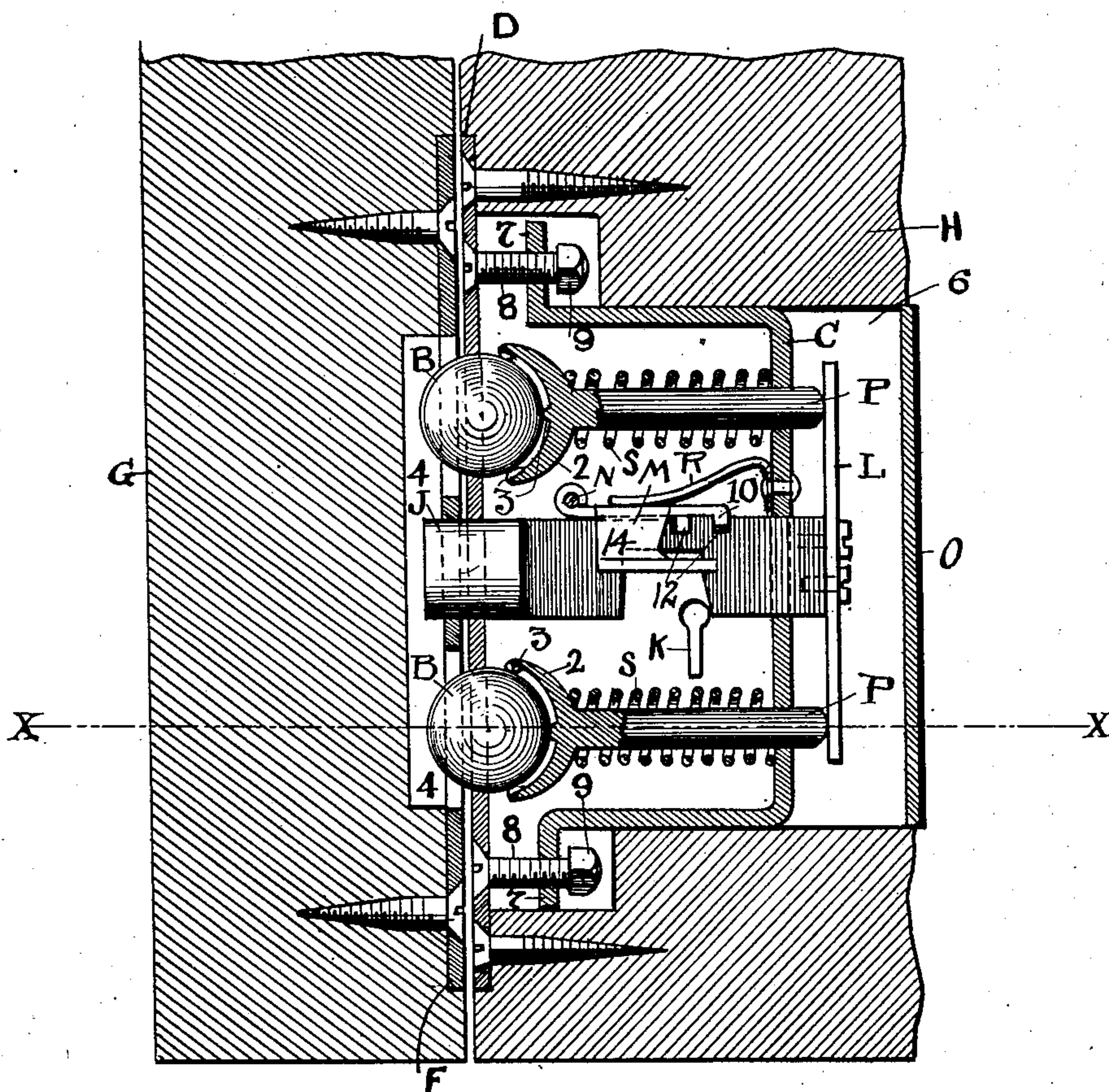
