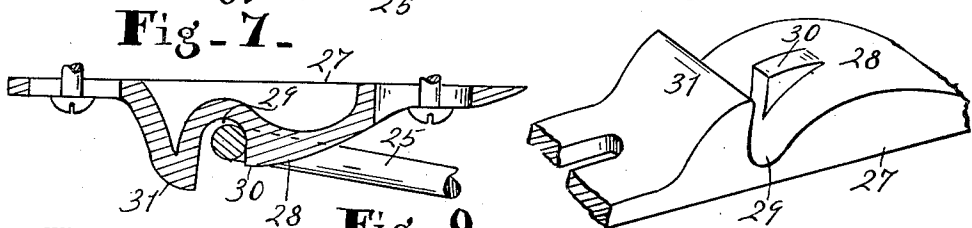
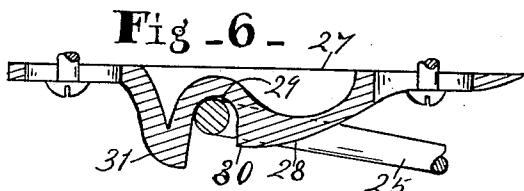
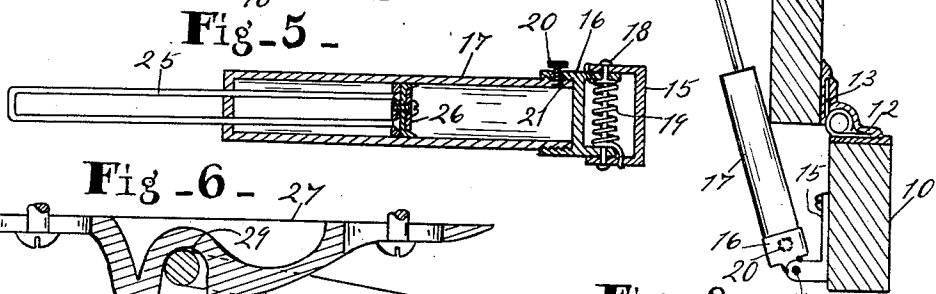
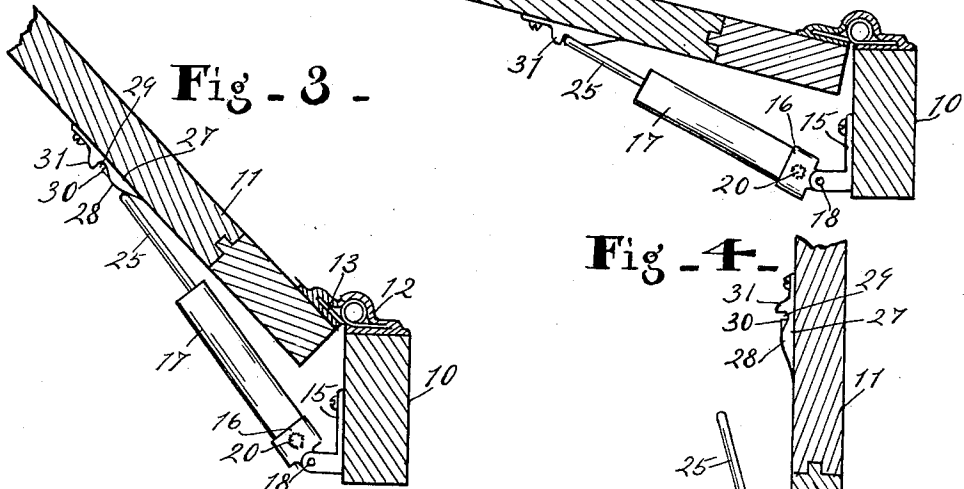
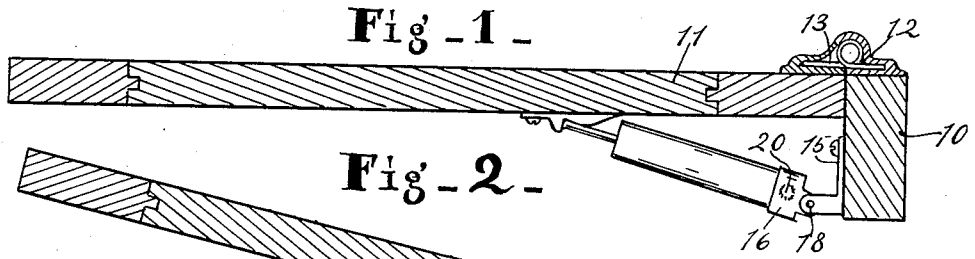


No. 890,207.

PATENTED JUNE 9, 1908.

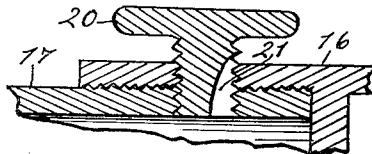
D. W. ANDERSON.  
DOOR CHECK.

APPLICATION FILED JULY 26, 1907.



WITNESSES:

*W. M. Gentle.*  
*N. Allemon*



INVENTOR.  
**David W. Anderson.**

BY  
*W. H. Lockwood.*  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

DAVID W. ANDERSON, OF LA FAYETTE, INDIANA, ASSIGNOR TO JUDSON L. MOTT, OF LAPORTE, INDIANA.

## DOOR-CHECK.

No. 890,207.

Specification of Letters Patent.

Patented June 9, 1908.

Application filed July 25, 1907. Serial No. 385,476.

*To all whom it may concern:*

Be it known that I, DAVID W. ANDERSON, of La Fayette, county of Tippecanoe, and State of Indiana, have invented a certain new and useful Door-Check; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to provide a simple, economical and durable door check that includes means for providing an air cushion.

