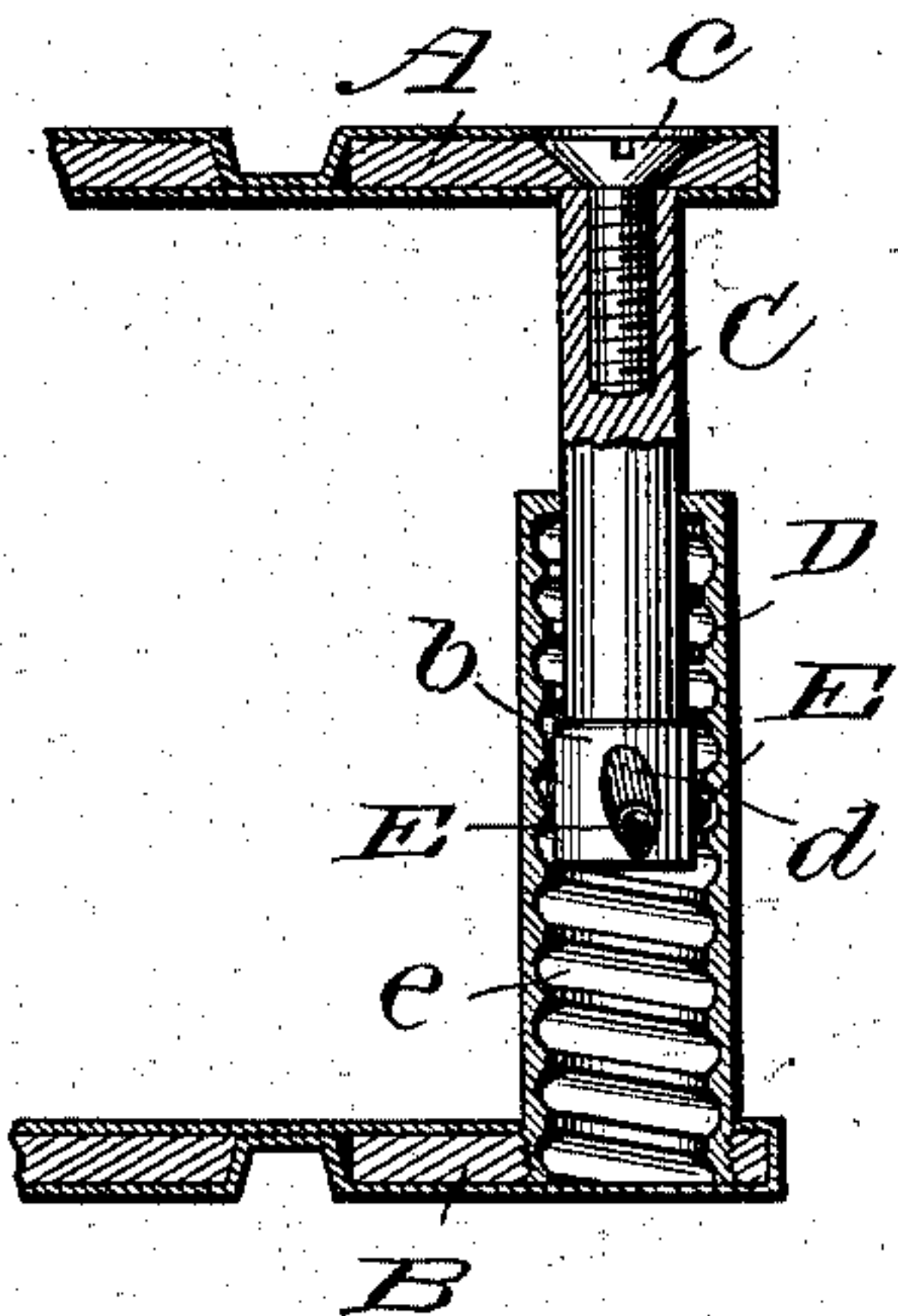


Fig. 3.

