

(No Model.)

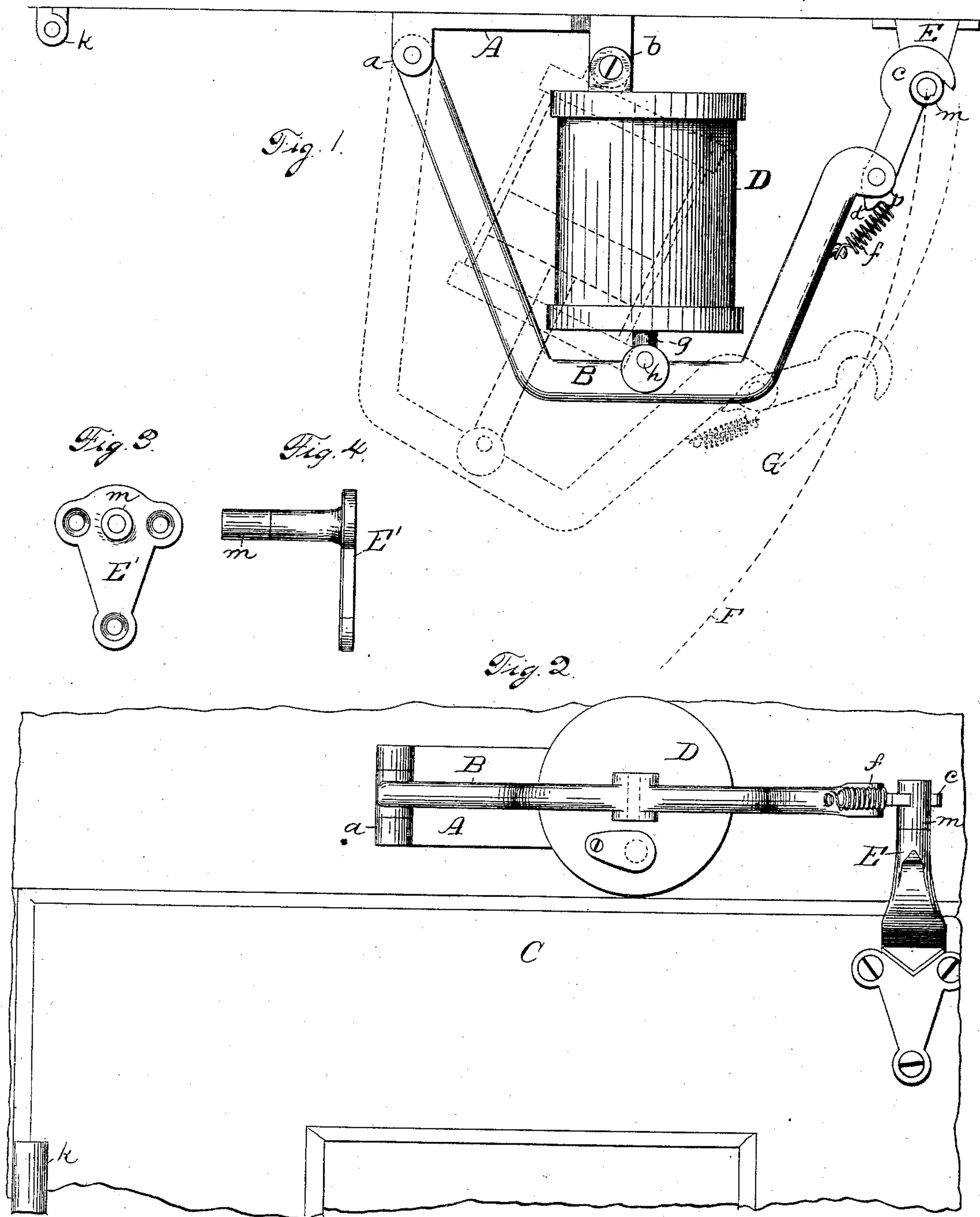
2 Sheets—Sheet 1.

G. GEER.

PNEUMATIC DOOR CHECK.

No. 371,259.

Patented Oct. 11, 1887.



Witnesses:
John Edwards, Jr.
Eddy W. Smith
Thos. Brockway

Inventor
George Geer.
By James Shepard Atty.

