

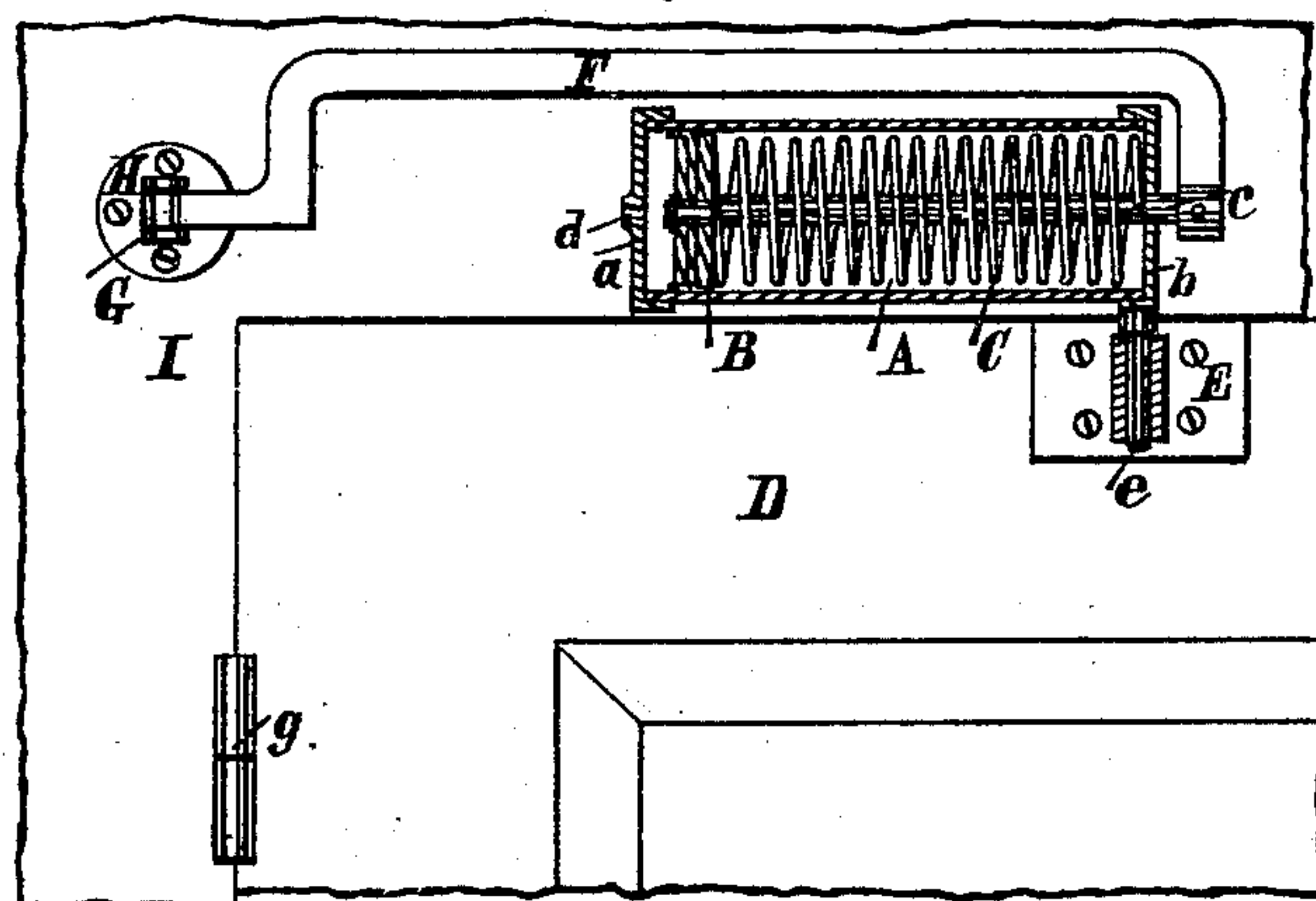
(No Model.)

