

No. 652,606.

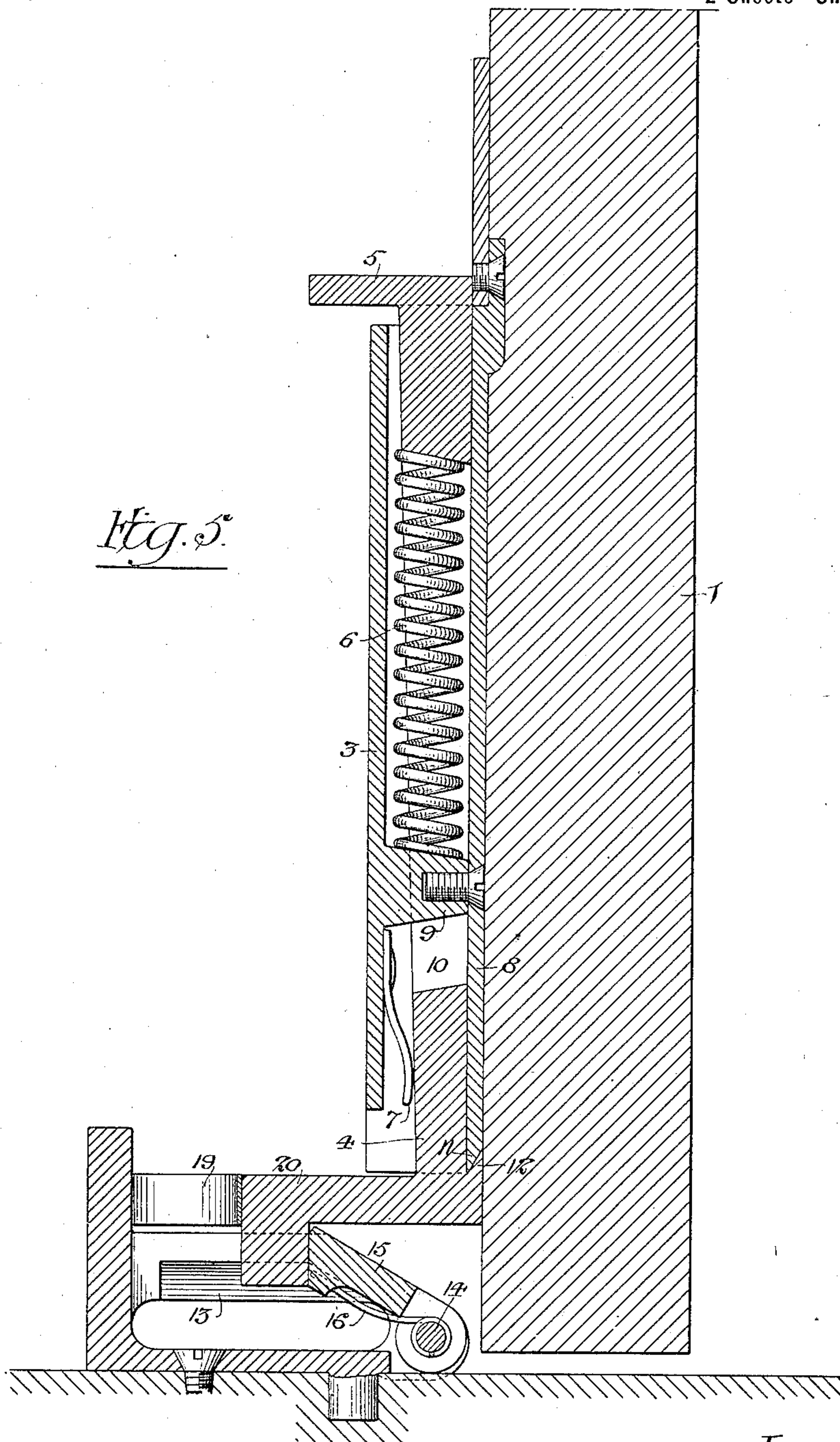
Patented June 26, 1900.

F. T. FIELD.
DOOR RETAINER.

(Application filed Mar. 10, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:-

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UNITED STATES PATENT OFFICE.

FRANK T. FIELD, OF PHILADELPHIA, PENNSYLVANIA.

DOOR-RETAINER.

SPECIFICATION forming part of Letters Patent No. 652,606, dated June 26, 1900.

Application filed March 10, 1900. Serial No. 8,148. (No model.)

To all whom it may concern:

Be it known that I, FRANK T. FIELD, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Door-Retainers, of which the following is a specification.

My invention relates to that type of door-retainers which embody a bolt or keeper intended especially for holding in an open position a door which is acted upon by a spring or springs tending to close it automatically, one object of my invention being to so construct said bolt and keeper that they may be
10 more efficient in the action of being held in operative when it is not desired to hold the door in the open position and caused to engage with each other only when it is desired to hold the door open, a further object being to provide for the ready release of the bolt
15 from the keeper by a pull upon the door.

With these objects in view my invention consists in the novel construction hereinafter described and claimed.

These objects I attain in the manner hereinafter set forth, reference being had to the
25 accompanying drawings, in which—

Figure 1 is a vertical sectional view of my improved door-retaining bolt and keeper, showing the bolt in position for engagement
30 with the keeper in order to hold the door in the open position. Fig. 2 is a similar view showing the bolt adjusted so as not to engage with the keeper. Fig. 3 is a sectional plan view on the line *a a*, Fig. 1. Fig. 4 is a transverse section on the line *b b*, Fig. 2, and Fig.
35 5 is a vertical section illustrating a special construction of the retaining-bolt.

