June 2, 1936. E. E. MEMMEL 2,042,954

DOOR CHECK

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Fig. 1

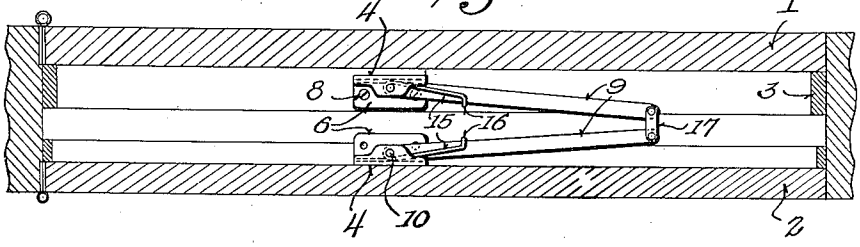


Fig. 2

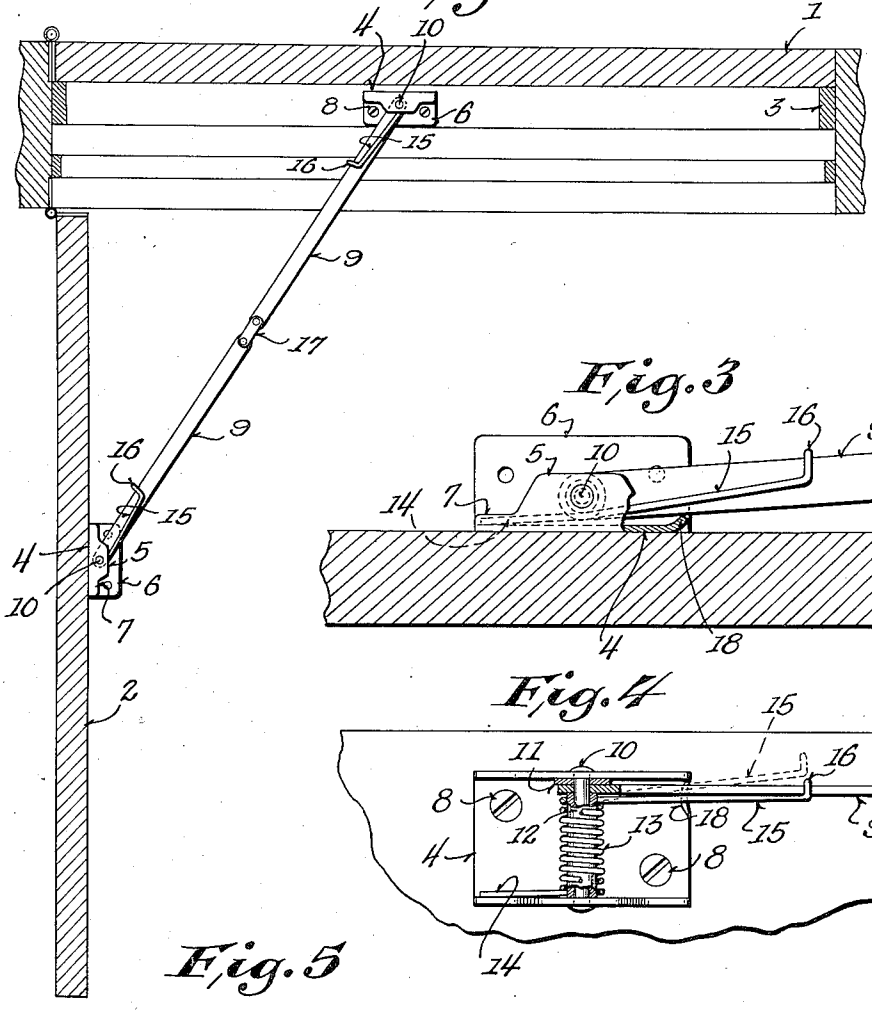
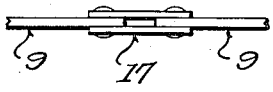


Fig. 3

Fig. 4

Fig. 5



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DOOR CHECK

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4 Claims. (Cl. 16—80)

This invention relates to door checks and is particularly directed to a door check suitable for screen doors or storm doors.

Objects of this invention are to provide a novel form of door check which is so made that it prevents the door from opening beyond a predetermined point, which provides a spring action for cushioning the opening of the door, which provides means tending to close the door with a gradually reduced spring force so as to minimize slamming, and which is so made that it can be very easily positioned in the limited space between a screen or storm door and the usual door.

Further objects are to provide a door check which employs two levers joined adjacent their free ends and pivoted to brackets secured respectively to the door jamb and to the door, and which is so made that the springs provided for the arms tend to hold the arms up to thus avoid sagging as the parts wear, so that there is no chance of the arms gradually dropping downwardly after the device has been in use a considerable length of time, but in which the springs, as stated, hold the arms in their elevated position irrespective of wear or extended use, and in which the tension or urge of the springs does not tend to bow or move the arms out of position.

Further objects are to provide a construction in which identically similar brackets are provided for the pivoted ends of the arms so that either side of the bracket can be applied to the door or to the door jamb, in which the brackets are so made that either the body portion or vertical portion thereof or a right-angle flange may be employed for attaching the bracket to the door or to the door jamb respectively, the parts being, as stated, similar and being, therefore, capable of being stamped and formed from the same dies.

A further object of the invention is to provide means for preventing the arms from rocking into contact either with the storm or screen door or with the usual door when the device is in closed position, and to provide means whereby the springs may be temporarily unhooked or detached from the arms to facilitate initial positioning of the device.