T. N. PAGE.  
PNEUMATIC DOOR CHECK.

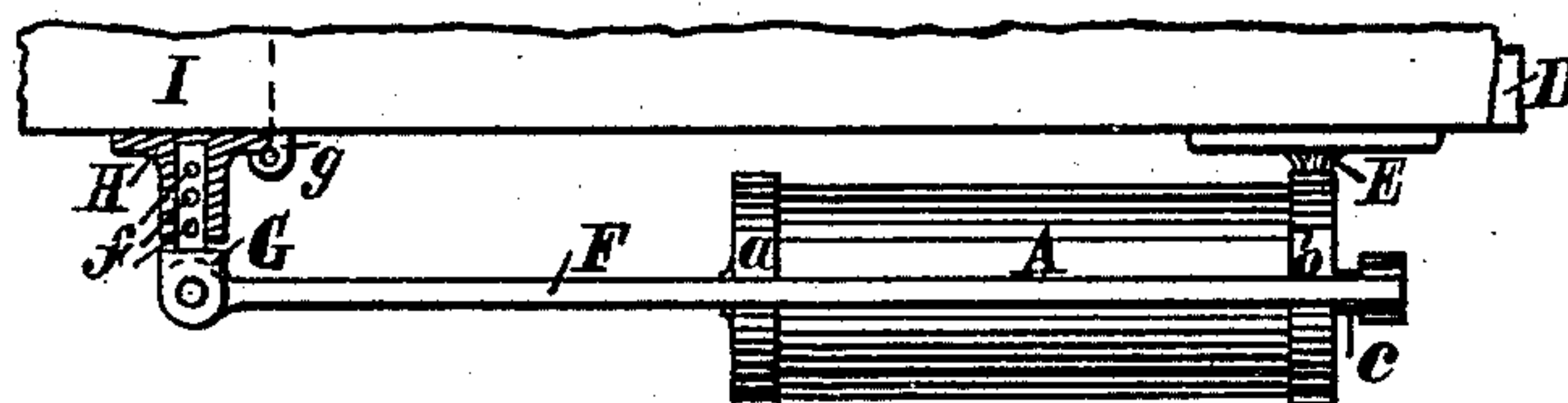
No. 285,156.

Patented Sept. 18, 1883.

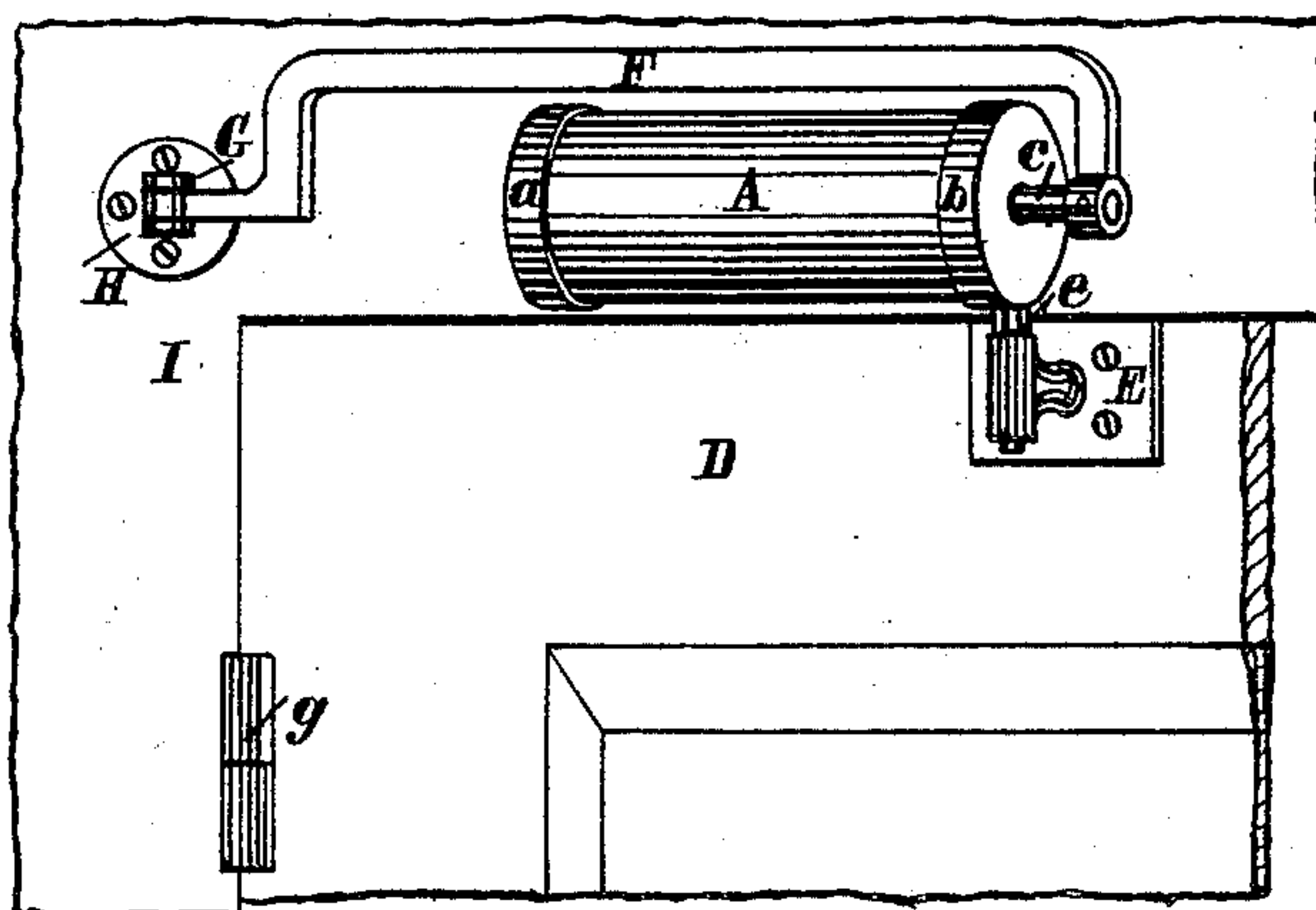
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

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## PNEUMATIC DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 285,156, dated September 18, 1883.

