No. 858,905. PATENTED JULY 2, 1907.

E. J. PASSINO.

DOOR CHECK.

APPLICATION FILED MAY 28, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

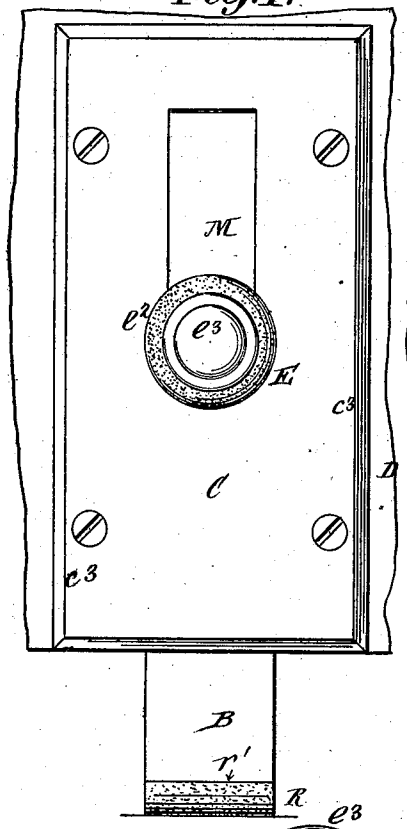


Fig. 2.

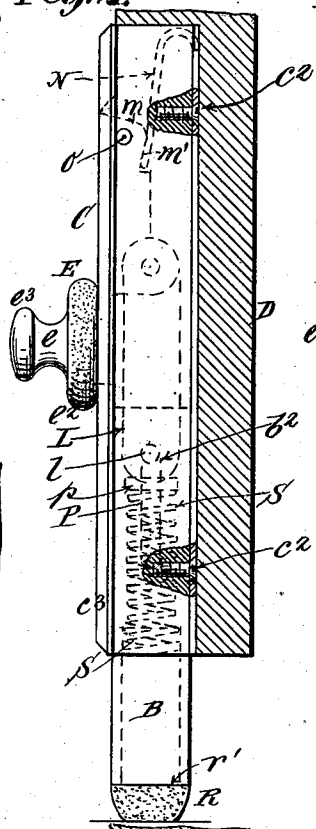


Fig. 3.

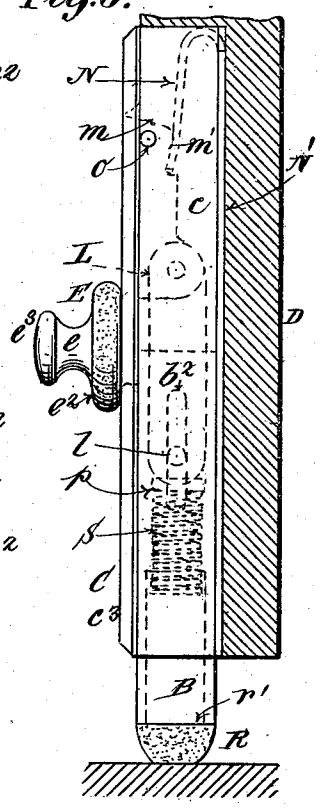
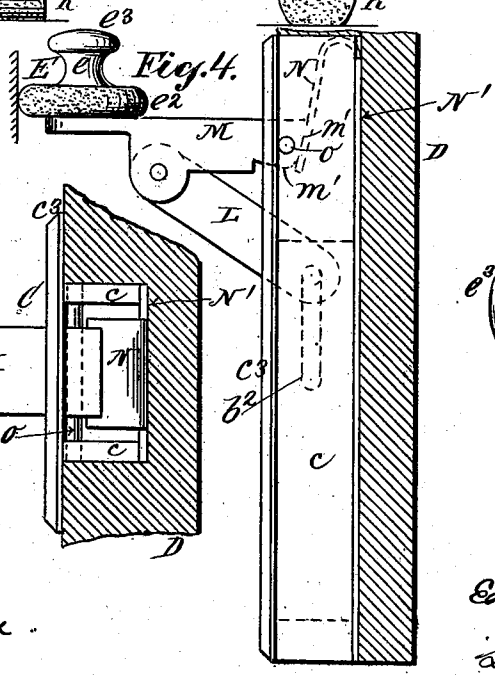


Fig. 4.



