No. 641,492. Patented Jan. 16, 1900.

J. H. BODMAN

DOOR SPRING.

(Application filed Sept. 28, 1899.)

(No Model.)

Fig. 1.

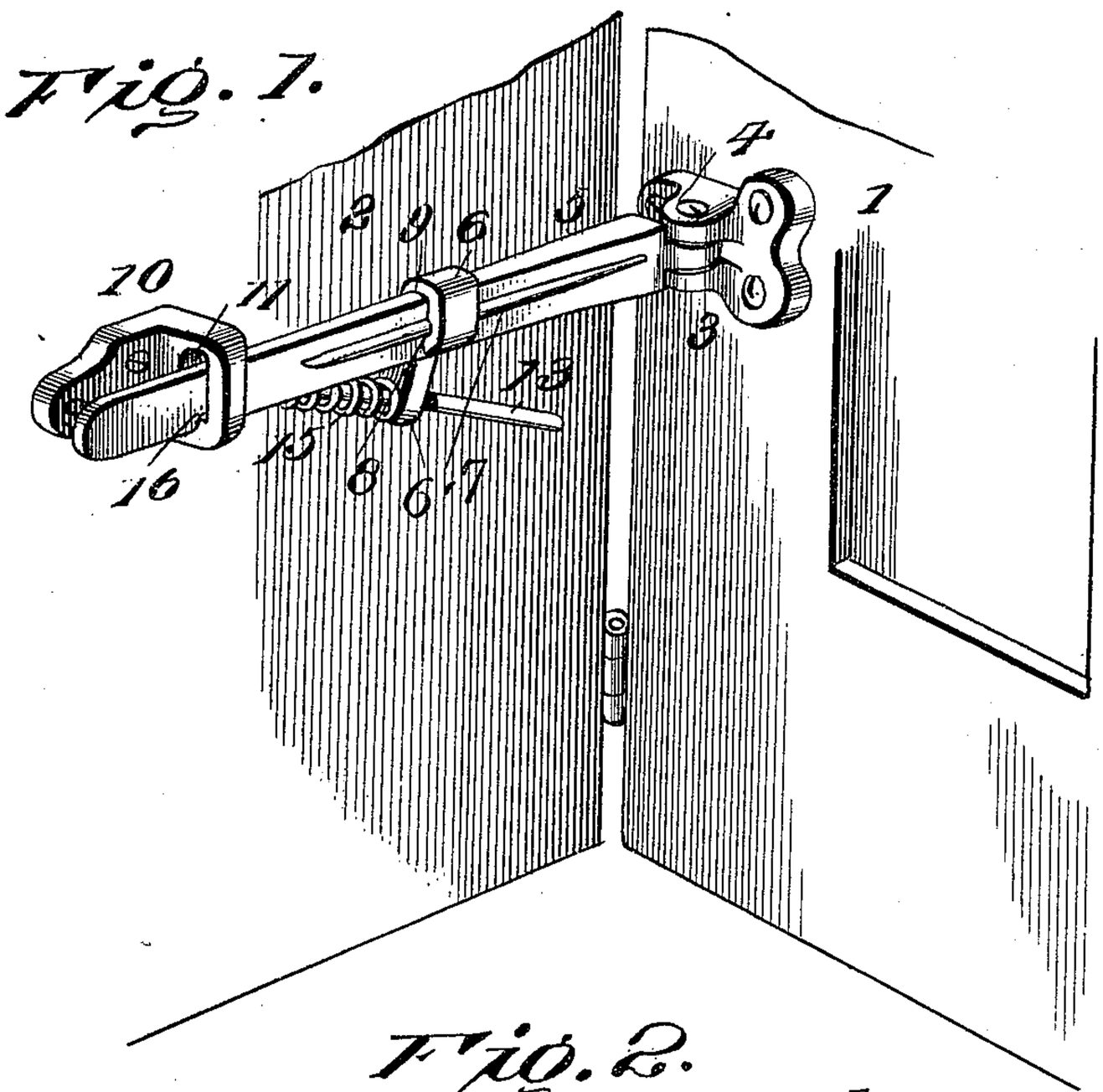


Fig. 2.

