

No. 767,167.

PATENTED AUG. 9, 1904.

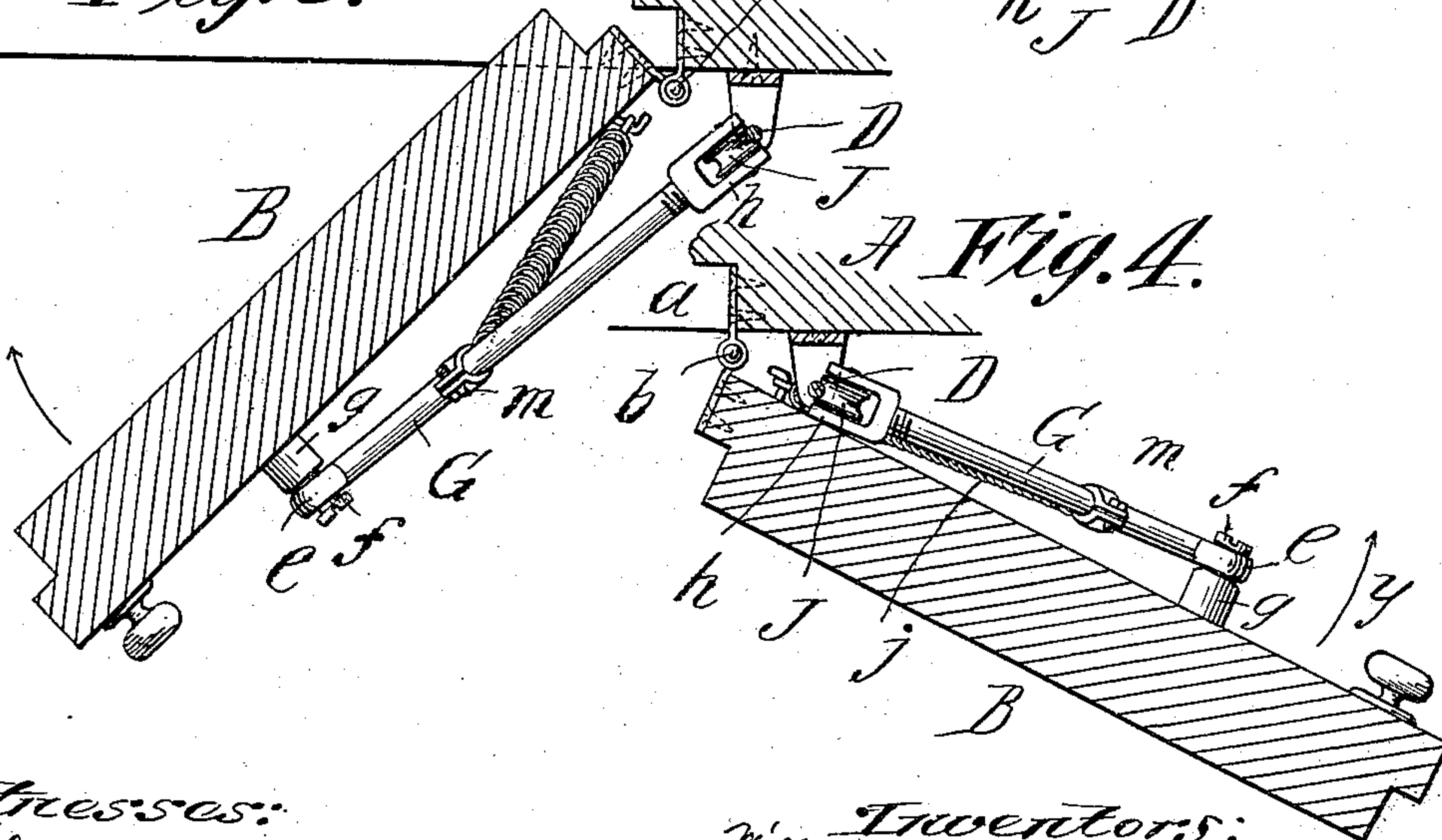
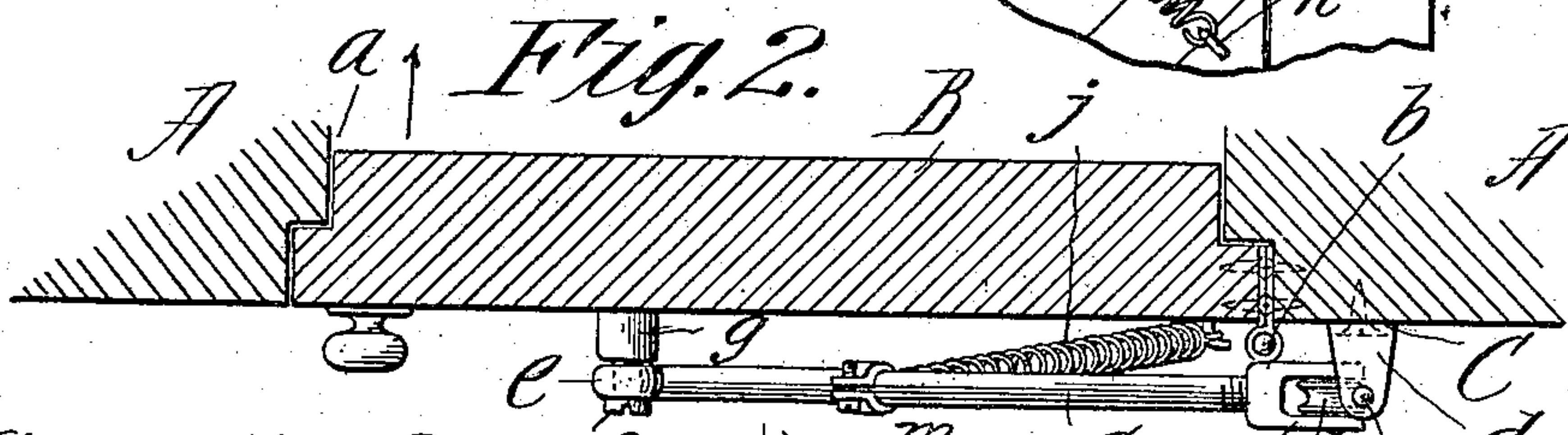
