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DOOR CHECK AND HOLD-OPEN

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2 Sheets-Sheet 2

FIG. 3.

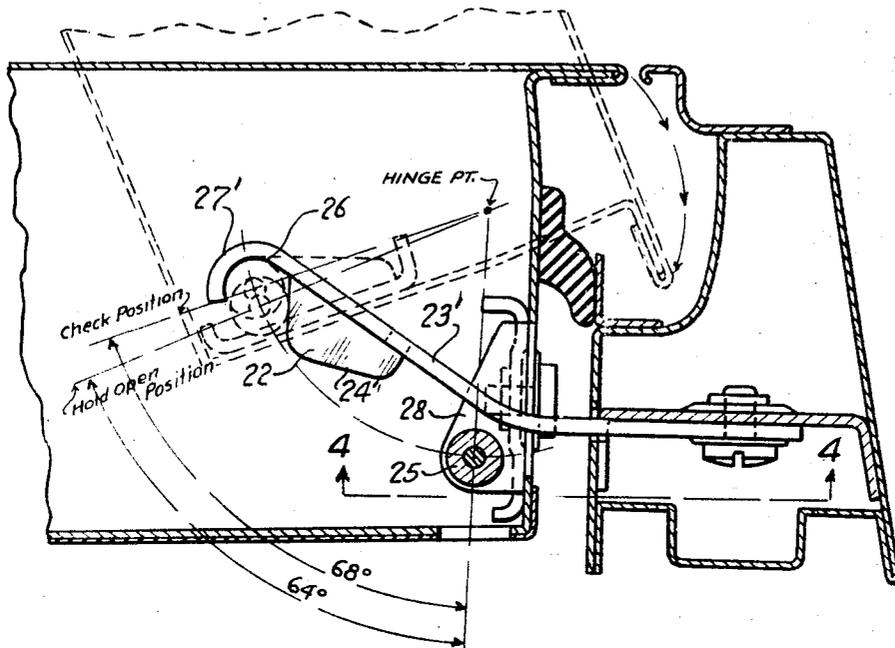
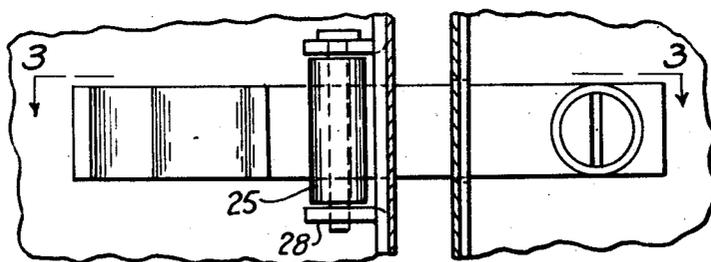


FIG. 4.



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DOOR CHECK AND HOLD-OPEN

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2 Claims. (Cl. 16—85)

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This invention relates to door checks and hold-opens.

It is the object of the invention to provide a door check and hold-open which will be very simple in construction and cheap to manufacture, and which at the same time will effectively perform its functions.

Referring to the drawings:

Fig. 1 is a cross section of the body pillar and a portion of the door showing my improved door check. This is taken on the line 1—1 of Fig. 2.

Fig. 2 is a vertical section through the body pillar and a portion of the door.

Fig. 3 is a cross section through the center pillar and the rear door pillar showing a modified form of the invention.

Fig. 4 is a section on the line 4—4 of Fig. 3.