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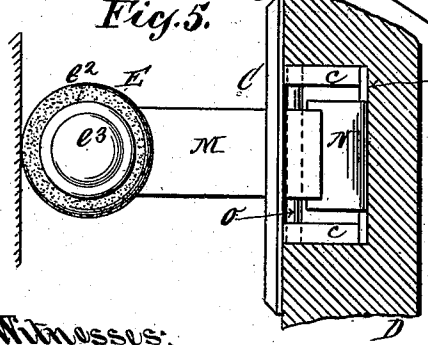

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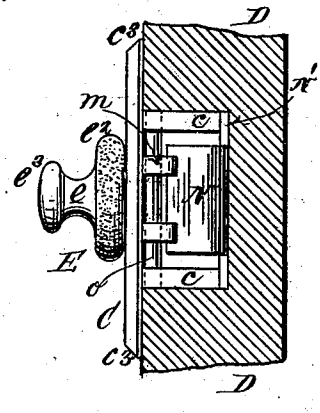

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Inventor:
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By his Attorneys
Leo. Wm. Watts

THE NORRIS PETERS CO., WASHINGTON, D. C.

No. 858,905. PATENTED JULY 2, 1907.

E. J. PASSINO.

DOOR CHECK.

APPLICATION FILED MAY 28, 1906.

2 SHEETS—SHEET 2.

Fig. 7.

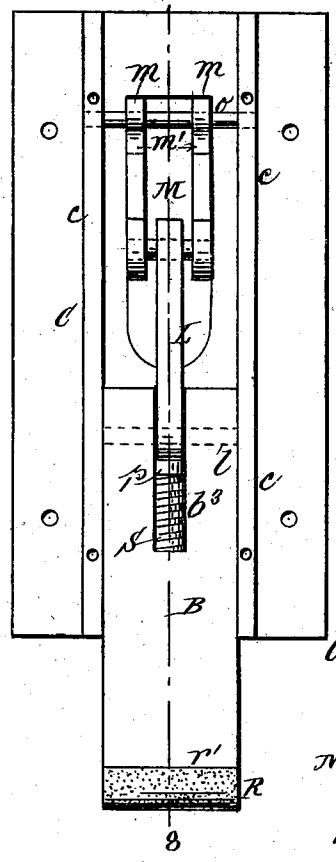


Fig. 8.

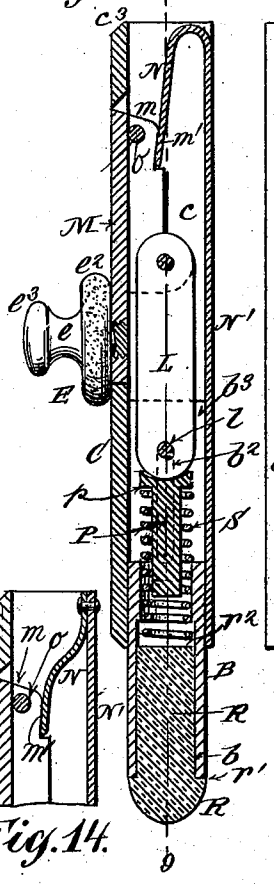


Fig. 9.

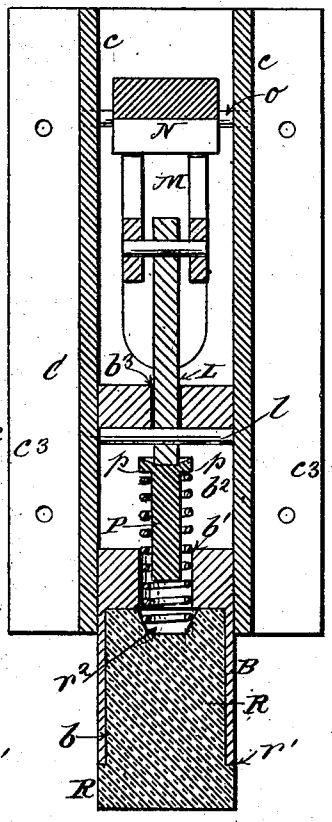


Fig. 14.

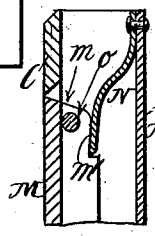


Fig. 13.

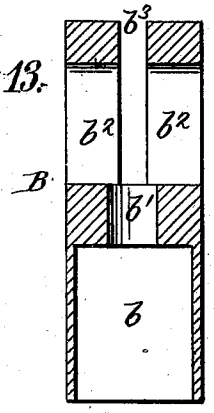
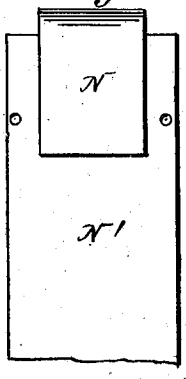


Fig. 15.