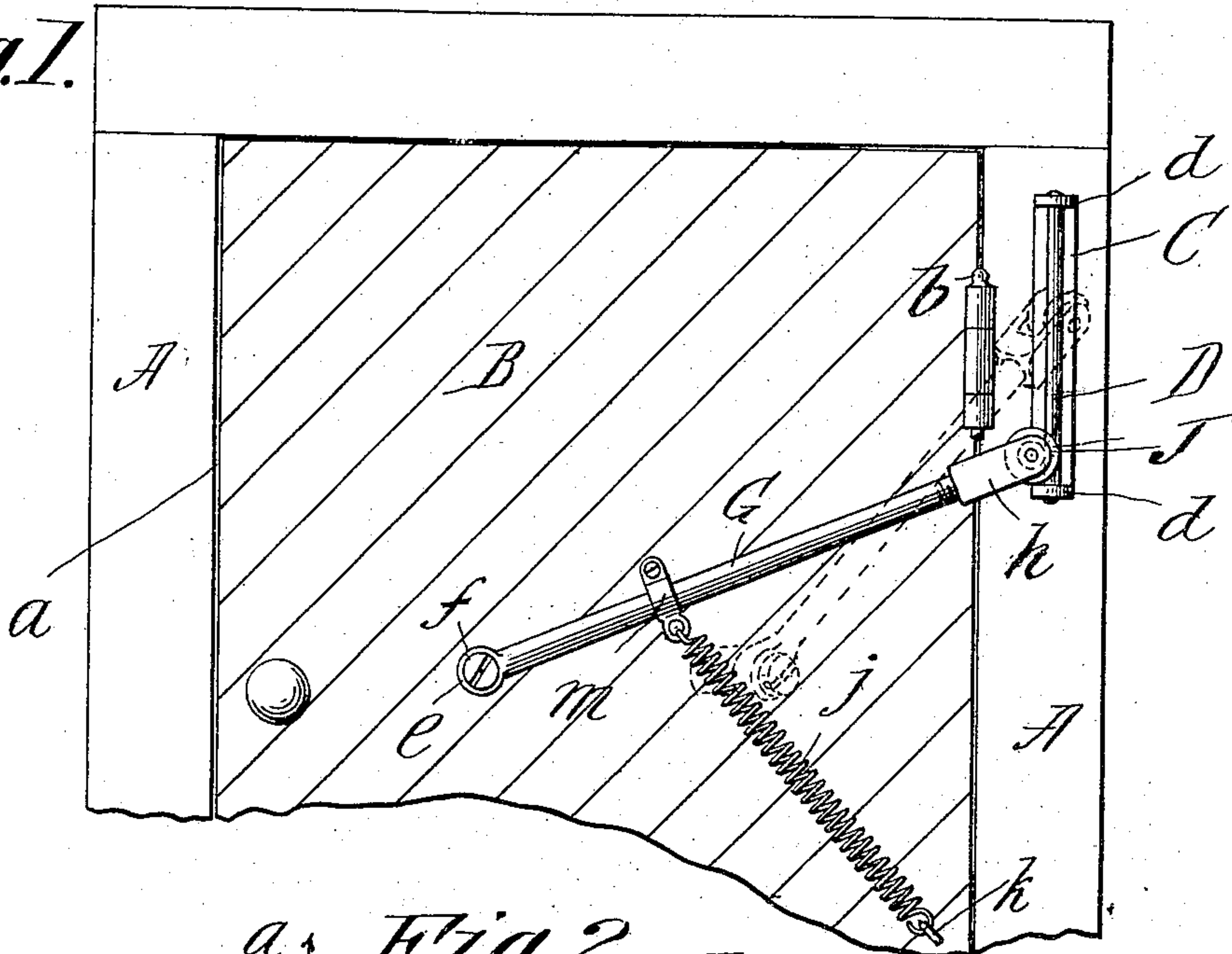
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DOOR CLOSER.

