

No. 646,720.

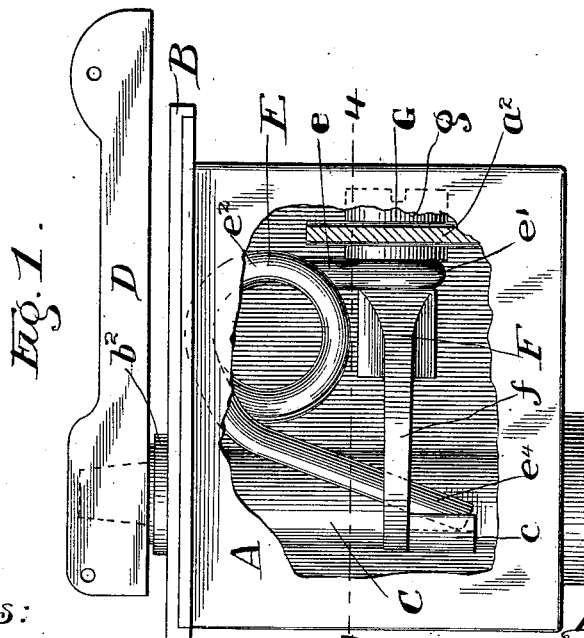
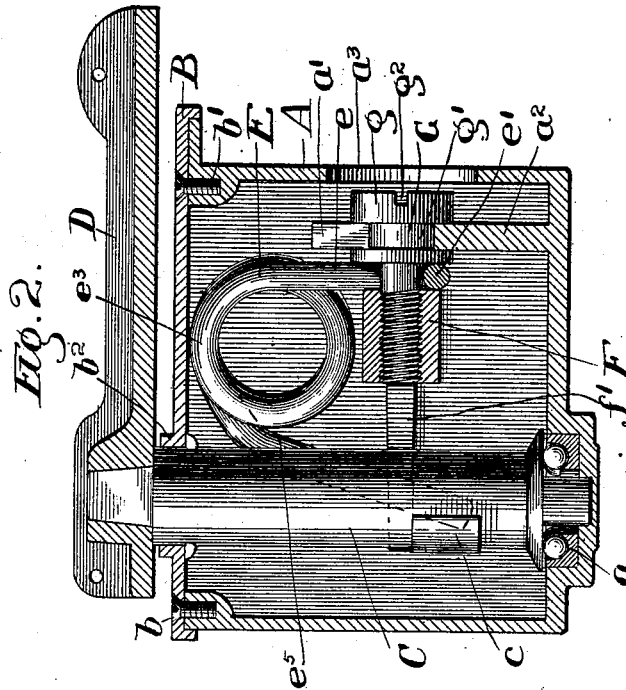
Patented Apr. 3, 1900.

