

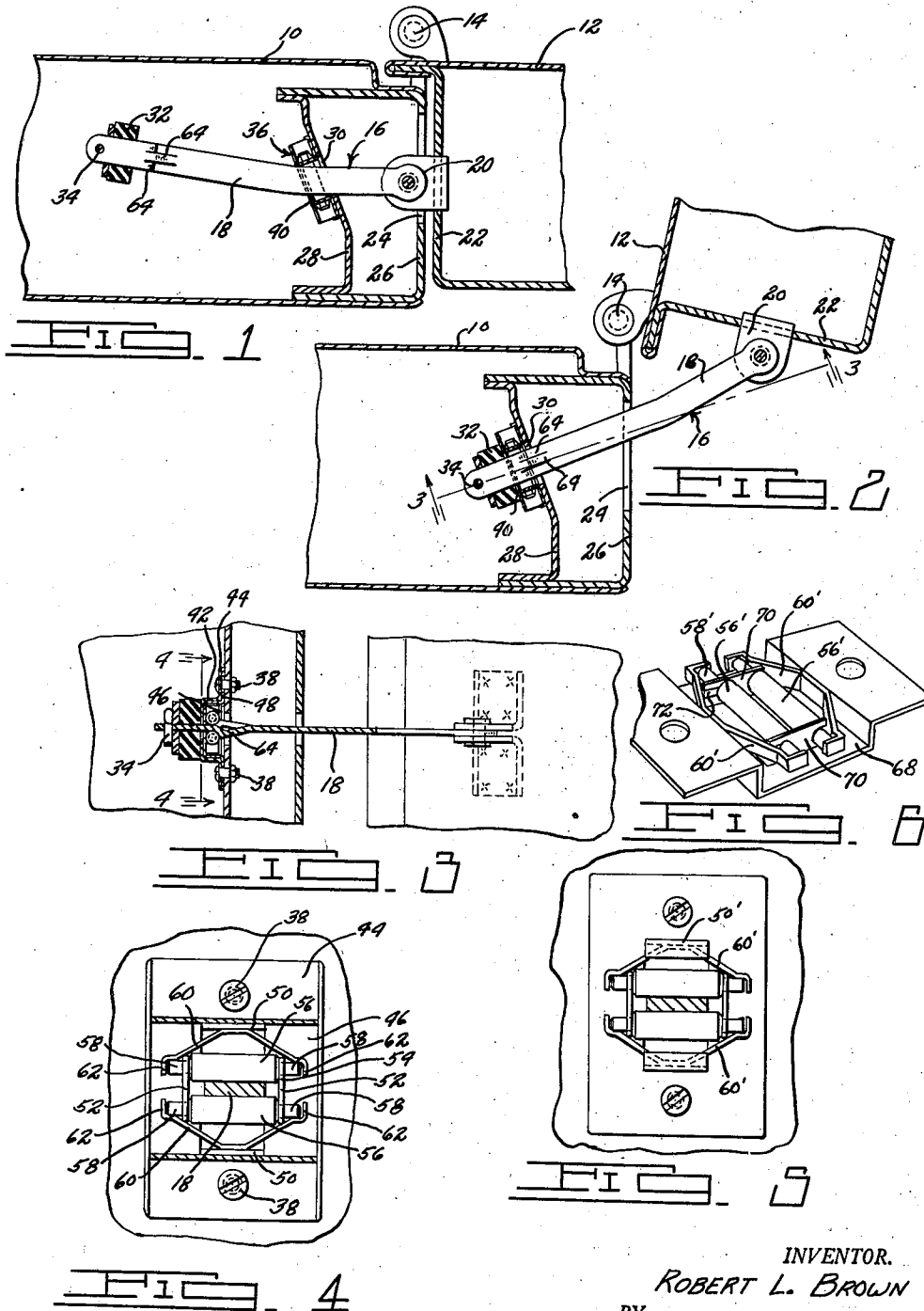
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DOOR CHECK DEVICE

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DOOR CHECK DEVICE

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This invention relates to a device for checking the opening movement of a hinged door and more particularly to an improved roller tensioning means for checking or holding the door in open position.

The general object of the present invention is to provide a device which is simple and inexpensive to manufacture, of strong and sturdy character, and one which is easily installed and efficient in its operation.

One of the objects of the invention is to provide a frictional guide for a door retarding arm which has a body portion, formed from a sheet metal stamping, constructed to retain rollers and resilient means for urging the rollers into contact with a cooperating arm.

Another object of the invention is the provision of integral guide members on the sheet metal stamping which retains the rollers in operating position and to provide the sheet metal stamping with integral supporting members which retain the resilient members in tension on the rollers.

Other objects and advantages of the invention will more fully appear from the following description taken in connection with the accompanying drawings in which—

Fig. 1 is a horizontal sectional view of a portion of a standard automobile body showing a door hinged thereto with the improved check mounted thereon, the door being shown in closed position;

Fig. 2 is a view corresponding to Fig. 1 but showing the door open;

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a view corresponding to Fig. 4, but showing a modified form of the invention; and

Fig. 6 is a perspective view of the stamped supporting member shown in Fig. 5.

Referring to the illustrated embodiment of the invention, there is shown in the accompanying drawings a portion of an automobile body 10 and a portion of an automobile door 12 hinged thereto at 14.