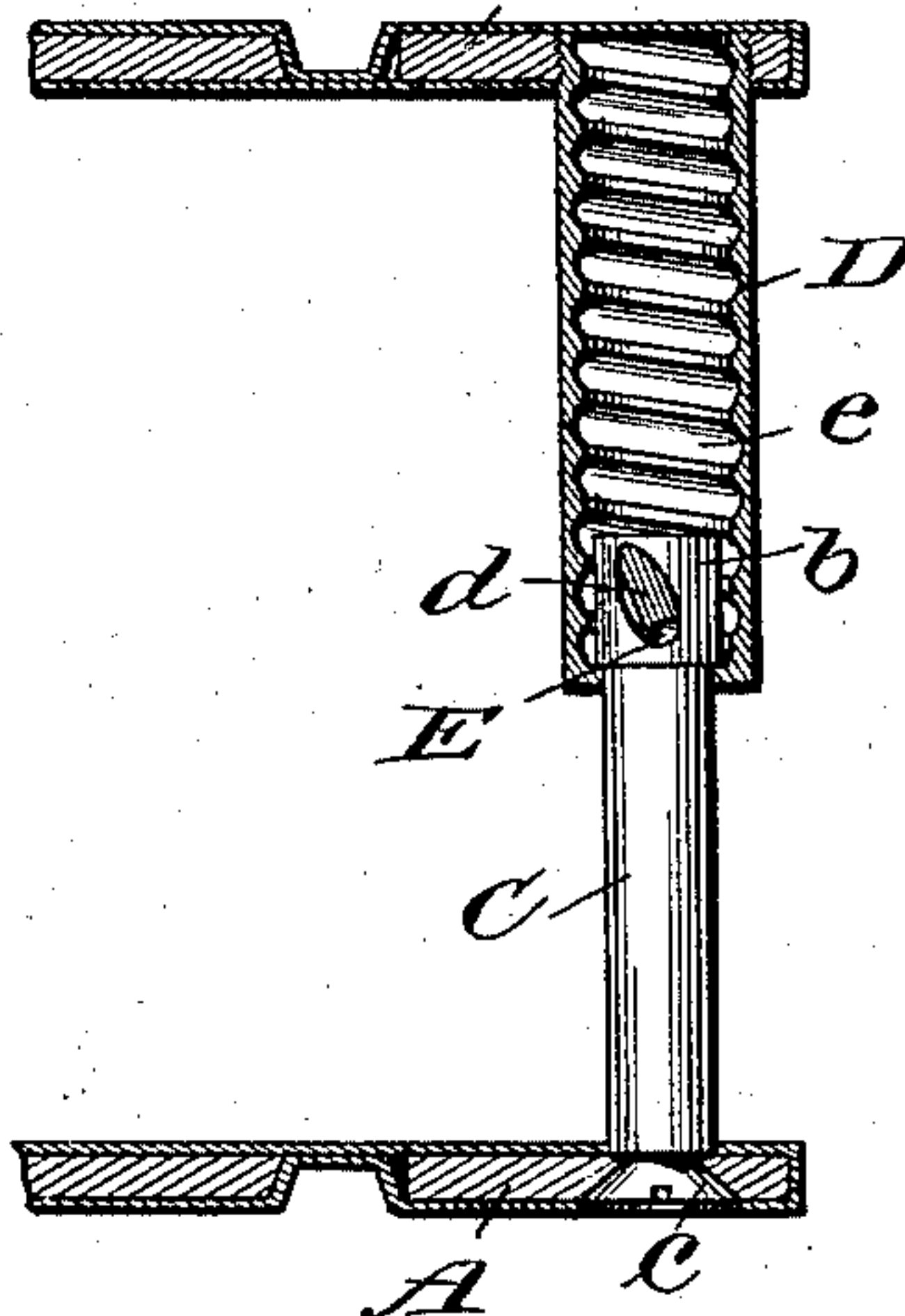


Fig. 4.

