O. GUNTHER.

DOOR SPRING.

APPLICATION FILED APR. 24, 1908.

920,323.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

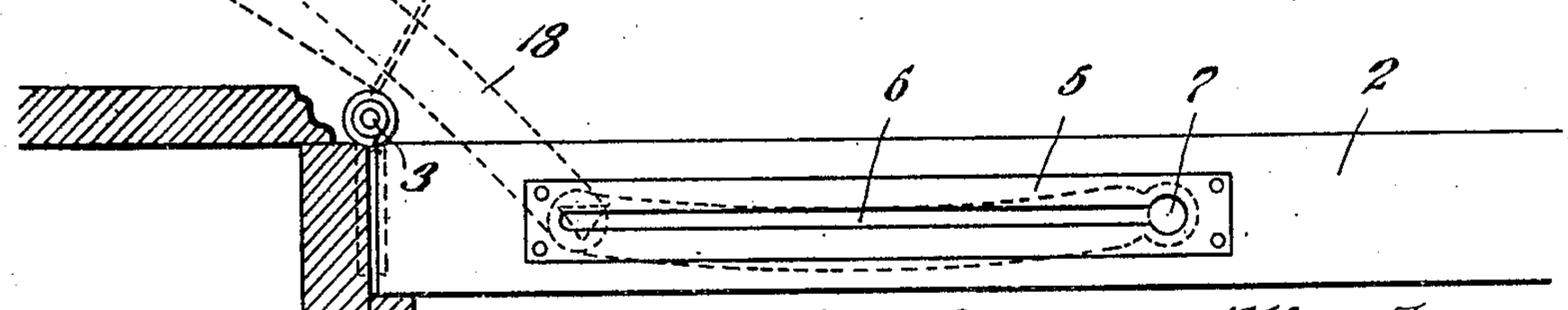


Fig. 3.

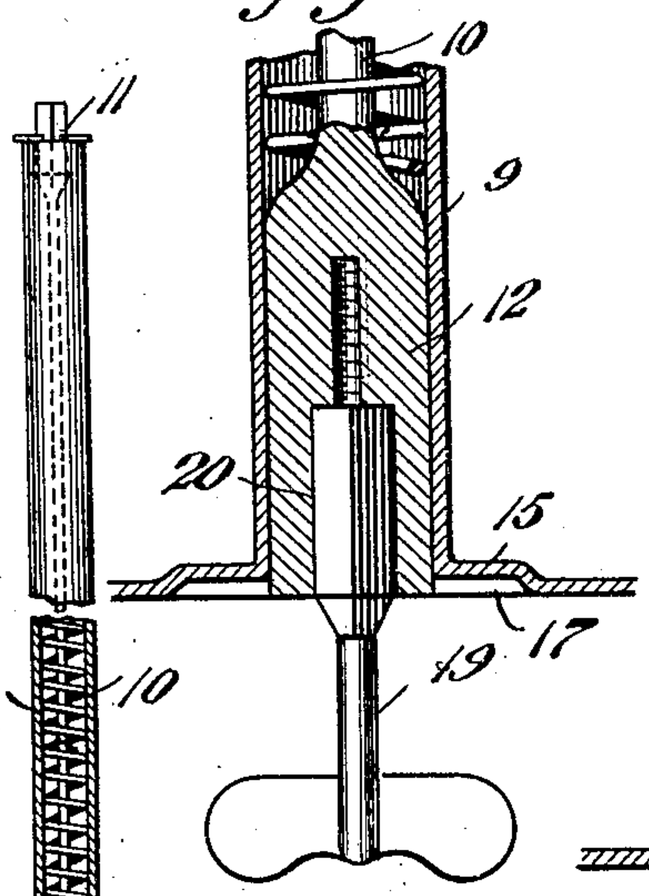


Fig 4.

