

(No Model.)

C. BAYER.
DOOR SPRING AND CHECK.

No. 578,962.

Patented Mar. 16, 1897.

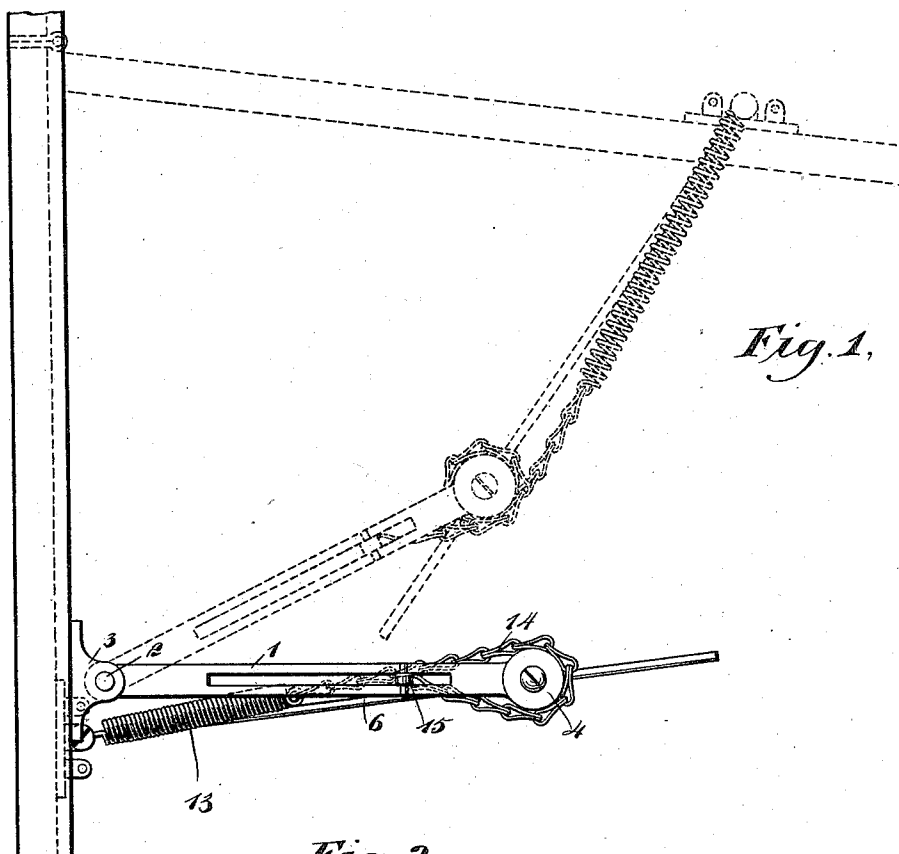


Fig. 2.

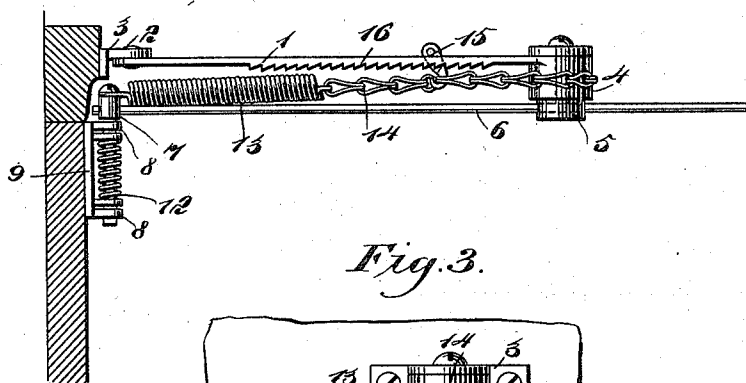
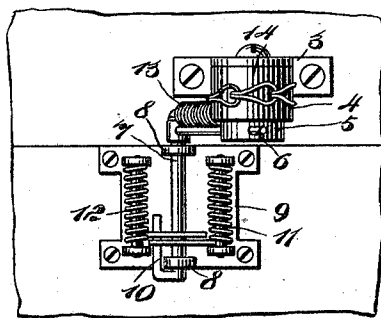


Fig. 3.



WITNESSES:

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DOOR SPRING AND CHECK.