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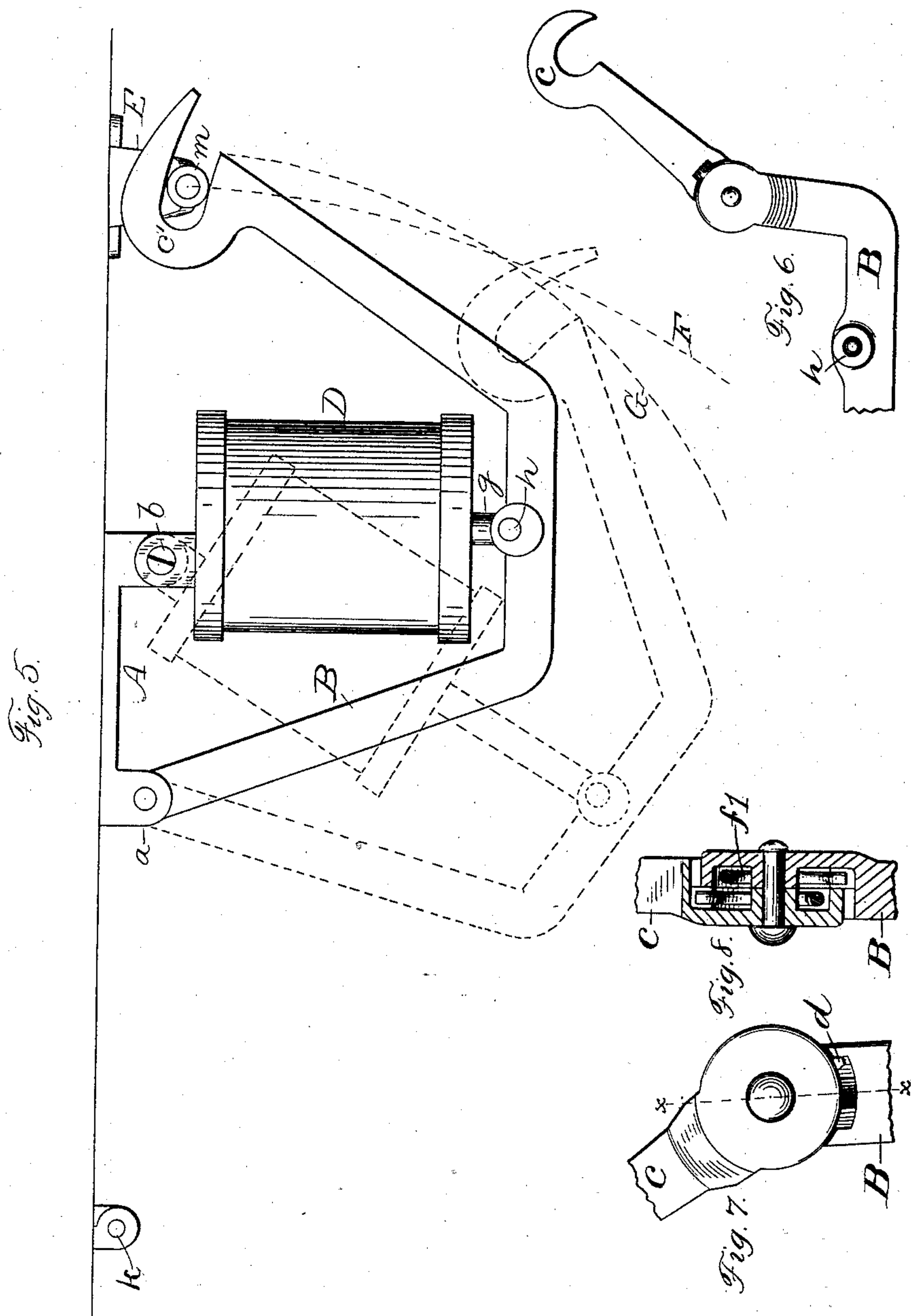
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Atty.

UNITED STATES PATENT OFFICE.

GEORGE GEER, OF PETERBOROUGH, NEW HAMPSHIRE, ASSIGNOR TO THE
RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN,
CONNECTICUT.

PNEUMATIC DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 371,259, dated October 11, 1887.

Application filed June 16, 1887. Serial No. 241,500. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GEER, a citizen of the United States, residing at Peterborough, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Pneumatic Door-Checks, of which the following is a specification.

In the accompanying drawings, Figure 1 is a plan view of my door-check. Fig. 2 is a front elevation thereof. Figs. 3 and 4 are respectively a reverse plan view and side elevation of the bracket for use in connection with my door-check when it is to be applied to the opposite side of the door from that upon which it is shown in Figs. 1 and 2. Fig. 5 is a plan view of a modified form of my check. Fig. 6 is a plan view of the hooked end of the lever in a different form. Fig. 7 is a reverse plan view of the jointed portion thereof; and Fig. 8 is a sectional view of the same on line *x x* of Fig. 7, the pintle being shown in elevation.

A designates a base-plate, from which project two brackets or knuckles, *a* and *b*. Upon the bracket *a*, I hinge a lever or arm, B, of the peculiar form shown, upon the free end of which lever is pivoted a hook, *c*. This hook is provided with a heel, *d*, which, when the hook is thrown into the position represented by broken lines, strikes the body of the lever B and acts as a stop to limit the movement of the hook in that direction. A spiral spring, *f*, is secured to the hook *c* and a lug upon the end of the lever B, so as to pull upon the hook with a constant tendency to throw it into the position represented by broken lines in said Fig. 1.