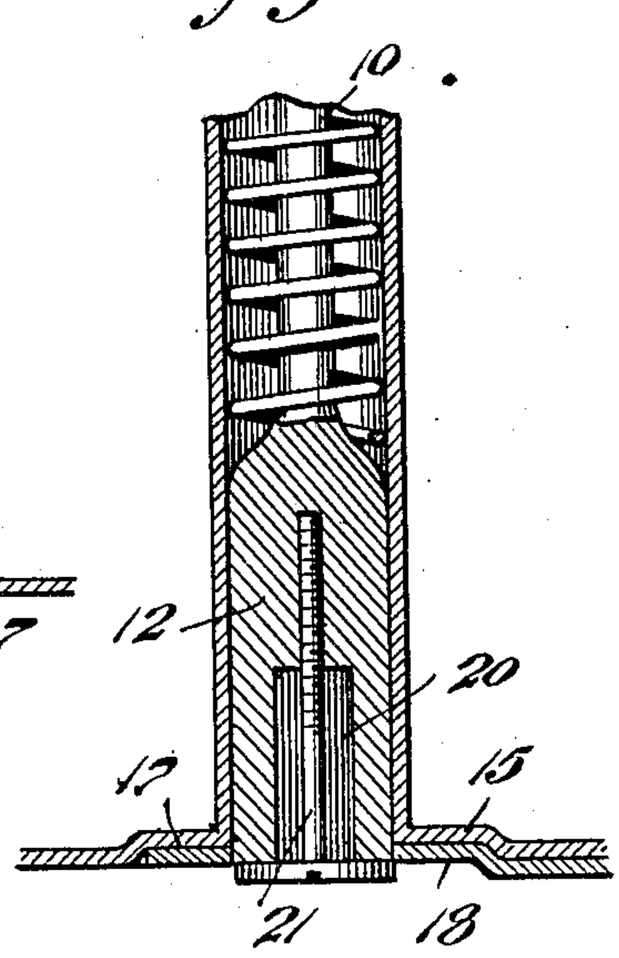
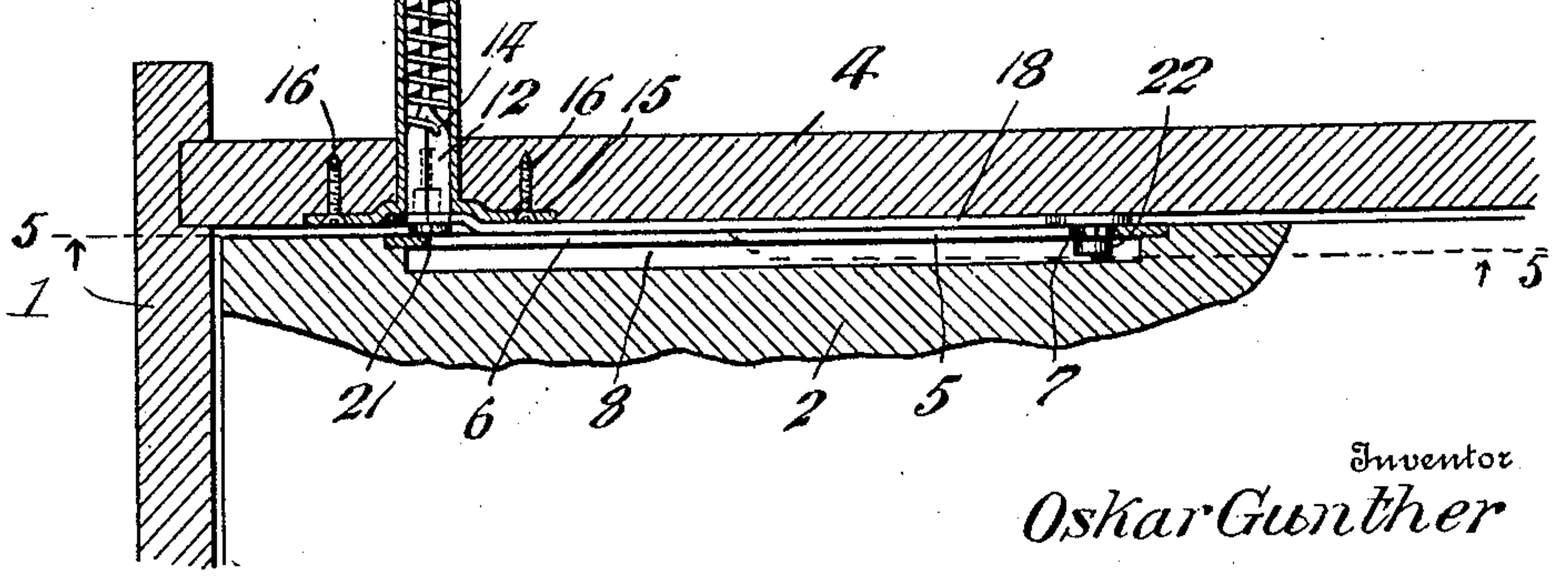


