

May 28, 1929.

A. C. EARHART

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DOOR CHECK OR STOP

Filed Aug. 4, 1927

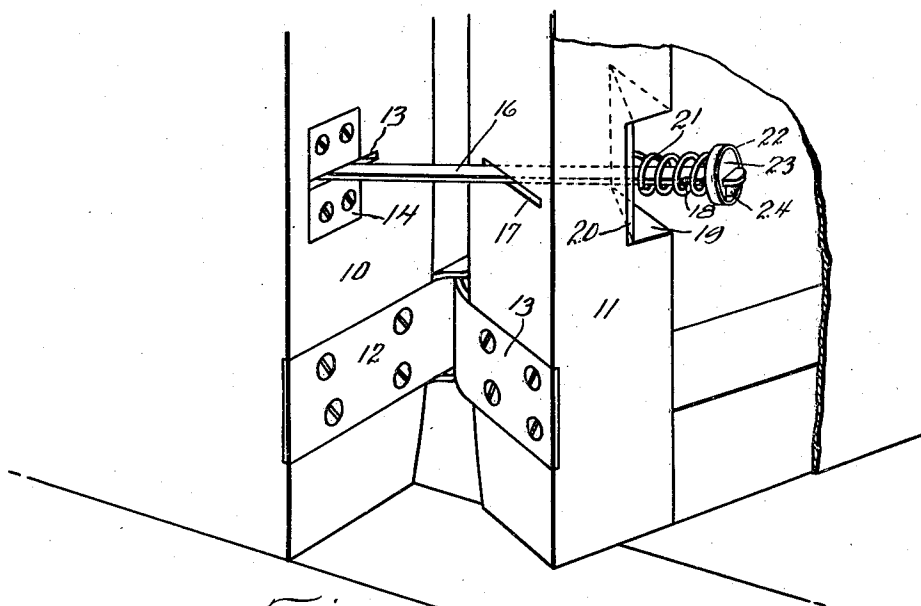


Fig. 1

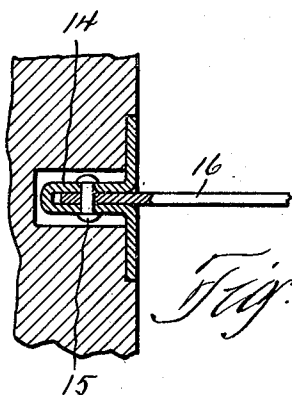


Fig. 3

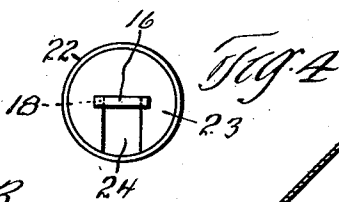


Fig. 4

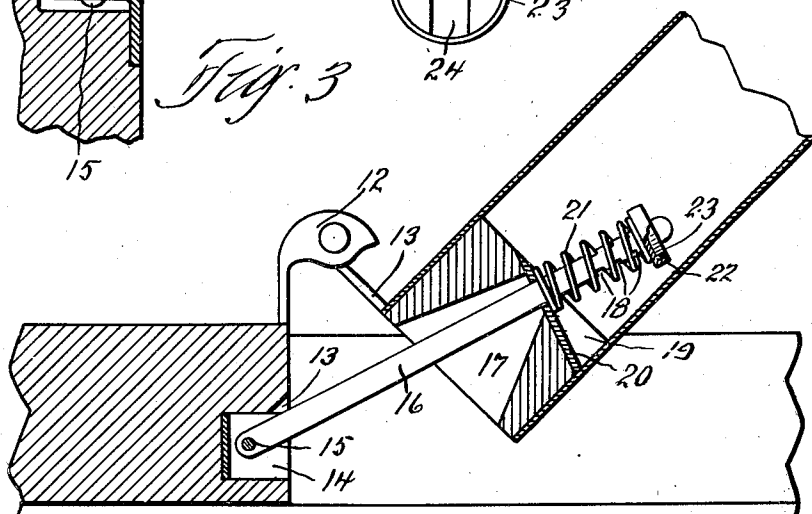


Fig. 2

Inventor

A. C. Earhart

By

Stuel Brock & West

Attorneys

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ALBERT C. EARHART, OF CLEVELAND, OHIO.

DOOR CHECK OR STOP.

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This invention relates generally to door checks or stops and more particularly to one for limiting the outward movement of the door of an automobile or similar vehicle.