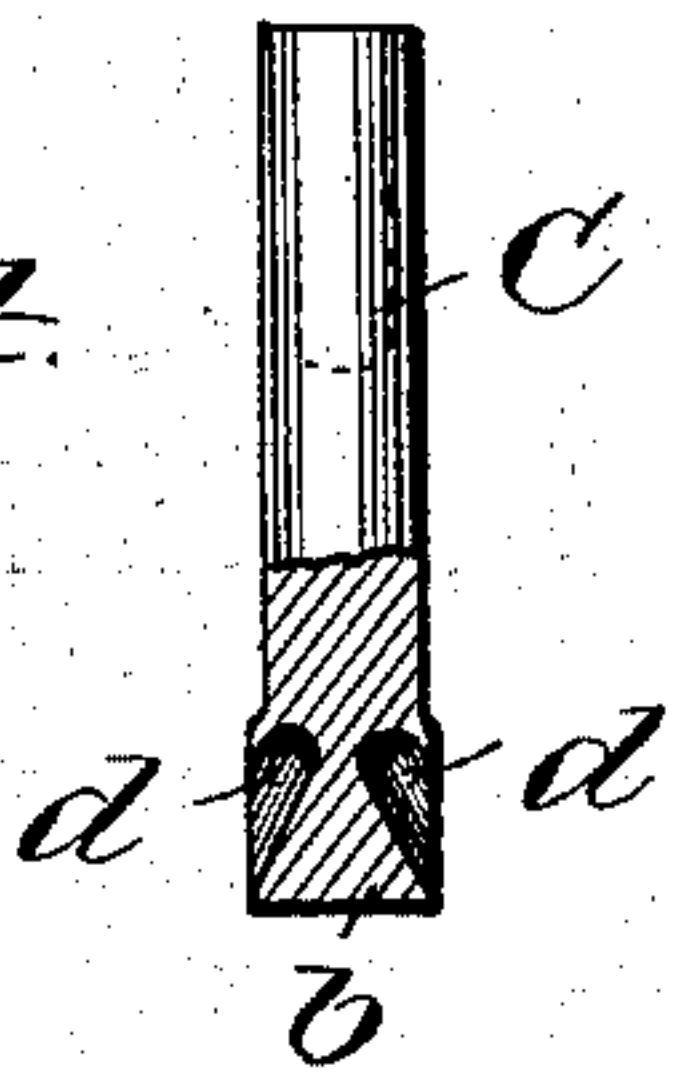
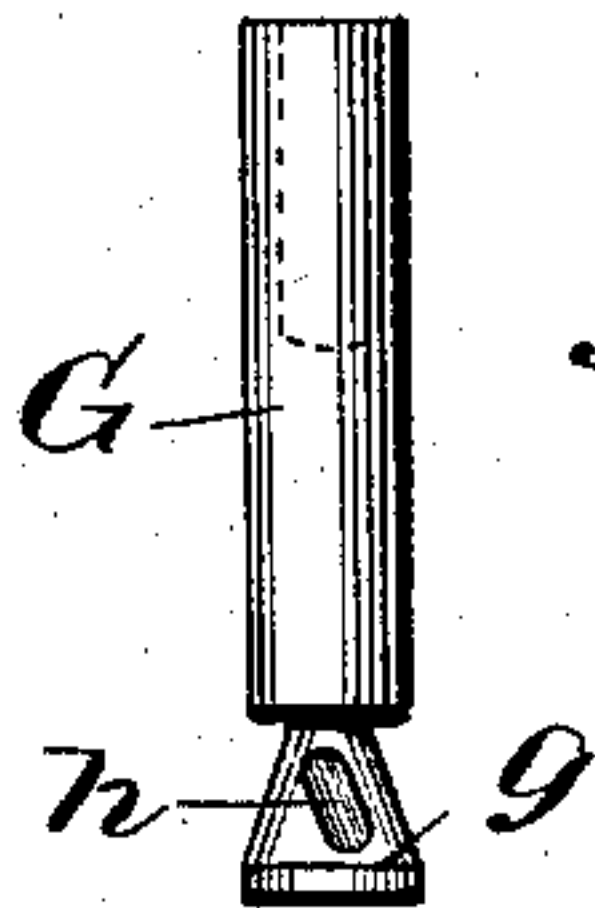


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

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LOCK FOR THE ADJUSTABLE BACKS OF LOOSE-LEAFED LEDGERS, ACCOUNT-BOOKS, &c.