One feature of the invention consists in combining with a door, a spring or equivalent means that tends to close the door, and means for providing an air cushion that tends to check the closing movement of the door.

Another feature of the invention consists in the combination with a door of means providing an air cushion for resisting the closing movement of the door, and a spring that tends to press said means always towards or against the door.

Another feature of the invention consists in a hook and push lug secured to the door for operating the piston in the air cylinder so that the piston will be withdrawn during the first part of the opening movement of the door and then the piston rod will disengage the hook during the remainder of the opening movement of the door. And the push lug is situated opposite and adjacent to said hook so that the first part of the closing movement of the door will be rapid, during which the piston rod will ride over the hook and engage the push lug and the air in the cylinder be compressed as the door finishes its closing movement, so as to check only the latter part of the closing movement of the door.

These and the other features of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Figure 1 is a horizontal section through a door equipped with my door check, the door being closed. Fig. 2 is the same with the parts in position during the first portion of the opening movement of the door. Fig. 3 is the same with the parts in position when the door is about half open and the piston rod has disengaged the hook on the door, the door being partly broken

away. Fig. 4 shows the position of parts with the door entirely open, the door being broken away. Fig. 5 is a central longitudinal vertical section through the major portion of the air cushion mechanism, parts being in end section. Fig. 6 is a central horizontal longitudinal section through the hook, push lug, and end of the piston rod, the parts being shown in their position during the latter part of the closing movement of the door, and parts being broken away. Fig. 7 is the same with the parts in position during the first part of the opening movement of the door. Fig. 8 is a perspective view of the casting that carries the hook and push lug. Fig. 9 is a detail showing the means for regulating the outlet of the air from the air cylinder.

There is shown in the drawings one side of a door casing 10 with a door 11 mounted thereon by means of spring hinges 12, the springs 13 of said hinges tending to close the door. While I have shown here one form of spring hinge, I do not wish to be limited to any particular form of spring hinge or to any particular manner in which a spring or equivalent means may be used that tends to close the door.

On the casing inside the door I place a bracket 15 having two horizontal parallel ears between which the head 16 of the air cylinder 17 is pivoted by a pin 18. A spring 19 is coiled about the pin 18 with one end bearing against one side of the head 16 of the air cylinder and the other end bearing against one side of the bracket 15. The object of this spring 19 is to normally push the outer end of the air cylinder 17 always towards or against the door. The air cylinder 17 screws within the head 16 and is held from coming apart by a screw 20. This screw also performs the function of regulating the exit of air through the groove 21 in the screw 20. This is a tapering groove so that the further in the screw 20 is turned, the smaller will be the passageway, and, in fact, the passageway may be closed entirely by turning the screw in to its limit.

The piston rod 25 is a double rod or link operating through the end of the cylinder 17 and secured to the piston 26. On the side of the door a casting 27 is secured having a beveled portion 28 with a recessed portion 29, a hook 30, and the push lug 31. The hook and push lug are opposite each other,

and the hook is on an inclination between the bevel surface 28 and the recess 29. The function of the bevel surface 28 is to gradually pry the end of the piston rod 25 out of engagement with the hook 30 as the door is gradually opened so that during the latter half of the opening movement of the door the piston rod is disengaged from the hook, and during the latter part of said opening movement of the door the piston rod is wholly disengaged from the door, as seen in Fig. 4.

The operation will be understood from the following description: When in the position shown in Fig. 1, the end of the piston rod 25 is resting in the recess 29 in the casting 27, and, therefore, the end of the piston is behind the hook 30. As the door is drawn open the piston rod 25 is drawn in a direction away from the cylinder 17 until the door is almost half open or almost reaches the position shown in Fig. 3, whereupon the beveled surface of the casting 27 disengages the piston rod 25 from the catch 30. During the following portion of the opening movement of the door, as shown in Figs. 3 and 4 the door is free to move without further action on the piston rod, but the spring 19 continues to hold the cylinder against the door, as seen in Fig. 4.

When the door is released, the spring 13 in the hinge closes the door. Since the piston rod is wholly disconnected from the door, the first half of the closing movement of the door is very rapid, but after the door has passed through more than half of its closing movement, the push lug 31 engages the end of the piston rod and moves the piston in the cylinder. The air cushion in the cylinder resists the inward pressure of the piston and thereby checks the door in the latter part of its closing movement but does not entirely stop such closing movement and, therefore,

allows the door to close without slamming, for air escapes from the air cylinder so that the spring 13 in the hinge of the door will continue to push the door to its closing position as the air escapes from the cylinder. It is thus seen that a very simple and cheap pneumatic door check is provided that is adapted for screen doors and all other forms of doors, the parts being made heavier for heavier doors. Particular attention is called to the fact that during the major portion of the opening movement of the door it is free from the door check mechanism, and the same is true during the major portion of the closing movement of the door, so that it will close rapidly. This rapid closing of the door particularly adapts the device for screen doors and all doors in the summer time, where it is desired to keep flies and the like out of the house.

What I claim as my invention and desire to secure by Letters Patent is:

The combination with a spring-closing door of an air-cushioning mechanism for checking the closing movement of the door that is disengaged from the door during the latter part of the opening and first part of the closing movement of the door, means on the door for operating said mechanism during the first part of the opening movement and the last part of the closing movement of the door, a push lug secured to the door adapted to engage the piston rod during the latter part of the closing movement of the door, and a spring that tends to force the air cylinder and piston rod towards the door.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

DAVID W. ANDERSON

Witnesses:

N. ALLEMONG,  
W. M. GENTLE.