5 The object of the invention is to provide a simple and efficient form of stop which can be easily applied to the frame members of the casing and door without impairing the strength of either and a still further object is to provide a device in which the tension of the arresting spring can be adjusted as desired. A still further object is to provide a device which shall be exceedingly simple and inexpensive.

15 With these various objects in view the invention consists in the novel features of construction and in the manner of combining or arranging the same all of which will be fully described hereinafter and set forth in the appended claims.

20 In the drawings forming a part of this specification I have shown one form of my invention and in which Fig. 1 is a perspective view showing parts of the door and casing frames with my invention applied thereto; Fig. 2 is a horizontal sectional view showing certain parts in plan; Fig. 3 is a detail sectional view showing the manner of connecting the rod to the looped plate carried by the casing and Fig. 4 is a face view of the retaining washer.

25 Referring to the drawings, 10 indicates a casing member of the automobile and 11 a member of the door frame, said parts being connected together by means of the usual type of hinge 12. The face of the casing member 10 is recessed as shown at 13 and in this recess is fitted the looped plate 14, the outer vertical members being secured to the face of the casing while the parallel portions thereof fit into the recess, as most clearly shown in Fig. 3.

30 Pivotaly connected to the looped plate by means of a pivot 15 is one end of a flat rod 16, said rod passing through a kerf 17 cut in the door frame 11, the free end of said flat rod having oppositely disposed notches 18 cut in opposite sides thereof. The kerf 17 is made flaring, as shown, in order to accommodate the swinging movement of the flat rod as the door is swung upon the hinge 12. The opposite face of the door frame is cut away as indicated at 19 and seated in said cut-away portion is a cushioning strip 20 of leather or other suitable material and through which the flat rod 16 passes.

A coil spring 21 surrounds the free end of the flat rod 16, one end of said spring contacting with the cushioning strip 20 while the other end contacts with a flanged disk 22 which is slotted to receive the end of the rod. This flanged disk 22 receives a washer 23 which in turn is provided with a wide slot or opening 24 for engagement with the notched end of the rod 16, it being possible to adjust this washer along the rod 16 and engage it in any one of the series of notches 18 in order to impart the desired tension to the spring 21, or to change the limit to which the door may be opened and thereby permit a door check of a standard size to be used with various designs of body construction. This washer 23 being contained within the flange of the disk 22, it is impossible for said washer to become disconnected from the rod until the flanged disk has been separated from said washer.

When the parts are assembled as shown in Figs. 1 and 2, it is obvious that when the door of the automobile is opened its ultimate movement will be arrested by the rod 16 carrying at its free end the stop washer which in turn bears upon the coiled spring which is compressed as the door is swung to a position substantially at right angles to its normal or closed position. The kerfs and recesses being thin or narrow do not impair the strength of the members in which they are made.

All of the metal parts of the door check with the exception of the coil spring 21 are formed by stamping the same from sheet metal thus making possible the production of the door check at a minimum cost.

With the parts of the bracket arranged as above described and illustrated, the maximum strength is obtained from the material used. By using a flat bar 16 and pivoting it to swing in the plane of the bar the width of the material resists any tendency of the door to bend the bar as the door reaches the limit of its swing.

By using the particular adjustable stop assembly or its equivalent, threading of the rod 16 is obviated and the rod may be formed by a single operation, and with the flat bar pivoted between ears of substantial width on the bracket 14 the parts remain tight for a long period of time and rattling of the parts when in use is eliminated.

Having thus described my invention, what I claim is:

1. In combination with elements comprising a door and casing, a check for said door

comprising a sheet metal bracket member secured to one of said elements and having an ear portion, a flat rigid bar pivoted at one end to said ear to swing in the plane of the width of said bar, the other of said elements having a slot through which said bar projects, the free end of said bar having spaced recesses therein, an adjustable stop having means for engaging in said recesses to retain the same in any desired position of adjustment on said bar, and a resilient element on said bar disposed between the inner face of the slotted element and said stop.

2. In combination with elements comprising a door and casing, a check for said door comprising a sheet metal bracket member secured to one of said elements and having an

ear portion, a flat rigid bar pivoted at one end to said ear to swing in the plane of the width of said bar, the other of said elements having a slot through which said bar projects, the free end of said bar having a series of oppositely disposed notches, a bifurcated member adapted to engage in any pair of said notches, a cup washer member received on said bar and in which said bifurcated member fits for retaining it in place, and a resilient member on said bar and interposed between said cup washer and the inner side of said slotted element.

In testimony whereof, I hereunto affix my signature.

ALBERT C. EARHART.