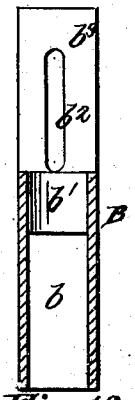


Fig. 12.

Fig. 10.

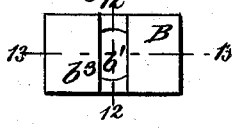
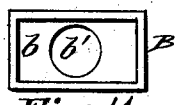


Fig. 11.



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THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD J. PASSINO, OF MIDDLETOWN, NEW YORK.

DOOR-CHECK.

No. 858,905. Specification of Letters Patent. Patented July 2, 1907.

Application filed May 28, 1906. Serial No. 319,011.

To all whom it may concern:

Be it known that I, EDWARD J. PASSINO, a citizen of the United States, residing at Middletown, Orange county, and State of New York, have invented certain new and useful Improvements in Door-Checks, of which the following is a specification.

My present invention is an improvement on the form of door check disclosed in Letters Patent No. 755,386 issued to me March 22, 1904, and like that device is designed to afford simple but effective means whereby a door may be conveniently held or stopped under various conditions of use, the device embodying the three-fold function of a bolt, a holder, and a check, whereby the door may be secured in position when shut, held in any desired position when open, and checked by a buffer if swung against the wall or other opposed surface.

The invention consists in the special combination and arrangement of parts hereinafter described and claimed specifically, the distinguishing features being the interposition of a spring between the bolt and its connection in such manner that variations in floor levels are compensated for automatically, and in the provision of means whereby the operative parts are locked in either the extended or retracted position substantially as hereinafter set forth.

In the accompanying drawings, Figure 1, is a front elevation of my door controlling device, applied to the lower edge of the door and illustrating its use as a door stop; Fig. 2, is a side elevation of the device taken at right angles to Fig. 1, the door and a portion of the side wall of the casing being shown in section to show the securing of the back plate to said casing; Fig. 3, is a side elevation similar to Fig. 2, showing the device used as a door stop where the floor surface is on a higher plane than that shown in Figs. 1 and 2; Fig. 4, is a sectional view of the door showing a side elevation of my device with the manipulating lever drawn out horizontally, and the buffer in contact with a side wall or other opposed surface; Fig. 5, is a plan of the device in the position shown in Fig. 4, the door being shown in horizontal section; Fig. 6, is a horizontal section of a portion of the door, showing a plan of my device with the manipulating lever down or closed; Fig. 7, is a rear elevation of the device, the rear plate being removed and the bolt being pressed downward to its full extent; Fig. 8, is a section upon plane of line 8—8—Fig. 7, with the rear plate in position; Fig. 9, is a section of the device upon plane of line 9—9—Fig. 8; Fig. 10, is a top view of the bolt; Fig. 11, is a bottom view thereof; Fig. 12, a section upon plane of line 12—12—Fig. 10; Fig. 13, is a section upon plane of line 13—13—Fig. 10; Fig. 14, is an elevation of the upper portion of the back plate, showing the latch spring formed integral therewith; Fig. 15, is a sectional view illustrating a modification in the construction of the latch spring.

C, is the front plate of the casing formed with the vertical ribs c, c, which constitute the side walls of said casing, and to which the back plate N′, is secured by screws c^2, or equivalent means. In the present structure the longitudinal edges c^3, of the front plate C, overlap the surface of the door D, instead of being countersunk therein as in my prior patent hereinbefore referred to, all the edges of said plate being beveled in front to afford a more neat and substantial appearance,— the overlapping flanges c^3, c^3, at the same time covering the mortise in the door D, and concealing any imperfection or irregularity in the form thereof, so that less skill is required in applying the device to the door.

B, is a bolt, the lower portion of which is formed with a socket or recess b, for the reception of the upper portion of a bearing block or cushion R, of rubber or other soft resilient material. The lower end of this bearing block R, is preferably though not necessarily semi-cylindrical in cross section, and is formed with shoulders r', for engagement with the lower edges of the bolt, as will be seen by reference more particularly to Figs. 8 and 9. The upper or inner end of the bearing block R, is preferably formed with a recess r^2, having convergent side walls as shown in Fig. 9,— said recess r^2, being formed for the reception of the lower end of the spiral spring S. This spring S passes through an opening b', in the center of the bolt B, its upper end engaging with shoulders p, upon a cylindrical plunger P, the body of which extends through the greater portion of the spring S, and acts to centralize and sustain the latter under all conditions of use.

