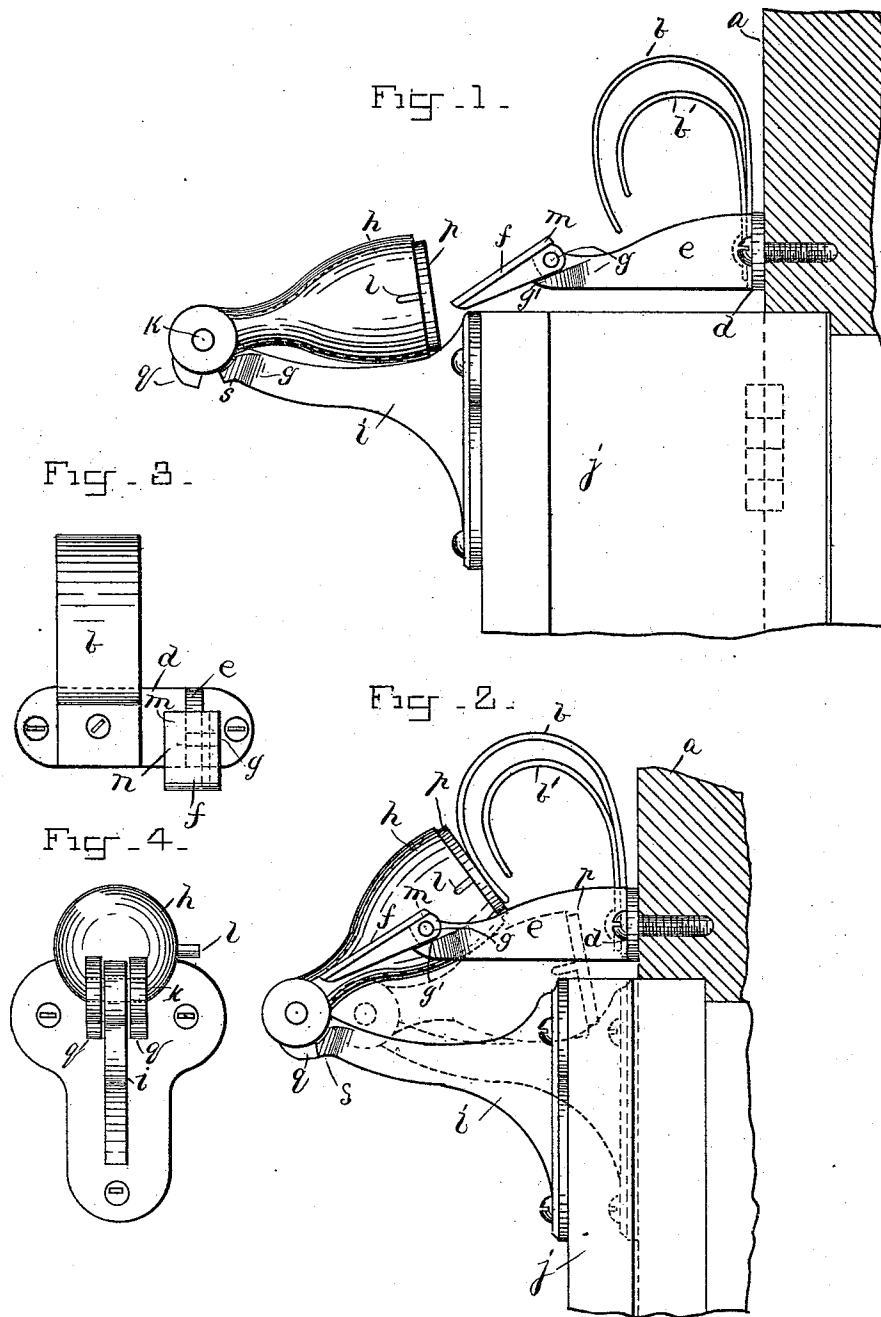


(No Model.)

J. J. HOLWELL.
DOOR CHECK.

No. 472,880.

Patented Apr. 12, 1892.



WITNESSES =

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UNITED STATES PATENT OFFICE.

JEREMIAH J. HOLWELL, OF NEW YORK, N. Y.

DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 472,880, dated April 12, 1892.

Application filed November 23, 1891. Serial No. 412,876. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH J. HOLWELL, a citizen of the United States, and a resident of New York city, in the county and State of New York, have invented new and useful Improvements in Door-Checks, of which the following is a specification.

My invention relates to the kind of door-checks in which the closing of the door is checked by a stop device coming in contact with a spring on which the momentum of the closing door is mainly or wholly expended just before the door comes to rest in the jamb and from which spring the stop then escapes and the door closes gently; and it consists in the improvements in the construction and arrangement of the same hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a transverse sectional elevation of part of a door-frame and edge view of a partly-closed door with my improved door-check applied and represented in side view, the checking stop or ram being a little short of the position for taking effect on the spring. Fig. 2 is a similar view showing the door more nearly closed, with the checking stop or ram in contact with the spring for checking the door and with dotted lines showing the position of the said stop or ram when the door is closed. Fig. 3 is a front elevation of the spring and a switch-guide that causes the checking stop or ram to have contact with the spring, and Fig. 4 is a front elevation of the checking stop or ram.