A door check 16, as herein illustrated, comprises an arm 18 preferably of flat sheet metal stock, has one end pivotally connected to a bracket 20 which is spot welded or otherwise secured to the edge wall 22 of the door 12. The arm 18 extends through an opening 24 in the edge wall 26 of the body 10. A reinforcing wall 28 is spaced inwardly from the edge wall 26 and is provided

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with an opening 30 through which the arm 18 extends. The inner and opposite end of the arm 18 is provided with a buffer 32, preferably a rubber pad, and is held against longitudinal displacement by a pin 34 extending through the end of the arm 18.

A striker plate 36 is secured to the inner surface of the reinforcing wall 28 by bolt and nut means 38. The striker plate 36 as illustrated in Figs. 1 to 4 inclusive, comprises a two piece sheet metal housing having an opening 40 there-through, aligned with the opening 30, through which the arm 18 slides.

One of the sheet metal stampings, forming the housing for the striker 36 is formed channel shaped and the other is a flat stamping having integral flanges bent at right angles to the plane of the stamping for supporting the frictional resisting mechanism, hereinafter more fully described by reference to Fig. 4.

The channel shaped stamping 42 has lateral flanges 44 which are in a plane parallel to the base 46 of the channel and contact the opposite end faces of the flat stamping 48 with the base 46 spaced therefrom. Stamped from the body portion of the base 46 are turned up flanges 50 which extend at right angles to the plane of the base 46 and other flanges 52 are turned out of the base in the same direction as the flanges 50 but extend in a plane at right angles to the plane of the flanges 50. The end edges of the flanges 52 are notched as at 54. Rollers 56 having end portions 58 of reduced diameter are positioned between the flanges 52 with the reduced end portions 58 received in the notches 54.

Compression springs 60, preferably formed from flat spring stock and bent to a V-shape are positioned between the reduced ends 58 of the rollers 56 and the inner faces of the flanges 50. The opposite ends of the springs 60 are bent as at 62 to overlie the ends of the rollers 56. After the rollers 56 and springs 60 have been assembled in the flanges 50 and 52, the channel stamping 46 is applied to complete the assembly of the striker plate 36.

Deformed ribs 64 having inclined surfaces adjacent to the buffer end of the arm 18 serve in cooperation with the rollers 56 to releasably hold the door in open position. It will be understood that as the door nears its open position, the ribs 62 force the rollers apart against the compression of the springs 60 and after the ribs have passed between the rollers the resistance to overcome the springs holds the door in open position.

Referring now to Figs. 5 and 6, I have shown a modified form of the striker in which the cost of manufacture has been reduced by eliminating the channel cover plate and securing the operating parts in assembled relation by upsetting the flanges 50' into inwardly directed flanges 66 over the edges of the springs 60' after they have been assembled. Thus, the entire assembly is formed from a single stamping, a pair of rollers and a pair of springs, all held in assembled relation by integral parts of the stamping which forms the securing means for holding the striker in operative position.

As shown in Fig. 6, the assembly may comprise a channel shaped plate 68, having struck up flanges 70 from the base portion of the channel. The flanges 70 are provided with lateral slots 72 for receiving the ends 58' of the rollers 56'. The springs 60' are held in position between the side walls of the channel 68. Thus, the entire assembly comprises a stamping, two rollers and two springs, held in assembled position and readily attached to a casing.

The striker is inexpensive to manufacture, the parts are readily assembled, and it is of a strong and sturdy character.

It will be understood that various changes, including the size, shape, and arrangement of parts may be made without departing from the spirit of my invention, and it is not my intention to limit its scope other than by the terms of the appended claims.

I claim:

1. A striker plate for a door check, comprising a stamped sheet metal plate having an opening formed in the body portion thereon, a pair of oppositely disposed flanges bent from the body thereof adjacent the opening and extending at right angles to the plane of said body portion, a pair of oppositely disposed flanges in a plane at right angles to said first named flanges and at right angles to the plane of said body portion, notches in the end edges of said last named flanges, rollers journaled in the notches of said last named flanges, and compression spring means between each roller and the adjacent flange of said first named flanges.

2. A striker plate for a door check, comprising a stamped sheet metal plate having an opening formed in the body portion thereon, a pair of oppositely disposed flanges bent from the body thereof adjacent the opening and extending at right angles to the plane of said body portion, a pair of oppositely disposed flanges in a plane at

right angles to said first named flanges and at right angles to the plane of said body portion, notches in the end edges of said last named flanges, rollers journaled in the notches of said last named flanges, and compression spring means between each roller and the adjacent flange of said first named flanges, said first named flanges being bent inwardly in overlapping relation with said spring.

3. A striker plate for a door check comprising a sheet metal plate, a pair of oppositely disposed flanges bent from the plane of the plate and extending at right angles to the plane thereof, a pair of oppositely disposed flanges extending in a plane at right angles to said first named flanges and at right angles to the plane of said plate, notches in the end edges of said last named flanges, rollers journaled in the notches of said last named flanges and V-shaped compression springs between said first named flanges and said rollers, the base of the V in contact with the flange and the free ends of the V-shaped spring in contact with the outer periphery of said rollers outwardly beyond the faces of said last named flanges.

4. A striker plate comprising a base plate, a pair of spaced rollers adjacent one face of said plate, compression springs for urging said rollers radially toward each other, and flanges struck from the body portion of said base plate forming an opening in alignment with the space between said rollers, said flanges forming the sole support for said rollers and said springs.

5. A striker plate comprising a base plate, a pair of spaced rollers adjacent one face of said plate, compression springs for urging said rollers radially toward each other, and flanges struck from the body portion of said base plate forming an opening in alignment with the space between said rollers, said flanges forming the sole support for said rollers and said springs, a portion of said flanges forming an abutment for said springs and other of said flanges forming a bearing for said rollers.

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