In connection with that class of doors which are normally closed by means of a spring it
40 is desirable to use a device which, while it will not ordinarily interfere with the automatic closing of the door by the spring, can be readily adjusted to such a position as to hold the door open when desired, the bolt being released, however, by a pull upon the
45 door with the same facility as from an ordinary spring catch or retainer. Such a device is especially available for use in connection with the doors of railroad-cars, boats, or
50 places of public resort, and the improved device forming the subject of my invention is intended to meet these requirements.

On reference to the drawings the lower portion of a door is represented at 1 and part of a deck or floor at 2, the door having secured
55 to it a box or casing 3, in which is vertically guided a bolt 4, having at the top a projecting head 5 and acted upon by two springs 6 and 7, the spring 6 tending to force the bolt upward in the casing and the spring 7 tending
60 to force the bolt inwardly or toward the back plate 8 of the casing, which lies against the face of the door, a transverse stud 9 of the casing entering a slot 10 in the stem of the bolt and serving to limit the upward movement of said bolt in the casing. The lower
65 end of the back plate 8 of the bolt-casing is beveled, as shown at 11, and when the bolt is depressed engages with a beveled shoulder 12 on said bolt, as shown in Fig. 1, the two beveled
70 surfaces being held in engagement with each other by the upward pressure of the spring 6 upon the bolt.

Secured to the floor 2 is a box or casing 13, having a transverse pin 14, to which is hung
75 the swinging keeper 15 for engaging with the bolt 4 when the latter is depressed, said keeper having a beveled upper face and being normally held in the elevated position shown in Figs. 1 and 2 by the action of a
80 spring 16, the upward movement of the keeper being limited by contact of lugs 17 thereon with shoulders 18 upon the opposite sides of the box or casing 13. To the back of said
85 box or casing 13 is secured a spring 19, so disposed that when the door is opened the spring will bear upon the casing 3 and will prevent the rattling of the door, but will permit a slight further opening movement when pressure is exerted.
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In the normal operation of the door the bolt 4 occupies the elevated position shown in Fig. 2, so that the door can be freely closed by the action of its spring, the keeper 15 failing to retain the door in the open position. When
95 it is desired to hold the door open, however, the bolt 4 is depressed against the action of the spring 6 until its shoulder 12 is caused to engage with the beveled lower end 11 of the plate 8 of the bolt-casing, such downward
100 movement being readily imparted to the bolt by pressure of the hand or foot upon the head 5 at the upper end of said bolt. When the door having the bolt thus depressed is swung

open past the keeper 15, the latter is depressed by the action of the lower end of the bolt upon its inclined or beveled upper face and then rises in front of the bolt, as shown in Fig. 1, so as to prevent the closing of the door. A pull upon the door in the direction of the arrow 1, Fig. 1, will first cause a depression of the bolt 4 by reason of the wedge-like action of the beveled lower end 11 of the plate 8 upon the beveled shoulder 12 of the bolt, and as soon as these surfaces are free from engagement with each other the bolt will be drawn up into the casing 3 by reason of the lifting action of the spring 6, the door being then free to close. The beveled faces of the bolt and retaining-plate 8 can be freed from engagement with each other more readily by means of a sudden jerk upon the door 1 than by a steady pull upon the latter, and the amount of play of the door which is permitted by the spring 19 permits such jerking movement of the door. If the spring 7 is very stiff, a horizontal shoulder on the bolt 4 for engaging with the flat lower end of the plate 8 of the bolt-casing might be used instead of the beveled shoulder; but the latter construction is preferred as the more reliable of the two. When the bottom of the door is close to the floor, the bolt 4 may have an angular projection 20 at the lower end, as shown in Fig. 5, so that it will engage with the keeper before the door reaches the latter, it being impossible in this case for the door to swing over the keeper.

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

1. The combination of a door having a cas-

ing with sliding bolt, a spring for moving said bolt out of position to engage with a keeper, 40 and beveled shoulders upon the bolt and casing for retaining the bolt in position to engage with the keeper, whereby the bolt must move in opposition to the action of the spring in order to free said shoulders from engagement, 45 substantially as specified.

2. The combination of a door with a bolt-casing thereon, a bolt in said casing, a spring for retracting the bolt, a shoulder on the bolt for engaging with a shoulder on the casing, 50 and a second spring for maintaining said shoulders in engagement with each other, substantially as specified.

3. The combination of a door having a casing with sliding spring-actuated bolt and releasable means for holding said bolt in the projected position, with a casing having a swinging spring-actuated keeper and a buffer-spring for maintaining the engaging surfaces of the bolt and keeper in contact, sub- 60 stantially as specified.

4. The combination of the swinging keeper, the door, a bolt-casing thereon, the bolt having an angularly-projecting lower end, whereby the bolt can engage with the keeper before 65 the door swings over the same, and a buffer-spring for maintaining the engaging surfaces of the bolt and keeper in contact, substantially as specified.

In testimony whereof I have signed my 70 name to this specification in the presence of two subscribing witnesses.

FRANK T. FIELD.

Witnesses:

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