Directly over the doorway and on the face of the top part *a* of the door-frame I arrange a bent spring *b*, preferably made of a flat-metal strip, and in the so-called "C-spring shape," or substantially so, said spring extending upward from the attaching-plate *d*, fastened to the door-frame, to which plate it is secured at one end, and said spring being curved outward and downward, so as to support the free end in a pendent condition in front of said frame, and terminating a short distance higher than the top of the door. I prefer to provide another reinforcing member *b'* of said spring, adjusted to take effect a little later than the first member for graduating it, for more effectual action when the door

swings with the greater force of its whole range, or thereabout, the one member *b* being adapted for checking the lighter force of shorter range. The said attaching-plate *d* is also provided with a horizontally-projecting arm *e*, located a little lower than the pendent end of the spring and a short distance laterally from it, said arm reaching a little farther outward than the outward projection of the spring and at its outer end supporting the switch-guide *f*, pivoted at *g* on said arm and being supported in the inclined position shown by the shoulder *g'* of the arm to raise and guide the checking-ram *h* upward and direct it against the spring, said ram being carried on an arm *i*, projecting outward from the top of the door *j* under and in the vertical plane of the spring and at its outer extremity connected to the end of said arm by the pivot *k*, allowing the other to be so raised by the switch-guide for contact with the spring, said ram having a laterally-projecting arm *l* on one side, reaching over the inclined face of the switch-guide for thus raising the ram. It is to be noted that the upper end of this switch-guide terminates at such distance short of the pendent end of the spring, and its edge *n* on the side next to the ram and up which the arm *l* rides overhangs the supporting-arm, so that there is space allowing said arm of the ram to descend and permit the ram to fall sufficiently to pass under the spring when said ram is not held up by the friction of contact with the spring in the act of checking the closing door. It will also be seen that when the door closes so gently as not to need checking the ram will fall immediately on the escape of the arm *l* from the upper end *m* of the switch-guide without contact with the spring, so that the check then makes no resistance whatever and permits the door to close as freely as when no check is employed, thus enabling the door to be closed many times when a check always taking effect would otherwise prevent it.

The checking-ram normally rests on the upper edge of the supporting-arm *i*, as shown in full lines in Fig. 1 and in dotted lines in Fig. 2, with its arm *l* sufficiently higher than the lower end of the switch-guide to catch therein as the door swings and ride up the guide

to elevate the checking-ram for its thrust against the spring, which takes place when the movement is so quick as to bring them into contact before the checking-ram falls; 5 but when the door is closing slowly and does not require checking the ram falls before reaching the spring and makes no resistance. When the checking-ram does strike the spring, it is held thereon by friction until the force 10 of the impulse is so far spent that the friction will no longer hold the ram up and then falls to allow the door to close entirely. When the door swings open, the arm *l* passes under the upper end of the overhanging part *n* of 15 the switch-guide and swings it up clear of its way outward, and the guide falls again when the arm passes beyond it, ready for lifting the ram when the door closes.

The checking-ram is preferably provided 20 with a striking-head *p*, of cork or other suitable material, in the end having contact with the spring to avoid the sound which a metallic head would cause, and at the pivot end said ram has the stop-lugs *q*, and arm *i* has 25 opposing lugs *s* to prevent the ram from being thrust upward too high for proper contact with the spring when forcibly brought into contact with the switch-guide by the violent movement of the closing door.

30 I am aware of the Patent No. 347,526, in which there is a vertically-rocking cam device pivoted on the door-frame and projecting outward therefrom to be acted upon by the free end of a spring projecting upward from a 35 bracket attached to the side of the door, near the top, and depending for its successful action upon the recoil of the door to such extent that the spring entirely clears the greatest projection of the checking part of the cam, 40 reaching over the spring when in contact, without which the cam will not fall and allow the door to close, and which is not likely to

occur when the door closes gently, and I make no claim to such device.

In my device the ram has no contact what- 45 ever with the spring except when the door closes with such force as to require checking, and there is no possibility of the ram failing to fall and escape the spring, however slight the recoil may be, after contact of the check- 50 ing-ram with the spring, the relation being such that slight contact favors the fall of said head.

I claim—

The combination, in a door-check, of the C- 55 spring attached to the door-frame and having its free end pendent in front of said frame and terminating above the range of the top of the door, the switch-guide-supporting arm projecting from the said frame beyond and 60 laterally to said pendent end of the spring, the inclined switch-guide pivoted at the outer extremity of said arm for vertical play, and the checking-ram pivoted at its outer end on the extremity of the supporting-arm *i*, pro- 65 jecting from the door and supported on said arm with its striking-head ranging toward but lower than the pendent end of the spring and having the arm adapted for lifting the striking-head by the switch-guide when the 70 door closes, said switch-guide adapted to allow the ram-head to fall without contact with the spring when the door closes gently, and also adapted to be raised by said arm and allow it to pass when the door opens, substan- 75 tially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 7th day of March, 1891.

JEREMIAH J. HOLWELL.

Witnesses:

W. J. MORGAN,

W. B. EARLL.