The upper end of the plunger P, is held by the spring S, against the lower inner end of the link L, through which passes and to which is secured the transverse pin l, which extends laterally on either side of said link into the vertical grooves b^2, formed in the upper portion of the bolt B,—said pin performing the double function of affording a fulcrum upon which the link may be turned and also acting to guide, centralize, and preserve the alinement of parts when the bolt is pressed inward against the resistance of the spring S, as for instance, where the floor level is relatively high as illustrated in Fig. 3. The lower end of the spring S, pressing against the inclined sides of the recess r^2, formed in the upper end of the elastic bearing block R, compresses the latter against the adjacent sides of the socket or recess b, and thereby tends to limit the latter in position.

The upper end of the bolt B, is formed with the slot b^3, for the reception and play of the lower portion of the link L, which is pivotally connected to the bolt B, by the pin l, as before stated. The upper portion of the said link L, is pivotally connected with a manipulating

lever M,—the said manipulating lever M, and the link L, constituting practically a toggle joint by means of which the position of the bolt B, may be forcibly controlled in either direction according to the manner in which the lever M is manipulated.

The inner end of the manipulating lever M is pivotally connected to the back of the front plate C, and its outer end is provided with a buffer E, of any soft elastic material, preferably rubber. A convenient method of forming this buffer is to attach a stud e, to the end of the manipulating lever M, said stud e, being formed with an annular groove for the reception or retension of a ring of rubber e^2, as in my Letters Patent hereinbefore referred to,—the end of the stud e, being formed with a knob e^3, to facilitate the manipulation of the lever M.

The inner end of the manipulating lever M, adjacent to its supporting pivot o, is formed with cam bearing surfaces m and m', for engagement with the end of the latch spring N, which yields under pressure to admit of the forcible change in the position of the parts, but which locks them temporarily in either position. A convenient way of forming this latch spring N, is to make it integral with the back plate N′, although I do not restrict myself to this specific construction, since the said latch spring N, may be independently formed and riveted to said back plate as indicated in Fig. 15, or to any other part of the casing with like results.

The back plate N′, is secured to the vertical ribs c, c, on the back of the plate C, by screws c^2, or equivalent means, said back plate N′, confining the bolt B, between it and said ribs, and the rear of the plate C, as will be understood by reference to the drawings.

Thus constructed my device readily adapts itself automatically to any variations in floor level, the spring S, compensating for such variations and at the same time insuring a firm contact of the cushion R, with the opposed surface. This I have found to be a great improvement upon my prior construction which was adapted only to doors the sills for which were of a prescribed height, whereas in practice such sills vary in heights, which is equivalent to saying that the floors are not invariably the same distance from the bottom of the door, with the lower edges of which the lower end of my device is supposed to be flush when the bolt is retracted, as shown in Fig. 4. Furthermore I find in practice that it is expedient in order to avoid any looseness or play, to lock the parts in either of their prescribed positions, by means of the latch spring N.

What I claim as my invention and desire to secure by Letters Patent is,

1. In a door check, the combination with the casing, of a bolt, a latch spring, a toggle joint confined within the door for actuating said bolt, the inner end of the manipulating lever of said toggle being formed with cam bearing surfaces for contact with said latch spring, and a coiled spring in said bolt interposed between it and the link of the toggle with which the bolt is connected, for the purpose described.

2. In a door check, the combination with the casing, of a bolt, a latch spring, a toggle joint confined within the door for actuating said bolt, the inner end of the manipulating lever of said toggle being formed with cam bearing surfaces for contact with said latch spring, and a coiled spring in said bolt interposed between it and a bearing plunger resting against the link of the toggle to which the bolt is connected, together with said bearing plunger, for the purpose described.

3. In a door check, the combination with the casing, of a bolt, a latch spring, a toggle joint confined within the door for actuating said bolt, the inner end of the manipulating lever of said toggle being formed with cam bearing surfaces for contact with said latch spring, formed in one piece with the back plate of the casing, and a coiled spring in said bolt interposed between it and the link of the toggle with which the bolt is connected for the purpose described.

4. In a door check, substantially such as designated, the combination with the casing, of the toggle joint, consisting of the manipulating lever M, and the link L, the latter formed with a transverse pin l, the spring S, interposed between said link L and the bolt B, said bolt formed with the longitudinal slots b^2, b^2, and b^3, and a resilient contact fitting into the lower end of said bolt, for the purpose set forth.

5. In a door check, the combination with the casing, of a bolt formed with longitudinal slots, a toggle joint for actuating said bolt formed with a link having a transverse pin fitting in said longitudinal slots in the bolt, said toggle joint also being formed with a manipulating lever having cam bearing surfaces for engagement with a latch spring, said latch spring, and a coiled spring in said bolt interposed between it and said link of the toggle to which it is coupled by the link pin, for the purpose described.

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Witnesses:
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