An embodiment of the invention is shown in the accompanying drawing, in which:

Figure 1 is a sectional view through a storm door and the usual door, such view being taken from the under side of the top portion of the jamb, such view showing the door in closed position.

Figure 2 is a view similar to Figure 1 showing the door in open position.

Figure 3 is a view from the under side of the device with parts broken away showing a detailed construction.

Figure 4 is a face view of one of the brackets with parts broken away and in section.

Figure 5 is a detail of the small link joining the outer ends of the arms.

Referring to the drawing, it will be seen that the usual door is indicated by the reference character 1, the storm or screen door by the reference character 2, and the door jamb generally by the reference character 3.

The device consists of a pair of channel-shaped brackets each having a vertical portion 4 and horizontal flanges 5 and 6. The flange 6 may be wider than the flange 5 if desired, and the flange 5 is preferably provided with a lip like central portion and with relatively narrower portions 7. These narrower portions of the flange 5 provide means for preventing the end of the spring hereinafter described from slipping off of the bracket. Both the vertical portion and the flange 6 are provided with apertures so that the attaching screws 8 may be passed through either of such portions, as will hereinafter appear.

Each bracket has an arm 9 hinged thereto by means of a pintle pin 10. Preferably a washer 11 is positioned immediately above the arm, see Figure 4, and a spacer sleeve 12 surrounds the pintle pin immediately below the arm. A helical spring 13 is loosely coiled around the spacer sleeve 12. One end thereof, as indicated at 14, is extended to form an arm and bears against the vertical portion 4 of the bracket. The other end is also extended to form a relatively longer arm 15 and is provided with a hook 16 which hooks over the arm 9.

It is to be noted particularly from reference to Figure 4 that the arm 15 of the spring 13 tends to move upwardly, as indicated in dotted lines in Figure 4, and thus, when it is hooked over the arm 9, tends to hold such arm in its normal elevated position and prevents the arm from sagging.

The free ends of the arms 9 are joined by means of a small link, for example the double link indicated by the reference character 17 in Figures 1, 2 and 5.

In mounting the device the arms 15 of the springs are unhooked from the arms 9 and greater facility is allowed the operator in installing the device. For example, one of the brackets may be installed by passing the attaching screws 8 through the flange 6 and securing the bracket to the upper portion of the door

jamb. The other bracket is secured to the face of the storm or screen door 2 by passing the securing screws 8 through the vertical face 4 thereof.

After the brackets have been installed, the springs are hooked over the arms, as previously described. These springs tend to rock the arms towards closed position and thus tend to draw the storm or screen door inwardly. The maximum spring action is, of course, obtained when the door is fully opened and it is obvious that somewhat of a cushioning action occurs, namely, an increasing resistance to the opening of the door, thus tending to prevent the door being suddenly flung to full open position. Further than this as the door closes, the spring action tending to close the door gradually decreases, thus minimizing slamming.

However, it is to be noted that there is no force exerted by either spring tending to distort the arms or to cause sagging of the arms downwardly. Instead, the springs actually support the arms and prevent downward sagging thereof.

In order to prevent the arms from striking either the screen or storm door or the usual door, it is preferable to provide some form of stop on the bracket. For example as shown in Figures 3 and 4, a stop in the form of a tongue 18 may be turned outwardly from the vertical portion 4 of the brackets and may form stops for the arms 9, thus preventing the arms from rocking too far inwardly and damaging either door.

It will be seen that a door check has been provided for a storm or screen door which is so made that it may be very easily applied to the door and the door jamb and which also prevents sagging of the arms, irrespective of wear that may occur from extended use of the device.

It will also be seen that the springs may be unhooked to facilitate initial positioning of the device and may thereafter be readily re-hooked to the arms.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

I claim:

1. A device of the class described comprising a pair of brackets for attachment to a door and jamb respectively, an arm pivotally carried by each bracket, said arms having their outer ends operatively joined, and a spring urging each arm towards door-closed position, said springs having laterally projecting extended portions sprung upwardly beyond the normal position of said arms and bearing upwardly against said arms and holding said arms against sagging.

2. A device of the class described comprising a pair of channel-shaped brackets having upper and lower flanges and having a vertical portion, said vertical portion and at least one of said flanges having apertures to receive attaching means, said brackets being adapted for attachment to a door and jamb respectively, a pintle pin for each bracket carried by said flanges, an arm pivoted upon each pintle pin and projecting outwardly from the bracket, said arms being operatively connected adjacent their outer ends, helical springs surrounding said pintle pins and exerting a turning motion upon said arms tending to rock said arms to door-closed position, said springs each having a projecting portion provided with a hook for detachable engagement with the respective arm and exerting a lifting pressure upon the arms to prevent sagging of said arms.

3. A device of the class described comprising a pair of channel-shaped brackets having upper and lower flanges and having a vertical portion, said brackets being adapted for attachment to a door and jamb respectively, a pintle pin for each bracket carried by said flanges, an arm pivoted upon each pintle pin and projecting outwardly from the bracket, said arms being operatively connected adjacent their outer ends, helical springs surrounding said pintle pins and exerting a turning motion upon said arms tending to rock said arms to door-closed position, said springs each having a projecting portion provided with a hook for detachable engagement with the respective arm and exerting a lifting pressure upon the arms to prevent sagging of said arms, said brackets having stops formed thereon for limiting the inward motion of said arms.

4. A device of the class described comprising a pair of brackets for attachment to a door and jamb respectively, an arm pivotally carried by each bracket, said arms having their outer ends operatively joined, at least one spring urging one of said arms towards door closed position, said spring having a laterally extending portion sprung upwardly beyond the normal position of the corresponding arm and bearing against said corresponding arm to hold said arms against sagging.

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