SPECIFICATION forming part of Letters Patent No. 749,560, dated January 12, 1904.

Application filed May 28, 1903. Serial No. 159,111. (No model.)

To all whom it may concern:

Be it known that I, ANDREW D. HULQUIST, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locks for the Adjustable Backs of Loose-Leafed Ledgers, Account-Books, Record-Books, Files, &c., of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, cheap, and economically-constructed lock the manufacture of which dispenses with many mechanical operations now indulged in by reason of the employment of the commercial forms of the material in making them and which automatically locks and unlocks by a simple manipulation of the book in connection with which they are used. This I accomplish by the means hereinafter described, and as particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective of one of said locks separate from the book-covers in connection with which they are designed to be used. Fig. 2 is a longitudinal central section showing the ends of the parts thereof secured to the clamping-strips of the backs of said books and in locked relation. Fig. 3 is a similar view, only reversed, and showing the parts thereof unlocked. Fig. 4 is a detail view of the bolt, showing the unsecured end thereof in section. Fig. 5 is a detail view of a modification of the bolt.

Referring to the drawings, A and B represent the flat transverse strips of metal or clamping-plates of the backs of books between whose cover (which are hinged thereto) removable sheets or pages are secured.

My improved lock consists of a bolt C, projecting from one of these plates, and a tube D, projecting from the other plate in alignment with said bolt and into which said bolt enters and is locked or unlocked by the action of a ball E or similar gravity-controlled device. The bolt C is connected to plate A by means of a screw *e*, which is passed through a countersunk opening in said plate and is tapped longitudinally and centrally into the adjacent end of the bolt. This screw enters

the bolt far enough to hold it in its proper relative position to the sectional tube, and yet lets it remain sufficiently loose, so that by manipulating said screw with a screw-driver or other suitable device the bolt can be rotated. The end of the bolt opposite plate A is slightly increased in diameter to form a head *b*, the shoulder of which comes in contact with the marginal edges of the restricted opening in the closed unsecured end *a* of the tube and prevents the withdrawal of said bolt from the same. The head *b* of the bolt is provided with a series of longitudinally-disposed pockets *d d* therein, which are shallowest at the ends thereof nearest the extremity of the bolt and gradually increase in depth as they extend toward their opposite ends. I prefer to make these pockets oblique to the axis of the bolt and also to provide two or more of the same located at equal distances apart, although this is not essential, as one only could be used. Seated in said pockets *d* are the steel balls E or their equivalents, and when the bolt is in the position shown in Fig. 2 these balls gravitate down toward the lower ends of the pockets and wedge between the inner surfaces of the tube D and said bolt and securely lock it against the further withdrawal movement of the bolt. In order to prevent the balls from slipping when the bolt is locked, I have provided the inner circumference of said tube with circumferential or spiral grooves *e*, with which said balls engage. When the position of the parts of the lock are reversed, as shown in Fig. 3 of the drawings, the balls gravitate down into the deepest part of the pockets of the bolt and release the tube, so that the clamping-plates A and B may be drawn farther apart. Instead of the tube having the spiral groove screw-threaded on its inner circumference it may be roughened on the inside in such manner as to afford lodgment for the balls when they are moved to the shallower part of the pockets and wedge against the tube. Any irregular surface of the interior or bore of the tube which would afford the ball a hold under the circumstances just set forth would come within the spirit of my invention.

In Fig. 5 a modified construction of the bolt G is shown, which consists of reducing the circumference of the unsecured end of the bolt and forming the resulting extension into a truncated cone-shaped head *g*, the apex of which is connected to the end of the bolt and the base of which is slightly greater in diameter than the body of the bolt G. The conical sides of this head *g* are provided with the longitudinally-elongated pockets *h/h*, which are preferably of the same depth throughout. The operation of the lock having the form of bolt shown in this modification is the same as that shown in the first four figures of the drawings.

