M. H. DAENITZ.

DOOR SPRING.

APPLICATION FILED NOV. 10, 1915.

1,172,013. Patented Feb. 15, 1916.

Fig. 1.

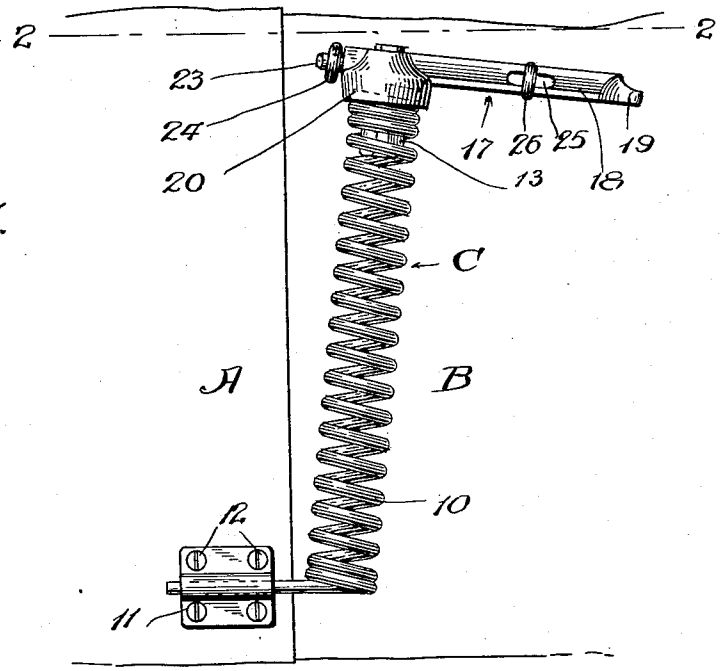


Fig. 2.

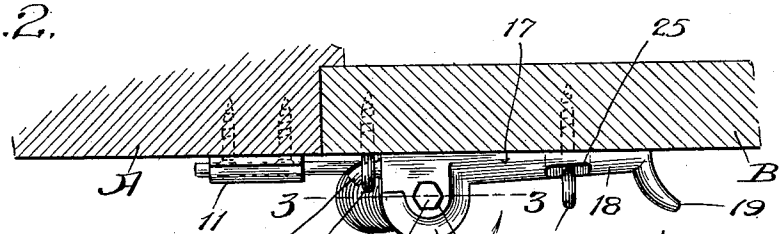


Fig. 3.

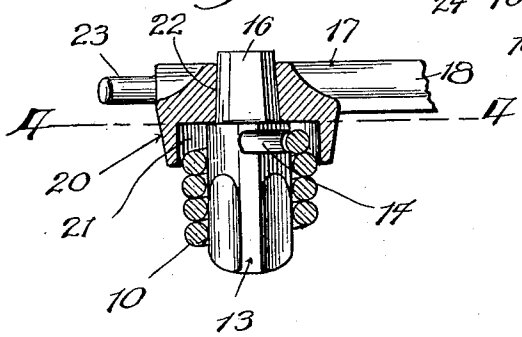
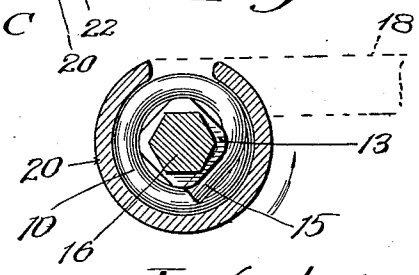


Fig. 4.



Inventor:
Max H. Daenitz,
by Charles O. Shurtz
his Atty.

UNITED STATES PATENT OFFICE.

MAX H. DAENITZ, OF HAMMOND, INDIANA.

DOOR-SPRING.

1,172,013. Specification of Letters Patent. Patented Feb. 15, 1916.

Application filed November 10, 1915. Serial No. 60,651.

To all whom it may concern:

Be it known that I, MAX H. DAENITZ, a citizen of the United States, and a resident of Hammond, county of Lake, and State of Indiana, have invented certain new and useful Improvements in Door-Springs, of which the following is declared to be a full, clear, and exact description.

This invention relates to door springs of that type employing a coiled torsion spring interposed between a member, attached to the door, and one attached to the jamb.

The principal objects of the present invention are to simplify door springs of this type, and to provide improved means for regulating the tension or torsion of the spring.

To such ends this invention consists in the several novel features hereinafter described and claimed.

The invention is clearly illustrated in the accompanying drawing, in which:—

Figure 1, is a side elevation of a door spring embodying the present invention, showing the same applied to a door and jamb; Fig. 2, is a horizontal section taken on line 2—2 of Fig. 1; Fig. 3, is a detail vertical section taken on line 3—3 of Fig. 2, and Fig. 4, is a detail horizontal section taken on line 4—4 of Fig. 3.

Referring to said drawing, A, designates a fragment of a door jamb, and B, a door hinged thereto in the usual manner.