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 5.

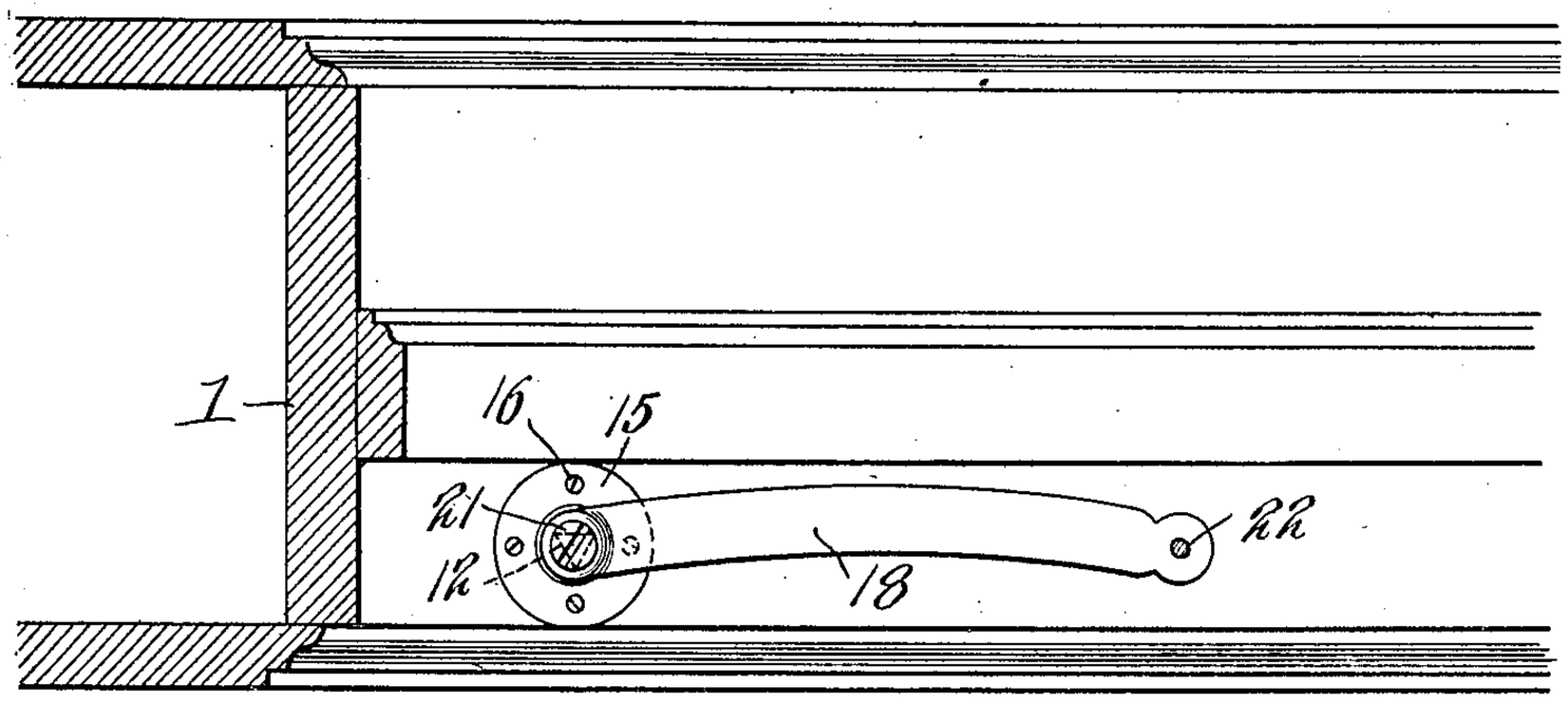
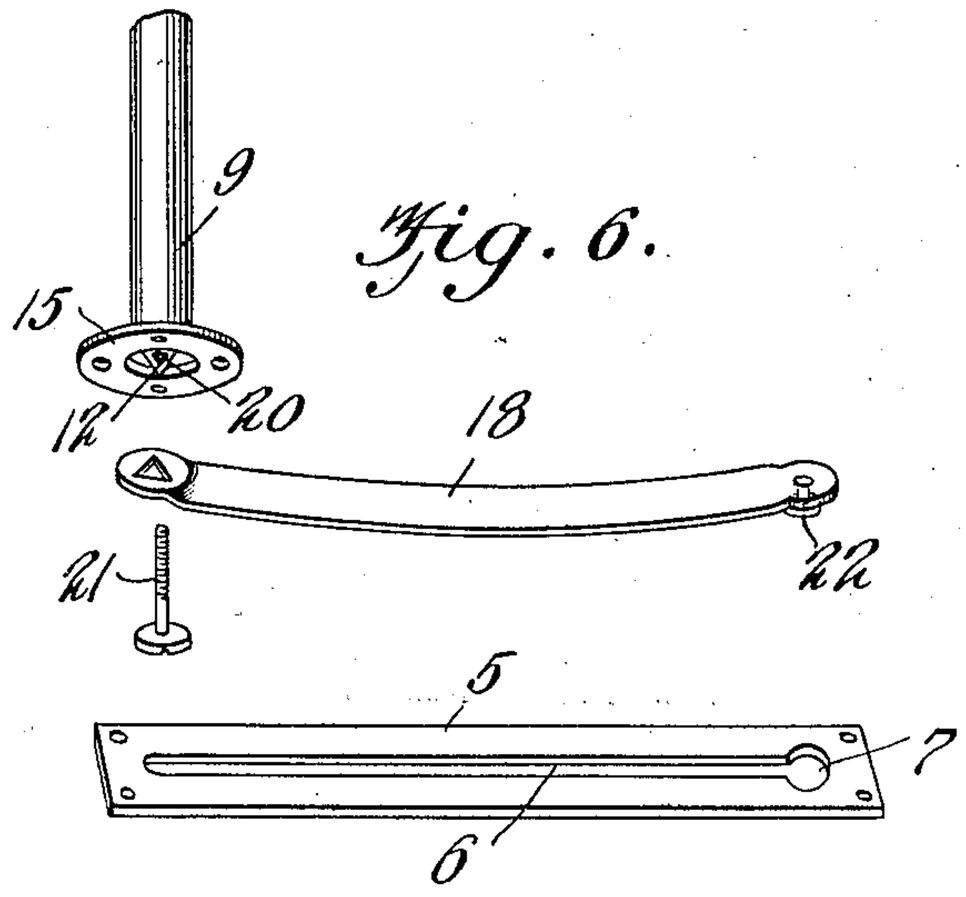


Fig. 6.



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DOOR-SPRING.

No. 920,323. Specification of Letters Patent. Patented May 4, 1909.

Application filed April 24, 1908. Serial No. 429,088.

To all whom it may concern:

Be it known that I, OSKAR GUNTHER, a citizen of the United States of America, residing at Kellogg, in the county of Shoshone and State of Idaho, have invented new and useful Improvements in Door-Springs, of which the following is a specification.

This invention relates to door springs, and one of the principal objects of the same is to provide a door spring for keeping a door closed which will be entirely out of sight and which will operate smoothly and efficiently for its purpose.