G. J. ADAM.
DOOR CLOSER.

(Application filed Aug. 21, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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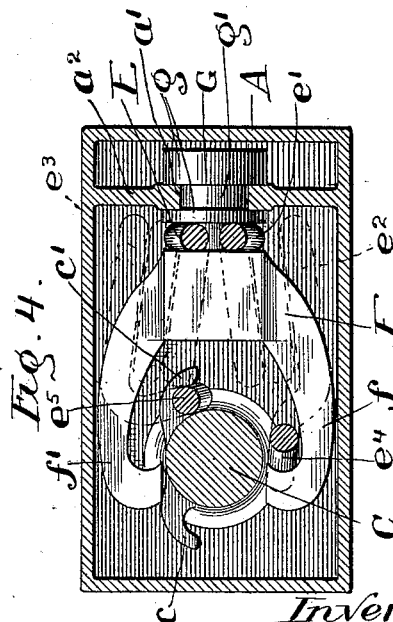
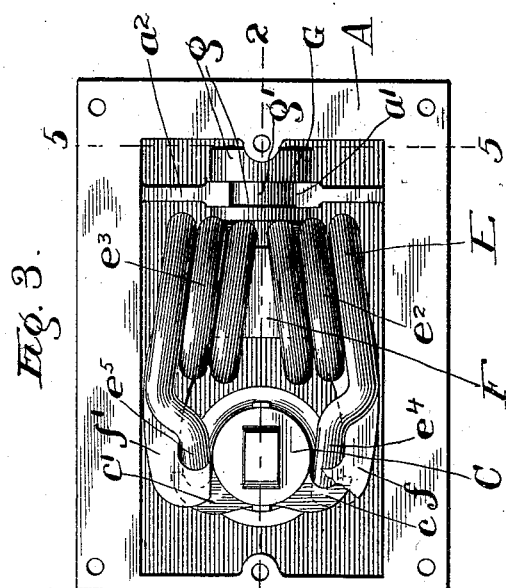
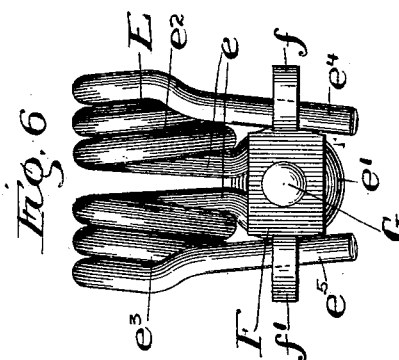
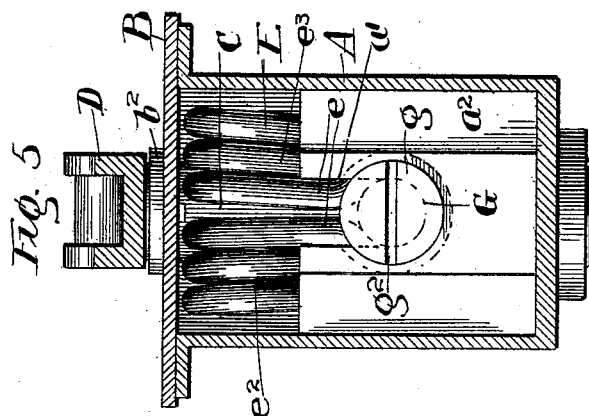
G. J. ADAM.

DOOR CLOSER.

(Application filed Aug. 21, 1899.)

(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

GEORGE J. ADAM, OF CHICAGO, ILLINOIS.

DOOR-CLOSER.

SPECIFICATION forming part of Letters Patent No. 646,720, dated April 3, 1900.

Application filed August 21, 1899. Serial No. 727,897. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. ADAM, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Door-Closers, of which the following is a specification.

My invention relates to certain improvements in door-closers of the class which employ a spring arranged beneath the floor and connected with the lower hinged corner of the latter, so as to swing it toward the closed position.

The object of the invention is to make a simple, cheap, and powerful device which shall be both noiseless and rapid in operation and shall exert the greatest force upon the door in the closed position.

To such end the invention consists in certain novel characteristics fully described below and definitely pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the closer with the box partly broken away. Fig. 2 is a vertical longitudinal section in line 2 2 of Fig. 3. Fig. 3 is a plan with the cover removed. Fig. 4 is a horizontal section in line 4 4 of Fig. 1. Fig. 5 is a transverse vertical section in line 5 5 of Fig. 3, and Fig. 6 is a detail view of the spring and confining-yoke in which it is placed under tension.

The device shown in the drawings is preferably inclosed in a box A, open at the top and provided with a cover B, secured in place by means of screws $b b'$. In the bottom of the box is an antifriction-bearing a , and the cover contains another bearing b^2 , the two serving to carry a post or spindle C, the top of which is fitted against rotation in a plate D, adapted for attachment to a door. The post C has two ears or hooks $c c'$ extending laterally in opposite directions, against which the operating-spring bears to swing the door. This spring, which is lettered E, is preferably formed with a tangential loop e , terminating in an eye e' , two coils $e^2 e^3$, having a common axis, and two tangential end portions or arms $e^4 e^5$. The spring is supported by a yoke F and adjusting-screw G, threaded in the middle portion of the yoke. The screw has a head g , containing a circumferential groove g' and a slot

g^2 for the insertion of a screw-driver. The grooved portion of the head rests in a notch a' in a transverse wall a^2 of the box, and an opening a^3 in the latter affords access to the slot for purposes of adjustment. The yoke has hooked arms $f f'$, which rest upon the ears $c c'$ and also serve to confine the spring. The eye e' of the latter bears against the head g of the screw, so that the arms $e^4 e^5$ may be drawn toward the eye to bring the spring to the desired tension. The spring, being entirely supported by the yoke and screw, may be lifted, together with the latter, from the box, which is of considerable importance in both the manufacture and the repair of the device.