If desired, the covers which, as shown in the drawings, are attached to clamping-plates A and B may be dispensed with and the lock with the clamping-plates be used for any purpose for which their use may be desirable.

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

1. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is uneven; and an independent gravity-controlled device interposed between said bolt and tube for automatically locking the same together when in one position and unlocking them when in the reverse position.

2. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates and provided with a longitudinally-disposed pocket in its unsecured end; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is uneven; and an independent gravity-controlled ball seated in said pocket for automatically locking the same together when in one position and unlocking them when in the reverse position.

3. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates and provided with a longitudinally-disposed pocket in its unsecured end which increases in depth as it extends from the extremity of said bolt; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is uneven; and an independent gravity-controlled ball seated in said pocket for automatically locking the same together when in one position and unlocking them when in the reverse position.

4. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates and provided with a longitudinally-disposed pocket in its unsecured end arranged oblique to the axis of said bolt; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is uneven; and an independent gravity-con-

trolled ball seated in said pocket for automatically locking the same together when in one position and unlocking them when in the reverse position.

5. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates and provided with a longitudinally-disposed pocket in its unsecured end arranged oblique to the axis of said bolt and increasing in depth as it extends from the adjacent extremity of said bolt; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is uneven; and an independent gravity-controlled ball seated in said pocket for automatically locking the same together when in one position and unlocking them when in the reverse position.

6. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is circumferentially grooved; and an independent gravity-controlled device interposed between said bolt and tube for automatically locking the same together when in one position and unlocking them when in the reverse position.

7. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is provided with a spiral groove; and an independent gravity-controlled device interposed between said bolt and tube for automatically locking the same together when in one position and unlocking them when in the reverse position.

8. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates and provided with a longitudinally-disposed pocket in its unsecured end; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is provided with a spiral groove; and an independent gravity-controlled ball seated in said pocket for automatically locking the same together when in one position and unlocking them when in the reverse position.

9. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates and provided with a longitudinally-disposed pocket in its unsecured end which increases in depth as it extends from the adjacent extremity of said bolt; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is provided with a spiral groove; and an independent gravity-controlled ball seated in said pocket for automatically locking the same together when in one position and unlocking them when in the reverse position.

10. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from

one of said plates and provided with a longitudinally-disposed pocket in its unsecured end arranged oblique to the axis of said bolt; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is provided with a spiral groove, and an independent gravity-controlled ball seated in said pocket for automatically locking the same together when in one position and unlocking them when in the reverse position.

11. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates and provided with a longitudinally-disposed pocket in its unsecured end arranged oblique to the axis of said bolt and increasing in depth as it extends from the adjacent extremity to said bolt; a tube secured to the other plate into which said bolt enters, the surface of the inner wall of which is provided with a spiral groove; and an independent gravity-controlled ball seated in said pocket for automatically locking the same together when in one position and unlocking them when in the reverse position.

12. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates, and having its unsecured end increased in diameter and forming a head having an elongated pocket therein; a tube secured to the other plate having a restricted opening in its unsecured end through which the body of said bolt passes into the tube; and

a ball seated in said pocket, as and for the purposes set forth.

13. A lock comprising clamping-plates; a rotatable bolt secured to and projecting from one of said plates, and having its unsecured end increased in diameter and forming a head having an elongated pocket therein arranged oblique to the axis of the bolt and increasing in depth as it extends from the extremity of the bolt; a tube secured to the other plate having a restricted opening in its unsecured end through which the body of said bolt passes into the tube; and a ball seated in said pocket, as and for the purposes set forth.

14. A lock comprising clamping-plates one of which has a countersunk opening therein; a headed screw extending through said opening; a bolt into the end of which said screw is tapped and which has a head of increased diameter at its other end that has an elongated pocket therein; a tube secured to the other plate having a restricted opening in its unsecured end through which the body of said bolt passes into the tube; and a ball seated in said pocket, as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 11th day of May, 1903.

ANDREW D. HULQUIST.

Witnesses:

E. K. LEMDY,
E. W. HART.