Another object of the invention is to provide means for adjusting the tension of the spring whenever required.

These and other objects may be attained by means of the construction illustrated in the accompanying drawing, in which,—

Figure 1 is a plan view illustrating the top of a door and the door spring in dotted lines, while the door frame is shown in section. Fig. 2 is a partial vertical section of the upper portion of the door frame, showing the spring connected thereto and a fragment of the door. Fig. 3 is an enlarged vertical section of the lower end of the spring casing and showing a key inserted in the enlarged end of the spring rod and a key connected thereto for winding the spring. Fig. 4 is a similar view, showing the key removed and the slotted buffer plate secured to the spring rod. Fig. 5 is a horizontal section on the line 5—5 of Fig. 2, looking in the direction indicated by the arrows. Fig. 6 is a detail perspective view of parts of the door spring.

Referring to the drawing for a more specific description of my invention, the numeral 1 designates the door casing; 2 is the door hinged at 3 to said casing, and 4 is the top of the door casing.

Secured to the upper edge of the door in a suitable recess formed therein is a plate 5 provided with a longitudinal slot 6 having an enlarged aperture 7 at one end thereof, said plate being set flush with the upper edge of the door in the recess 8. Secured in the top of the door frame is a spring casing or tube 9 in which a spring rod 10 extends from end to end, said spring rod having an enlargement 11 at one end and a similar enlargement 12 at the other end thereof. A spiral spring 13 encircles the rod 10, said spring being secured at 14 to the enlargement 12, while the opposite end of the spring is secured to the casing 9. The base plate 15 of the tube 9 is secured by screws 16 to the door frame 4, and said base plate is provided with a depression 17 (Fig. 3) in which is seated the end of the sliding plate 18, said plate being bent near its end to rest in the depression 17 in the base plate 15, as shown more particularly in Fig. 4.

A triangular keyhole is formed in the enlargement 12, and a key 19 may be inserted in this keyhole for adjusting the tension of the spring 13. The key is first passed through the hole in the plate 18, and after the spring has been wound up the enlargement 12 is connected with the plate 18, and thus the spring is prevented from unwinding. When the key has been removed from the keyhole 20, a screw 21 connects the sliding plate 18 with the spring casing and holds the spring 13 in tension, as shown more particularly in Fig. 4. The sliding plate 18 is provided with a head 22 which fits within the aperture 7 at the end of the slot 6.

The operation of my invention may be briefly described as follows: When the door 2 is swung open on its hinges 3 the spiral spring 13 is wound up, and the reaction of said spring under tension will close the door, the head 22 of the sliding plate 18 moving in the slot 6. The sliding plate 18 is slightly curved, as shown in Figs. 5 and 6.

From the foregoing it will be obvious that my door spring is simple in construction, is practically out of sight, means being provided for readily adjusting the tension of the spring, and the entire device is inexpensive to manufacture.

Having thus described the invention, what is claimed as new, is:—

1. A door spring comprising a casing adapted to be connected to the top of a door frame and projecting vertically therefrom, a spring, a spring rod having enlarged ends secured in said casing, one of said ends having a keyhole therein to adjust the tension of the spring, a plate connected to the spring rod, and a slotted plate secured to the door, the former being connected to and adapted to slide upon the other.

2. A door spring comprising a casing seated in the upper portion of the door frame and projecting vertically therefrom, a spring within the casing, a rod having enlarged ends to one of which one end of the spring is connected, the other end being connected to the casing, a curved plate having a head provided with a reduced portion, and a slotted

plate secured to the door and provided with an enlarged aperture to accommodate the head.

3. A door spring comprising a casing, a rod mounted in said casing, a spring connected at one end to said rod and having its other end connected to said casing, a plate connected to the rod at one end and having a head at its opposite end, a slotted plate secured to the top of the door and provided with an enlarged aperture therein, and a curved plate having a head fitted in said enlarged aperture and adapted to slide in said slot.

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

OSKAR GUNTHER.

Witnesses:
F. J. SCHULTZE,
E. J. HORNIBROOK.