Application filed December 26, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, T. NICHOLS PAGE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Pneumatic Door-Checks, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to pneumatic door-checks of that class in which air is compressed in a cylinder by means of a piston.

My invention consists, primarily, in a cylinder pivoted to the door, in combination with a piston, piston-rod, and an arm fastened at one end to the outer end of the piston-rod, and pivoted at the other end on the door-frame, so that on opening the door the cylinder will approach longitudinally the place of pivoting said arm, as hereinafter set forth.

It also consists in certain details of construction, all of which are hereinafter described, and specifically pointed out in the claims.

In the drawings, Figure 1 shows a pneumatic door-check embodying my invention as applied to a door and door-frame, the cylinder and socket-piece on the door being shown in section. Fig. 2 is a plan view, the stand on the door-frame being shown in section. Fig. 3 shows the device when the door is partly open.

The cylinder A has ends or caps *a* and *b* suitably and firmly secured thereon. The piston B has a rod, *c*, which extends through to slide in an opening in the cap *b*. Between the cap *b* and piston is a spiral spring, C, which acts to press the piston toward the cap *a*. In the cap *a* is an opening or valve, *d*, of the required size or construction to allow air to enter and pass from the cylinder as required.

To the cap *b*, or other part of the cylinder, is firmly secured a vertical pin or stud, *e*. On the door D is fastened a stand, E, having a socket to receive the stud *e*, whereby the cylinder is pivoted to the door to swing horizontally. This swinging motion of the cylinder is very slight.

To the outer end of the piston-rod is secured one end of an arm, F. This arm extends over or along beside the cylinder, as shown, and is pivoted at the other end, opposite the end *a*

of the cylinder, in or near a line extending through the longitudinal center of the cylinder. The arm F is pivoted to swing horizontally on a stud, G, which is held in a socket in a stand, H, which is fastened on the door-frame I. The stud G has several holes, *f*, and there is a hole through the stand H, so that a pin inserted in the latter may pass through the proper one of the holes *f* to secure the stud G in the stand H in that position required to adjust the place of pivoting the arm at the desired distance from the door-frame.

While the door is closed, the cap or end *b* of the cylinder is in its nearest position relative to the place of fastening the arm F to the piston-rod, and the piston is in its position nearest the cap or end *a*. While the door is being opened, the cylinder approaches in a longitudinal direction the stand H and stud G—that is, the place of pivoting the arm F. This relative movement is owing to the place of pivoting said arm with relation to the pivotal line of the hinge *g*, about which the door swings, said place of pivoting being, when the door is closed, farther from the cylinder than said pivotal line of the hinge. While opening the door, the piston moves toward the end or cap *b* against the pressure of the spring C. The door being allowed to move under the action of the spring, the piston will move toward the end *a* of the cylinder and compress the air between the piston and this end of the cylinder. The rapidity with which the compressed air escapes through the opening *d* determines the speed of the piston, and hence the motion of the door in closing. Thus the door may be prevented from closing too rapidly and from slamming.

This device is simple in construction, direct in action, the draft and pressure between places of pivoting on door and door-frame, being in direct line, may be readily applied, and, having few places for wear, will be durable.

I claim as my invention—

1. In a pneumatic door-check, the combination, with a cylinder, piston, and piston-rod, of an arm, F, secured rigidly at one end to the piston-rod opposite one end of the cylinder, and pivoted at the other end opposite the other end of the cylinder, and at a greater



distance from the cylinder than the line about which the door swings, substantially as set forth.

2. In combination with a cylinder, piston,  
5 and piston-rod, an arm, F, fastened rigidly at one end to the piston-rod, a stand, E, to which the cylinder is pivoted, and a stand, H, to which the other end of the arm F is pivoted, the stands E and H being on door and door-frame,  
10 and the distance between the pivots in said stands being, when the door is closed, greater than the distance from either of said pivots to the line about which the door swings, as speci-

fied, so that the cylinder approaches the stand H in a longitudinal direction on opening the 15 door, as set forth.

3. In combination with a cylinder, piston, and piston-rod, and an arm, F, fastened rigidly to piston-rod, as set forth, a stud, G, to which the arm F is pivoted, and adjustable 20 in a stand, H, substantially as and for the purpose set forth.

T. NICHOLS PAGE.

Witnesses:

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