APPLICATION FILED MAR. 16, 1904.

NO MODEL.

Fig. 1.



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UNITED STATES PATENT OFFICE.

WILLIAM L. PEASE AND CHARLES E. VAN NORMAN, OF SPRINGFIELD,
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DOOR-CLOSER.

SPECIFICATION forming part of Letters Patent No. 767,167, dated August 9, 1904.

Application filed March 16, 1904. Serial No. 198,437. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM L. PEASE and CHARLES E. VAN NORMAN, citizens of the United States of America, and residents of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Door-Closers, of which the following is a full, clear, and exact description.

10 This invention relates to appliances on a door and the casing to which the door is hinged for its swinging movements, having for their object to establish a reaction or stress against the door, so that when the door is closed or
15 even when swung quite wide open there will be a closing pressure exerted thereagainst and yet so that when the door is swung around from the door-opening to a considerable extent toward the casing alongside of the door-
20 opening the tendency of the appliances will be to exert a yielding stress for maintaining the door in its swung-open position and against liability of closing, except as may wilfully be done by swinging it considerably
25 far to bring it again subject to the pressure exertible in the door-closing direction.

While the invention is applicable on doors generally, it is considered of especial value in provision-houses and other places where there
30 are large refrigerators, so that, for instance, at the times of carrying sides of beef and other meats into the refrigerator the open door may be reliably maintained in its opened condition and yet when swung closed be
35 held closed with a yielding pressure, which while comparatively slight and constituting no obstacle to readily pulling the door open is sufficient for maintaining it closed and dispenses with the necessity of a lock or latch.

40 The invention consists in the combination, with a door and the casing to which the door is hinged, of a runner-bar and a bearing-bar, one of said bars being mounted on the door-casing and the other on the door, the bearing-
45 bar being endwise pivotally connected to the part on which it is mounted and having a

sliding engagement by its opposite end with the runner-bar, and means for imparting a stress to the bearing-bar in a direction toward the runner-bar; and the invention further-
50 more consists in the constructions of parts and combinations and arrangements, as hereinafter more fully described, and set forth in the claims.

In accordance with the terms of the state-
55 ment of invention hereinabove contained it is immaterial to the operativeness of the appliances whether the runner-bar is located on the casing and the pressure-bar, which is arranged obliquely thereto, is bodily carried
60 by and has an additional swinging movement relatively to the hinged door or whether these parts are reversed—that is to say, whether the runner-bar is on the hinged door at a location offset from the hinge-line
65 and the pressure-bar is mounted obliquely relatively to the runner-bar for a swinging movement from a pivotal point on the face of the casing.

In the accompanying drawings, Figure 1
70 shows the appliances arranged the runner-bar on the casing and the pressure-bar on the door. Fig. 2 is a horizontal sectional view through the closed door and casing with the improved appliances appearing in plan view.
75 Fig. 3 is a similar view showing the relations of the parts when the door is swung partly open. Fig. 4 is a similar view to Fig. 2, but showing the door swung way open and around toward the side of the casing, whereupon a
80 reaction becomes developed to hold the door in its so-swung position.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents a portion of
85 the door-casing in which is the door-opening *a*, closing into which is the door B, which at its edge is hinged, as represented at *b*, the hinge-line being vertical. Secured on the outer face of the casing, offset from the hinge-
90 line, is a plate C, having upper and lower horizontal lugs *d d*, connected to and extend-

ing between which is a vertical runner-rod D, in parallelism with the hinge-axis.