C, designates the door spring as a whole, the coiled torsion spring of which is seen at 10. The lower end of said coiled spring extends out laterally from the lowermost coil or turn of the spring, and in approximately horizontal direction and is rotatively seated in a socket formed in a bracket 11, secured to the door jamb by screws 12. The upper end of the spring 10, is tightly wrapped around the lower, squared body portion of a head piece 13, which extends down into the hollow of the spring for a short distance and has a transversely extending groove 14, formed near its upper end, into which is forced the extreme upper end portion 15, of the spring 10; thus securely fastening the spring rigidly to the head piece. On the upper end of the head piece 13, is formed an upwardly extending, many sided neck or lug 16, here shown as comprising a six sided neck, which is preferably tapered slightly toward its upper end. The spring with its attached head piece may be swung back and forth and sidewise from the bracket 11, and its upper end may be turned, to increase or decrease tension as may be found desirable. Detachably secured to said head piece 13, is a door engaging lever 17, which also serves as a lever for winding up the spring and increasing its tension or torsion. Said lever 17, has a straight handle portion 18, arranged to bear against the side of the door, and at the end of said handle is a finger piece or grip 19, which extends outward from the handle and door, whereby it may be taken hold of in adjusting the tension of the spring. On the other end of said handle is formed a socket member 20, having a cylindrical socket 21, in its lower side for the reception of the upper end of the spring and body portion of the head piece 13, and above said socket 21, is an aperture 22, formed coaxial with the socket 21, and having the same contour as the tapered many sided neck of the head piece; it is here shown as hexagonal in form. This furnishes a detachable connection between the head piece and lever for non-rotatively connecting the one with the other, whereby the lever may be drawn backward to tighten the tension on the spring, and whereby the spring may act to force the handle end of the lever against the door in closing the same and holding it in closed position.

Projecting out from the socket member 20, of the lever 17, is a lug 23, which extends approximately in line with the handle of the lever, but on the opposite side of the socket member and near the rear edge thereof. Preferably said lug is round and curved forward slightly as shown in Fig. 2. The lever 17, is detachably secured to the door by said lug and a screw eye 24, into which the lug is inserted, said screw eye being screwed into the door near its hinged edge. Said screw eye also acts as a fulcrum for the lever 17, to turn upon in attaching the lever to the door after the spring has been wound up. If desired the lever may be formed with a transverse narrow slot 25, near the finger piece, through which may extend a screw eye 26, which is screwed into the door, and the eye portion of said screw eye may be turned at right angles to said slot to furnish additional attaching means for the lever.

In use, the parts are attached to the jamb and door as above set forth. To increase the tension, the screw eye 26, is first turned

parallel with the slot 25, and the handle of the lever 17, swung outward with the screw eye 24, as its fulcrum, and the lug withdrawn therefrom. The lever may now be detached from the head piece of the spring, and the upper end of the spring swung forward far enough to permit the handle to extend between the head piece and door. The socketed end of the lever is then placed upon the head piece with the many sided walls of the aperture 22, in engagement with the many sided neck, 16, of the head piece, the handle projecting toward the door. The handle is then rotated upon the axis of the coiled spring as a center, thereby increasing the tension or torsional effect of the spring; the lug 23, is then inserted in the screw eye 24, whereupon the spring acts to swing the handle portion of the lever against the door. The screw eye, 26, may now be turned at right angles to the slot 25, thereby preventing accidental detachment of the lever from the door. The spring effectively closes the door when opened and the degree of tension may be varied by applying the hexagonal aperture 22, at various places on the hexagonal neck 16, of the head piece.

It is to be noted that the door spring may be made for right and for left hand swinging doors by making right and left levers and making right and left hand coiled springs.

I claim as new and desire to secure by Letters Patent:

1. A door spring comprising a coiled torsion spring, the lower end of which has an approximately horizontal arm, a bracket, in which said arm is rotatively seated, adapted to be secured to a door jamb, a head piece extending into the hollow of the upper end of said coiled spring and non-rotatively secured thereto, said head piece having an upwardly extending many sided neck portion, a door closing lever having a handle adapted to engage the side of the door, and a socket portion fitting over the head piece and having a many sided aperture for the reception of the neck portion thereof, said lever having also a lug projecting out from said socket member and arranged to engage a fastening device secured to the door; substantially as described.

2. A door spring comprising a coiled torsion spring, the lower end of which has an approximately horizontal arm, a bracket, in which said arm is rotatively seated, adapted to be secured to a door jamb, a head piece extending into the hollow of the upper end of said coiled spring and non-rotatively secured thereto, said head piece having an upwardly extending many sided neck portion, a door closing lever having a handle adapted to engage the side of the door, and a socket portion fitting over the head piece and having a many sided aperture for the reception of the neck portion thereof, said lever having also a lug projecting out from said socket member, and arranged to engage a screw eye secured to the door, and said handle having a slot adapted for the reception of a second screw eye secured to the door.

3. A door spring comprising a coiled torsion spring, the lower end of which has a transversely extending arm, a bracket, in which said arm is rotatively seated, adapted to be secured to a door jamb, a head piece extending into the hollow of the spring at its upper end, and non-rotatively secured thereto, said head piece having an upwardly extending hexagonal neck portion, a door closing lever having a handle adapted to engage the side of a door, and a socket portion fitting over the upper end of the spring, said socket portion having a hexagonal aperture for the reception of said hexagonal neck, and a detachable connection between said lever and door.

October 25, 1915.

MAX H. DAENITZ.