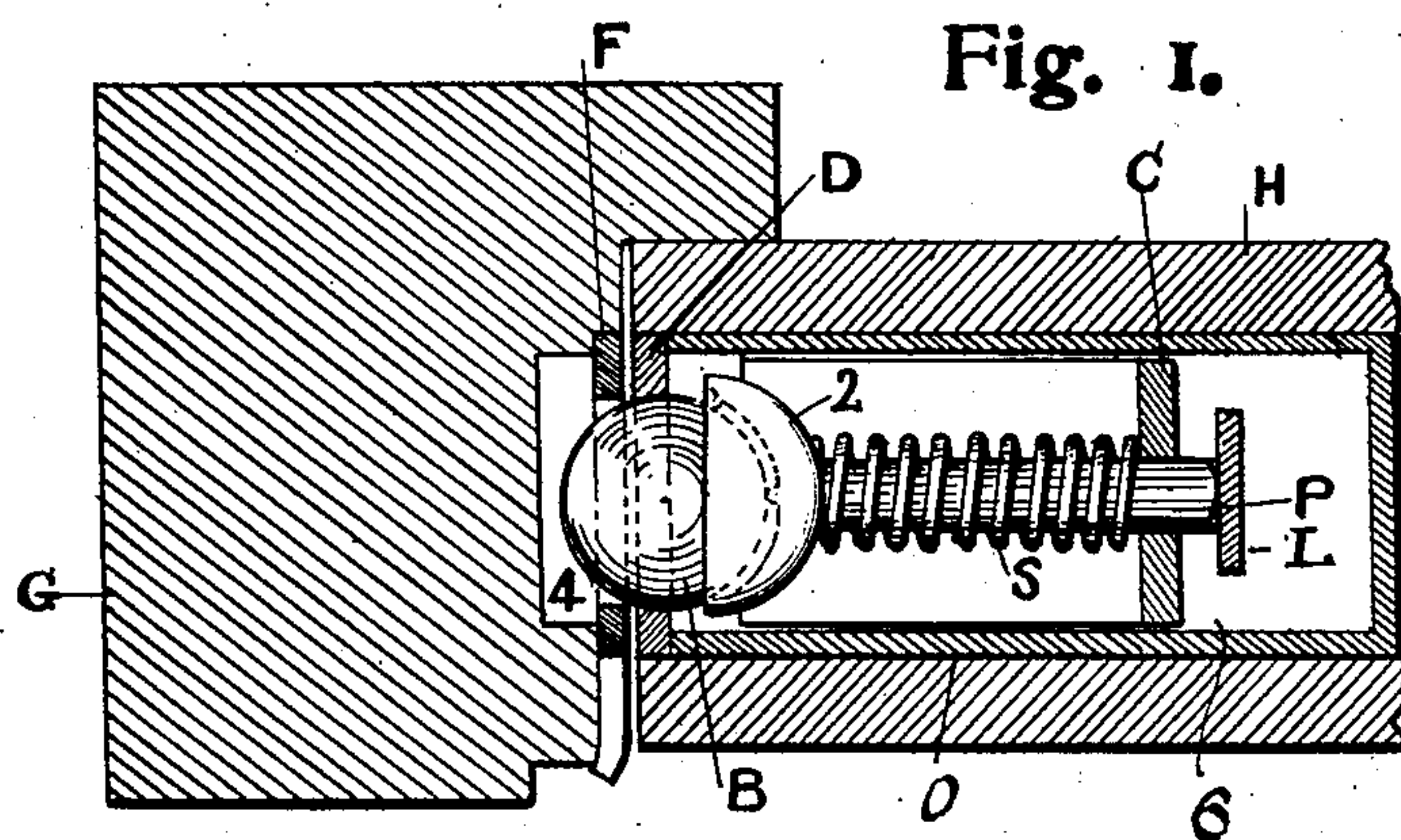