G represents the bearing-bar, the same having at one end an eye *e*, through which the shank of a pivot-screw *f* connects it to a stud *g*, forwardly projecting beyond the front of the door, so that the bearing-bar G may have a swinging movement in a plane substantially parallel with the face of the door.

The free end of the bearing-bar is constructed with a yoke *h*, journaled in which on a horizontal axis is a grooved roller J, the flanges at either side of the groove embracing the runner-rod D, with which the roller-provided end of the bearing-bar has, through the antifriction medium of said roller, a sliding engagement, and it will be perceived that the bearing-bar is arranged obliquely to the length of the runner-bar, and means for producing a pressure of the bearing-bar to keep it swung forcibly against the runner-bar is in the present instance constituted by a spring *j*, one end of which is attached to a staple *k*, driven into the door below the bearing-bar, while the other end of the spring is connected to a clip *m*, secured on an intermediate portion of the said bar. The stress exerted by the spring is substantially such as to swing the bearing-bar in the natural plane of movement of such bar—that is, parallel with the face of the door—and so long as the line of the bearing-bar is radial relatively to the runner-bar and angular to a line between the hinge-axis and the center of the runner-bar and toward the door-opening the reaction is such as to exert a door-closing tendency, and such conditions exist when the parts are in the relation shown in Figs. 1, 2, and 3; but when the parts are so moved that the position of Fig. 4 is reached whereby the line of the bearing-bar while radial to the runner-bar has passed the imaginary line between the hinge-axis and runner-bar center the reactive stress of the runner-bar is such as to carry the door in the direction of the arrow *y*, Fig. 4.

The parts being simple and inexpensive of construction, easy of application in relation to the door and casing, requiring no nicety of adjustments, constitute a desirable and efficient door-swinging and door-checking means, which, moreover, will not become impaired by wear after the most protracted use.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with a door, and the casing to which the door is hinged, of a stationary runner-bar, and a bearing-bar, one of said bars being mounted on the door-casing, and the other on the door, the bearing-bar being pivotally connected at one end to the part on which it is mounted, and having a sliding en-

gagement at its opposite end with the runner-bar, said engaging end being provided with means whereby it is movable revolvably about the runner-bar in the swinging movements of the door and means for imparting a stress to the bearing-bar in a direction toward the runner-bar, for the purposes set forth.

2. The combination with a door, and the casing to which the door is hinged, of a stationary runner-bar, and a bearing-bar, one of said bars being mounted on the door-casing, and the other on the door, the bearing-bar being endwise pivotally connected to the part on which it is mounted, and having at its free end a grooved roller the groove of which engages the runner-bar, and means for exerting a pressure to the bearing-bar in a direction toward the runner-bar, for the purposes set forth.

3. The combination with a door-casing and a door hinged thereto on a vertical axis, of a runner-bar supported vertically by, and located forwardly beyond, the front of the casing and offset from the hinge-line, and a bearing-bar having one end thereof pivotally mounted on the front of the door, for a swinging movement in a plane substantially parallel with the surface of the door, said bearing-bar being arranged to have a running engagement by its free end on the runner-bar, being lengthwise oblique to said runner-bar, and movable revolvably around the runner-bar as bodily carried by the swinging door, and means for imparting a pressure to the bearing-bar in a direction toward the runner-bar.

4. The combination of a door-casing and a door hinged thereto on a vertical axis, a runner-bar on the casing, a stud on the door projected forwardly beyond the front of the casing and located offset from the hinge-line, and a bearing-bar having one end thereof pivotally connected to said stud for a swinging movement in a plane substantially parallel with the surface of the door, said bearing-bar being arranged to have a running engagement by its free end on the runner-bar, said bar being lengthwise oblique to said runner-bar, and provided with means at the end engaging the runner-bar whereby it is movable revolvably around the same in the swinging movement of the door, and means for imparting a pressure to the bearing-bar in a direction toward the runner-bar.

5. The combination with a door-casing and a door hinged thereto on a vertical line, of a plate secured on the casing offset from the hinge-line, and having forwardly-projecting lugs and a vertical runner-rod connected to said lugs, a bearing-bar having one end thereof pivotally connected on the front face of the door, for a swinging movement, substantially parallel with the plane of the door, said bar being arranged obliquely to the length of

the runner-rod and having at its free end a yoke provided with a grooved roller journaled therein, which has a rolling and also a revoluble engagement with the runner-rod and a
5 spring applied to exert a pressure on the bearing-bar to force it toward the runner-rod, substantially as and for the purposes described.

Signed by us at Springfield, Massachusetts,
in presence of two subscribing witnesses.

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Witnesses:

GRACE F. LAMB,
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