1 is the body pillar which is here shown as the center pillar of a body. This has an outer member 2 that is welded to the heavy metal stock which forms the pillar proper. The facing 3 is welded to the shell 2 and is exposed between the door overlap flanges 4 and 5 of the front and rear doors, respectively. The facing 3 and the shell 2 form a recess 6 to receive the overlap flange 5 of the rear door. This rear door is hinged to swing on an axis 7 and the overlap flange turns into the recess, as shown in the dotted-lines of this figure. The combined door check and hold-open is a spring arm 8 which is bolted 9 to the body pillar 1. This arm is a spring strip which has a curved or bowed portion which projects out to the dotted-line position 10 when the door is closed. The spring arm has an elbow portion 24 which is bolted to the body pillar. When the door is swung open the periphery of the roller 11 engages this bowed portion and tends to thrust outwardly or force the spring arm from its normal position, as shown by the full lines in Fig. 1. This brings a spring stress on the roller 11 carried by the door which tends to push the door back to the closed position. When the roller has reached the full-open position, that is the outer position, the inclined shoulder 12 snaps behind the roller which comes to rest in the recess or dip 13 in the spring arm. This is the hold-open position. The hook 14 on the end of the arm is arranged to catch on the surface 23 of the door panel to check the door. Inasmuch as the shoulder 12 is gradually inclined it will be obvious that the door may be closed without a great deal of effort as the roller will easily climb the inclined shoulder when closing effort is exercised on the door.

The door pillar 27 is provided with a punched-in

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recess 15 and a punched-out slot 16 through which the spring arm of the check member passes. It will be seen that while the bowed portion 8 is bowed on a radius, that radius is not on a center which is the hinging axis of the door but is on a center outwardly removed from the hinging axis of the door, which is the point 17. This affords a radius that is considerably longer than the radius on which the roller 11 swings and the center is beyond the hinging axis of the door and to the outside thereof. Hence, when the door swings open the arc on which the roller or contact member swings intersects the curvature of the bowed portion of the check arm and the result is it flexes the check outwardly against the spring resistance in the check arm. The result is it puts the check under stress tending to close the door.

It will be noted that the roller or contact member 11 is carried on a plate 18 which is secured to the jamb face of the door. The plate has turned-in-ports 19 which support the pin 20 about which the roller turns. The roller has a bearing bushing 21 on the inside which turns on the pin 20.

In the modified form shown in Figs. 3 and 4 I provide a bump 22 or block on the end of the check. This has a tapered surface 24' which is struck by roller 25 and this causes the spring strip 23' to be pressed back and then the roller 25 snaps behind the block into recess 26. This is indicated by the legend "Hold Open Position" in Fig. 3. The turned-over end 27' of the check arm engaging with the roller acts as the final check of the door. This is indicated by the legend "Check Position" in Fig. 3. Roller 25 is carried by the bracket arms 28. The back of the block acts with the roll to hold the door open.

It will be obvious that the positions of the check arm and roller might be reversed so far as their placement on the door and body pillars is concerned.

In the drawings, Figs. 1 and 3, where the legend "Hinge Point" is used, this is the hinge axis on which the door swings on the body pillar. In Fig. 3, there is a legend "Check Position" and a legend "Hold Open Position". These are the angular positions from a radius parallel with the jamb face of the door projected from the hinge point when the door is finally checked and held open. The check position happens, in this case, to be an angle of 68° and the hold open position an angle of 64°. In other words, the door travels through 68° before it is finally checked, and then rebounds 4° to the hold open position.

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What I claim is:

1. A door check and hold-open for use on vehicle bodies or similar places comprising a spring check arm member fixedly secured on one of the pillars of the door and body, the end of the check arm being curved to form a recess, and a block secured to the arm ahead of the recess and having an inclined face, a contact member secured to the inside of the other pillar and arranged when the door is thrown open to contact the inclined face on the block to force the check arm out of the path of the contact member to then drop behind the block and into the recess formed by the turned-over end of the check arm to check the door and act as a hold-open.

2. A door check and hold-open for use on vehicle bodies or similar places comprising a spring check arm member fixedly secured on one of the pillars of the door and body, the end of the check arm being curved to form a recess, and a block secured to the arm ahead of the recess and hav-

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ing an inclined face, a roller secured to the inside of the other pillar and arranged when the door is thrown open to contact the inclined face on the block to force the check arm out of the path of the roller to then drop behind the block and into the recess formed by the turned-over end of the check arm to check the door and act as a hold-open.

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