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BALL BEARING LOCK FOR DOORS AND GATES.
APPLICATION FILED SEPT. 7, 1909.

948,387.

Patented Feb. 8, 1910.



ATTEST
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UNITED STATES PATENT OFFICE.

FERDINAND ZIGANEK, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-THIRD TO JOHN H. SCHULTE AND ONE-THIRD TO JOSEPH SCHULTE, OF CLEVELAND, OHIO.

BALL-BEARING LOCK FOR DOORS AND GATES.

948,387.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed September 7, 1909. Serial No. 516,520.

To all whom it may concern:

Be it known that I, FERDINAND ZIGANEK, subject of Austria, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Ball-Bearing Locks for Doors and Gates, of which the following is a specification.

My invention relates to a ball bearing lock for doors and gates, and the invention consists in the construction and combination of parts, substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a cross section on line $x-x$, Fig. 2, and Fig. 2 shows a sectional side view of the invention with two balls or bearing points, and a locking bolt combined therewith.

The essential idea herein is to provide a ball bearing lock or latch for doors and gates which is adapted to engage and hold the gate or door and yet leave it free to respond to a push or pull to open and close the same without handling the latch or catch for this purpose.

The invention therefore comprises a ball B, one or more, a backing plunger P having a substantially cup shaped head 2 provided with projections 3 here and there on its concave engaging surface to reduce the area of contact with the ball to the minimum, an adjustable stirrup C in which the stems of the plunger are slidably engaged, a plate D having openings through which the said balls are adapted to project to approximately their middle or meridian portion, and springs S about said plungers or stems bearing against said heads 2 at one end and said stirrup C at the other and adapted to keep balls B in seating but yielding position. On the opposite side the casing G has cavities 4 into which the balls are adapted to project through holes in plate F a distance sufficient to cause or produce a latching and locking effect but such as will allow disengagement or opening by the requisite pressure upon the moving member whether it be the one that carries the balls or the opposite one, and the balls may be in either member.

In the present views the casing G represents the permanent member or casing and H the door.

Now it is desirable to have means for adjusting the tension of springs S when they

become slack or need strengthening for the conditions under which the device works. To these ends I have mounted the stirrup or frame C which supports the ends of the plunger spindles in a recess 6 in the door and support the same slidably therein in respect to plate D with which the extremities 7 of the stirrup are engaged by adjusting screws 8. The said extremities 7 are disposed parallel to plate D and the said screws have threaded engagement in screw holes in said extremities and carry check nuts 9 on their inner ends, and are freely rotatable in plate D by a screw driver or the like to draw the stirrup against the springs and tighten them.

The invention is equally adaptable to doors or the like whether they be hinged or sliding, and up to this point of the description the locking effect of the balls is of a yielding nature. However a permanent locking of the balls in plate F may also be obtained by means of a slidable bolt J, either round or rectangular in cross section, and which is operatively controlled by a key (not shown) when inserted through keyhole K in door H. Thus, bolt J extends through both plate D and stirrup C and is adapted to enter jamb plate F to supplement the locking effect of balls B when fixed plate L at the rear of bolt J comes into abutting and locking relation with the rear ends of plungers or stems P, as shown in Fig. 2, and as brought about by a turn of the key. Bolt J is in turn locked, both when in and when out, by a latch plate M hinged or pivoted to cross pin N of casing O, and which plate is spring pressed by spring R to keep its downwardly turned end 10 in either one or the other of the two notches 12 in the top edge of bolt J. Latch M has a depending side portion 14 which is adapted to be engaged by the key when initially rotated and whereby the latch is lifted free of bolt J to permit operation thereof by the key when fully rotated.

What I claim is:

1. In ball bearing locks for doors and the like, a ball and a plunger bearing thereon, a spiral spring about said plunger and a part through which said plunger extends engaged by said spring and adapted to be adjusted to increase or decrease tension thereof.

2. In ball bearing locks for doors and the like, a casing having a recess, and a ball bearing mechanism mounted therein comprising

a front plate and a ball extending partially through the same, a plunger with a concave head bearing on said ball, a stirrup into which the opposite end of the plunger projects, a spring about said plunger engaging said stirrup and adjusting screws connecting the ends of said stirrup with said plate, whereby the tension of the spring can be changed.

10 3. In ball bearing locks for doors, a ball and a slidable seating plunger therefor, a spring for said plunger, an adjustable backing member for said spring to take up tension therein, and a lock for said plunger to
15 hold said ball and plunger against inward movement.

4. In ball bearing locks for doors, a plurality of balls and a seating plate therefor, backing plungers for said balls, springs for
20 said plungers, and a stirrup member adapted to support said plungers and confine said

springs thereon and means to adjust said stirrup member in respect to said ball seating plate to increase or decrease the tension of the said springs.

5. In ball bearing locks for doors, a plurality of balls and a seating plate therefor, slidable backing plungers for said balls, springs for said plungers, and a stirrup member to support said plungers and confine said
30 springs, in combination with a slidable bolt mounted intermediate said plungers and parallel therewith and having engaging portions for said plungers to lock inward movement thereof when said bolt is in locking
35 position.

In testimony whereof I affix my signature in presence of two witnesses.

FERDINAND ZIGANEK.

Witnesses:

E. M. FISHER,

JOHN H. SCHULTE.