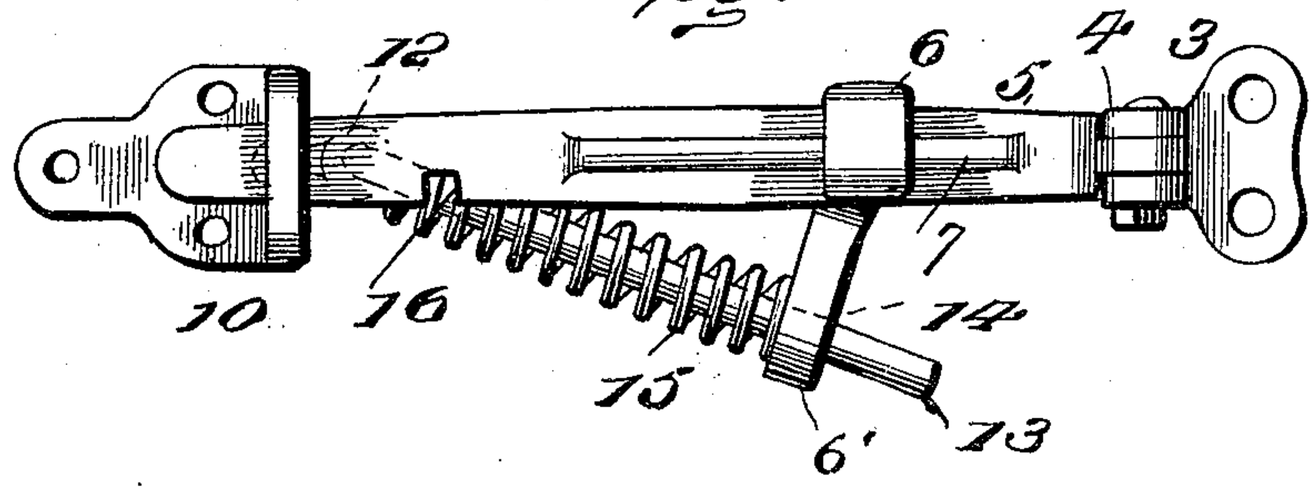
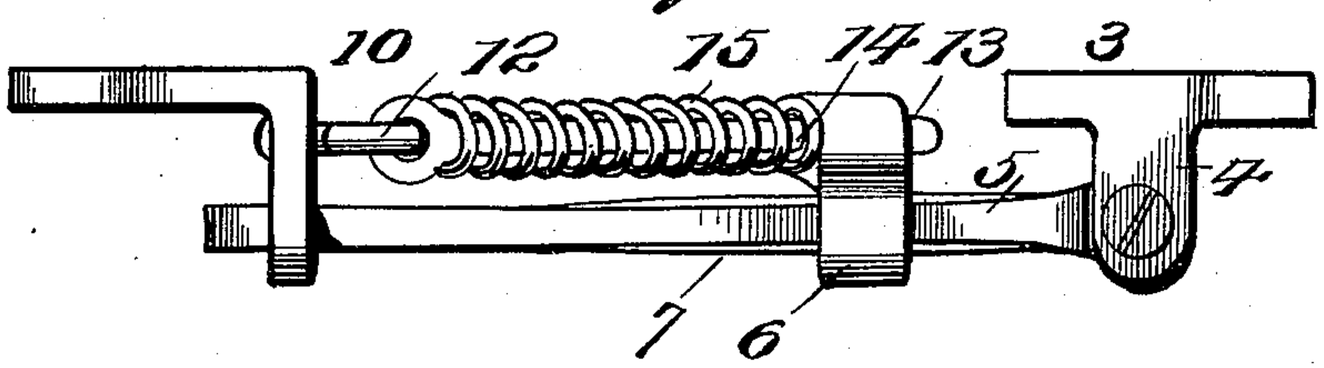


Fig. 3.



Witnesses.
Jno. Imrie
L. Noel.

Inventor
J. H. Bodman
By J. R. Nottingham
Attorney

UNITED STATES PATENT OFFICE.

JAMES HENRY BODMAN, OF CLINTON, MASSACHUSETTS.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 641,492, dated January 16, 1900.

Application filed September 28, 1899. Serial No. 731,926. (No model.)

To all whom it may concern:

Be it known that I, JAMES HENRY BODMAN, a citizen of the United States, residing at Clinton, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Door-Springs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of door-springs in which a hinged or pivoted lever actuated by the tension force of a spring is provided with means adapted to engage the keeper, whereby the door, lid, or cover will be held in locked position when the door is open; and to this end the invention consists, primarily, in the novel construction and arrangement of the several parts, as will be hereinafter more fully described, and particularly set forth in the claims.

The invention further consists in providing the hinged lever with an adjustable bracket, by means of which the tension force of the spring may be regulated.

The principal object of the invention is to produce a simple and effective device of the character mentioned which will be equally applicable to all kinds of doors, covers, or lids wherein it is desired to have the door, cover, or lid temporarily held in an open position and automatically close when released.

Another object of the invention is to provide for a cushioning effect when the door is being opened.

Still another object of the invention is to provide suitable means by which the tension force of the spring may be increased or diminished as required.

In the accompanying drawings, Figure 1 indicates a perspective view of a door and one side of the framing thereof with my improved device applied thereto, showing the door open and in locked position; Fig. 2, a side elevation of the device attached, and Fig. 3 a top plan view of the same.