SPECIFICATION forming part of Letters Patent No. 578,962, dated March 16, 1897.

Application filed January 5, 1897. Serial No. 618,065. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN BAYER, of New York city, in the county and State of New York, have invented a new and Improved Door Spring and Check, of which the following is a full, clear, and exact description.

This invention relates to springs for closing doors and checks to prevent slamming of the doors; and the object is to provide a simple device for this purpose in which there are but few parts and in which the use of air or liquid as in ordinary door-springs is avoided.

I will describe a door spring and check embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a top plan view of a door spring and check embodying my invention. Fig. 2 is a side elevation thereof, and Fig. 3 is a front elevation.

The device comprises a swinging arm 1, having a pivotal connection 2 with a bracket 3, secured to the door-casing above the door. The free end of the arm 1 is provided with a tubular barrel 4, within which is mounted to rotate a block 5. Extended through a transverse hole in the block 5 is a door-operating rod 6, connected at one end to a vertical shaft 7, having bearings in lugs 8, extended from a plate 9, secured to the door. The lower end of the shaft 7 is turned outward and then upward, forming an arm 10, designed to be engaged by the ends of springs 11 and 12, which I term the "check-springs." These check-springs are coiled in opposite directions and are respectively mounted on rods attached to lugs extended from the plate 9. Of course one end of each spring 11 and 12 will be attached to the plate 9.

To the upper end of the shaft 7 is secured one end of the main door-spring 13. The other end of said spring 13 is attached to a chain 14, which extends around the barrel 4 and engages with a dog 15, adjustably mounted on the arm 1. As here shown, the arm 1 is provided with a longitudinal slot through which the dog 15 projects, and the upper end of the dog has laterally-extended pins to engage upon the upper surface of the arm. The

lower side of the arm at each side of the slot is provided with rack-teeth 16, with which projections on the dog 15 will engage.

In operation as the door is swung to an open position the arm 1 will turn on its pivot and the rod 6 will be carried around with its pivot-block 5. This movement will coil the chain 14 around the barrel 4, expanding the spring 13. Upon releasing the door the spring 13 will contract and draw the door closed. Of course during the movement of the door the shaft 7 will be rotated, and when the door is nearly closed the springs 11 and 12 will act as a check by bearing upon the arm 10 of the shaft and prevent slamming. These springs 11 and 12 will aid the main closing-spring 13 somewhat in drawing the door closed. The tension of the spring 13 may be adjusted by moving the dog 15 along the arm 1.

It will be noted that this device may be arranged on either a right-hand or left-hand door, and, further, that there is no danger of its destruction by water or frost, as often happens with other door-springs.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A door spring and check, comprising a swinging arm adapted to be mounted on a door-casing, a barrel on the free end of said arm, a block mounted to rotate in said barrel, a rod extended through said block, a shaft designed to rotate on a door and with which said rod is connected, a spring connected at one end to said shaft, a chain extended from the other end of said spring around the barrel on the arm, and means for connecting the end of the chain to the arm, substantially as specified.

2. A door spring and check, comprising a swinging arm designed to be supported on the door-casing, a tubular barrel on the free end of said arm, a block mounted to rotate in said barrel, a rod having connection with said block at one end, a vertical shaft to which the other end of said rod is attached, a plate on which said shaft is mounted to rotate, oppositely-coiled springs on said plate and having their ends connected with an upwardly-turned portion of the shaft, a mainspring attached at one end to the shaft, a chain extended from the other end of said spring

around the barrel, and a fastening device for said chain adjustable along the swinging arm, substantially as specified.

3. A door-check comprising a swinging arm
5 having a longitudinal slot and rack-teeth on its lower side, a block mounted to rotate in a barrel on the free end of the arm, a rod having connection at one end with said block, a rotary shaft designed to be mounted upon a
10 door and with which the opposite end of said shaft engages, oppositely-coiled springs having their ends in engagement with an upwardly-turned portion of the shaft, a main-

spring attached at one end to the shaft, a chain extended from the opposite end of said
15 mainspring around the barrel, and a dog to which the end of said chain is attached, the said dog being movable in a slot formed in the arm and having projections to engage the rack-teeth on the arm, substantially as specified.
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Witnesses:

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