To the bracket *b*, I hinge an air-cylinder, D, within which is a piston, (indicated by broken lines in Fig. 1,) said piston being connected to the end of the piston-rod *g*, Fig. 1, which piston-rod is pivoted to the lever B by the pin *h*. It will readily be seen that by moving the lever B upon its axis within the bracket *a* the cylinder D will oscillate, and that the piston-rod will be drawn outwardly, as indicated by the broken lines, while a return movement of the lever B will force the piston-rod in the opposite direction.

The construction of the cylinder and piston may be the same as in any ordinary pneumatic door-check, it being only essential that there be a small vent for the escape of air when the piston is moving inwardly, at which time the piston should fit the cylinder tightly, and that when the piston is moving outwardly the air should be readily admitted to the front side of the piston within the cylinder. Such parts being well known and not of my invention, I consider it unnecessary to illustrate them.

I have illustrated my door-check as applied to the casing over the door C, Fig. 2. *k* designates the door-hinges, and E the bracket, which is secured to the door, and preferably provided at its upper end with a tip, *m*, of wood, leather, or other material which will make less noise when it quickly comes in contact with metal than would two pieces of iron. The bracket E, being upon the door, will describe a circle, F, Fig. 1, of which the hinges form the axis. The hook *c* moves about the axis formed by the pin in the bracket *a*, and if it were free to take the position into which it is forced by the spring *f* the center of the hook's eye would describe the circle G, Fig. 1; but inasmuch as the bracket E modifies its action it does not actually follow said path, but when the bracket is engaged therewith it follows the circle described by said bracket E.

The parts shown by full lines in Figs. 1 and 2 are represented as with the door closed. Upon opening the door the hook *c* embraces the bracket E so closely that it is necessarily moved with and by the bracket. The spring *f* gradually draws the hook into position where it is stopped by the heel *d*, thereby presenting the open eye of the hook gradually to the outside of the bracket-post, so that when the parts have reached the position indicated by the broken lines the bracket may slip out of the hook, leaving the parts in said position.

I intend to use my check with any suitable door-closing device, which we will suppose was previously placed upon a door, or, if not, it is to be a spring, weight, or other device which is separate from my check. When the door is released and thrown to by the door-

closing device, the upper end of the bracket E will engage the hook at the point where the circles G and F meet, after which the door can close only by moving the lever B with it, and this will force the piston into the cylinder, while the air-cushion within the cylinder will prevent the spring or door-closing device from shutting the door with a slam.

A simple rule for attaching my device is as follows: Secure the bracket A and connected parts to the casing over the door at any desired point from the hinges, but preferably not farther from them than half the width of the door; then take hold of the lever B and pull it outwardly to about its full capacity—that is, at or near the position indicated by broken lines in Fig. 1; then open the door until it is brought to a point nearly under the hook; then lay the bracket E upon the face of the door and slip it along into such a position as that it will freely enter the hook in swinging the door to, and then secure the bracket in place in the position thus found. To attach the device to the opposite or jamb side of the door, the bracket A and its connected parts are secured to the casing with its post pointing downward, but following the same rule as to the position of the parts as before.

Instead of making the lever B with the hook pivoted at its end, substantially the same device may be made by casting a hook, *c'*, upon the end of the lever B, as shown by the modification in Fig. 5. The other parts remain the same as in the other figures, and are correspondingly lettered. The operation of this modification will be readily understood by

reference to the broken lines G and F, which represent, respectively, the circle described by the inside corner of the hook *c'* and the circle described by the door-bracket E'. In this case, where the hook has no swinging movement, its tip is made longer, so as to make sure of its engagement with the bracket.

The modification shown in Figs. 6, 7, and 8 operates the same as the parts shown in Figs. 1 and 2, differing therefrom principally in the fact that the spring *f'* is housed within the joint, and that the heel *d* of the hooked end, which serves as a stop, works in a recess in the main part of the lever B, as shown by the under side view, Fig. 7. A housed spring in a joint being well known, no special description is required.

I claim as my invention—

1. The combination of the oscillating cylinder, the piston-rod *g*, the lever B, having a hook at its outer end, and the bracket adapted to engage and disengage said hook, substantially as described, and for the purpose specified.

2. The combination of the oscillating cylinder, the piston-rod *g*, the lever B, the hook *c*, pivoted to the outer end of said lever and provided with a stop for limiting its motion on its pivot, the spring *f*, for pressing said hook against the stop, and the bracket adapted to engage and disengage said hook, substantially as described, and for the purpose specified.

GEORGE GEER.

Witnesses:

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