Figs. 3 and 4 illustrate the operation of the closer. In Fig. 3 the arms $e^4 e^5$ rest against both the hooks of the yoke and the ears of the post or spindle, so that no tendency exists to rotate the post. Fig. 4 shows how the rotation of the post in either direction puts one of the arms of the spring under increased tension, so that the spring tends to turn the post back to the position of Fig. 3.

It should be noticed that the spring-arms push upon the ears $c c'$ in lines approximately tangential to the post, so that the purchase of the spring is greatest at about the closed position, also that the ends of the spring bear directly upon the spindle-ears without intermediate parts likely to cause a clicking or pounding when the door swings from one side to the other of its closed position.

While the above description is specific as to the preferred device illustrated, I do not intend to limit myself thereby to the exact details of the same, as they may be varied greatly without departing from the invention.

I claim as new and desire to secure by Letters Patent—

1. In a door-closer, the combination with a suitable frame, of a vertical post journaled therein provided with two radially-projecting hooked lugs, suitably-supported stops adjacent to said lugs, a pair of spring-coils arranged with their axes alongside of and transverse to said post and their ends extending from the coils in lines approximately parallel with the post, the ends upon one side of the coils bearing respectively upon the corresponding lugs and stops and suitable means

of adjustment bearing upon the opposite ends and upon the frame; substantially as described.

2. In a door-closer, the combination with a
5 suitable frame, of a post journaled therein
provided with a pair of opposite radially-pro-
jecting hooks, suitably-supported stops adja-
cent to said hooks and a spring consisting of
a middle U-shaped portion, a pair of coils ar-
10 ranged side by side upon a common axis
alongside of the post and transverse thereto
and a pair of substantially-tangential ends or
arms extending from said coils approximately
parallel with the post and bearing respec-
15 tively upon the opposite hooks and adjacent
stops, the U-shaped central portion being se-
cured to the frame and holding the coils under
tension to crowd the spring-arms against the
hooks; substantially as described.
- 20 3. The combination with a frame and a
post journaled therein, of a yoke having
hooked arms, an adjusting-screw threaded
therein, a spring having a central loop se-
cured upon the adjusting-screw, coils upon
25 opposite sides of said loop, arms extending
from said coils and confined in the hooks of
the said yoke and means for supporting the
spring and yoke in the frame with the ends
of the spring bearing eccentrically upon the
30 post; substantially as described.
4. The combination with a frame and a
post journaled therein having oppositely-ex-
tending hooked ears, of a yoke having hooked

arms, the hooked ends of which are substan-
tially the same distance apart as the said 35
ears, an adjusting-screw threaded in the yoke,
a spring having portions bearing respectively
upon the adjusting-screw and the hooks of
the yoke and tending to separate the same
and a suitable support in the frame for the 40
adjusting-screw and yoke adapted to hold
the ends of the spring which bear upon the
hooks of the yoke in position to engage the
ears of the post; substantially as described.

5. The combination with a frame having a 45
post journaled therein provided with oppo-
sitely-extending ears, of a yoke having hooked
ends corresponding in position to the said
ears, an adjusting-screw threaded in the yoke
and having a head provided with a circum- 50
ferential groove, a support upon the frame
to receive the grooved portion of said head
and a coiled spring consisting of a central
loop encircling the screw between the head
and the yoke, coils upon opposite sides of 55
said loop and arms extending into the hooks
of the yoke adapted to bear upon the ears of
the post; substantially as described.

In witness whereof I have hereunto set my
hand at Chicago, in the county of Cook and 60
State of Illinois, this 1st day of August, A. D.
1899.

GEORGE J. ADAM.

Witnesses:

CHAS. O. SHERVEY,
S. BLISS.