Referring to the several views, the numeral 1 indicates the door, and 2 a part of the framing thereof.

The numeral 3 indicates a suitable base-plate, which is provided with the usual holes for the reception of screws or bolts for securing it to the door. Projecting from the base-plate is a standard 4, to which is hinged or pivoted a lever 5. Loosely mounted on the lever is a slidable bracket 6, and said lever is preferably provided with ribs 7, which engage grooves 8, made in the side walls of the open slot 9 of the slidable bracket which receives the lever.

The numeral 10 indicates the keeper, the base of which is provided with suitable holes for the screws or bolts which secure it to the framing of the door. The keeper is provided with a rectangular opening 11, through which the free end of the lever is adapted to reciprocate in the opening and closing of the door. Attached to the keeper is a short eyebolt or stud 12, to which is swiveled or otherwise pivotally connected a rod 13, its free end passing loosely through a perforation 14 in the projecting end of the bracket 6. Coiled around the rod 13, between its connected head and the bracket, is a spring 15, which serves to cushion the force exerted to throw open the door and to automatically close it when released. The lever is provided with a notch 16, which is adapted to engage one of the side walls of the opening 11 when the door is thrown open a certain distance, preferably at right angles to the wall of the building or other structure to which the door is provided. As the door is swung open the notch automatically engages the side wall of the keeper-opening, locking it until released. The door is released by slightly raising the lever out of engagement with the keeper, and the tension force of the spring closes it.

I prefer to construct the bracket with an arm 6′, extending slightly forward of and at an angle from one end thereof, so that the end of the rod 13 may be offset from a line parallel with the lever, which will give to the spring a torsional force sufficient to prevent the bracket from sliding on the lever when the door is being opened and to more securely hold said lever in engagement with the keeper.

The tension of the spring may be either increased or diminished, as occasion may require, by a proper adjustment of the bracket on the lever, the torsional force of the spring holding it securely in its adjusted position.

The invention is specially adapted to doors of all buildings or structures wherein automatic mechanism is employed to open the doors—such, for instance, as horse-stall doors of engine-houses. The device may be readily changed from right to left hand, or vice versa, by simply reversing the lever and changing the position of the bracket thereon accordingly.

Various modifications may be made without departing from the spirit of my invention or sacrificing the principle thereof—as, for instance, the lever may be made rectangular in cross-section and the bracket held in position thereon by means of a binding-screw if the torsional force of the spring should be found insufficient.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a door-spring, the combination of a latch-lever, a keeper coöperating with the latch-lever, and means arranged to exert force to hold said lever in constant engagement with the lower face of the keeper and to lock the lever, when the locking device thereon is brought into engagement with said keeper, and to close the door when released.

2. In a door-spring, the combination of a latch-lever and a projection therefrom, a keeper coöperating with said latch-lever, and means operating in connection with said projection, whereby sufficient force is exerted to hold the lever in constant engagement with the face of the keeper and to lock said lever, when the locking device is brought into engagement with the keeper, and to close the door when released.

3. In a door-spring or similar device, the combination of a lever, having one end hinged or pivoted to a suitable base-plate and the other end slidable in a keeper, said lever being provided with means for engaging the keeper, a bracket mounted on the lever, a rod, having one end connected to the keeper and the other end slidable in the bracket, a coil-spring on the rod, whereby a door, when the device is attached to the same, will be opened with a cushioning effect, and automatically locked in its open position.

4. In a door-spring or similar device, the combination with a latch-lever, having one end hinged or pivoted to a suitable base-plate, and the other end slidable in a keeper, a bracket mounted on the latch-lever, a rod, one end of which is connected to the keeper and the other end slidable in the bracket, and a spring coiled around the rod, said bracket being adjustable on said rod, whereby the tension force of the spring may be regulated.

5. In a door-spring or similar device, the combination of a latch-lever, having one end hinged or pivoted to a suitable base-plate and the other end slidable in a keeper, a bracket, having an arm 6′, a rod, having one end slidable in said arm, and a spring coiled around the rod, whereby a torsional force is exerted to hold said bracket in position upon the latch-lever.

6. In a door-spring or similar device, the combination of a latch-lever, having one end hinged or pivoted to a suitable base-plate and the other end slidable in a keeper, an adjustably-mounted bracket, upon the latch-lever, having an arm 6′, a rod having one end connected to the keeper and the other end slidable in said arm, and a spring coiled around the rod, whereby a torsional force is exerted to hold said latch-lever in engagement with the keeper, and the bracket in position upon the latch-lever.

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

JAMES HENRY BODMAN.

Witnesses:
WILLIAM M. STEVENSON,
LEWIS S. GORDON.