

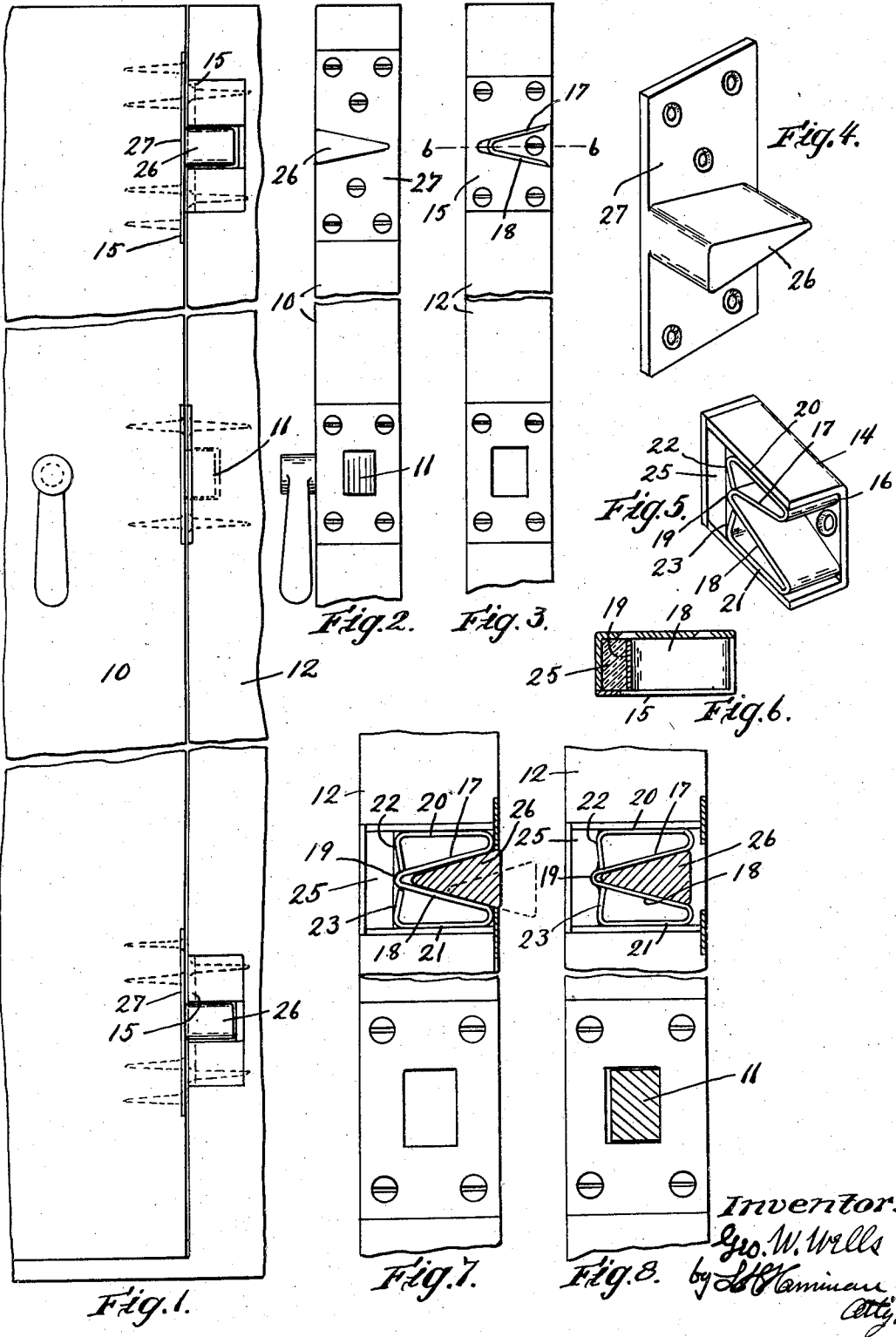
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COMBINED DOOR HOLDER AND BUFFER

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UNITED STATES PATENT OFFICE

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COMBINED DOOR HOLDER AND BUFFER

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This invention relates to that class of devices which are generally employed in connection with the doors of closed body automobiles for the purpose of causing the door to be properly aligned with the casing, or jamb when it is closed and for supporting it so that it will not rattle while in closed position, devices being of this character generally known as "dove tails".

10 In the construction of closed body automobiles it has been customary to provide a "dove tail" adjacent the middle portion of the door, or adjacent the latch, and to provide a pair of "bumpers" or "buffers", adjacent the top and bottom of the casing, with which the door is engaged at the end of its closing movement to receive the impact of the door when it is closed.

15 These "bumpers" usually consist of a piece of resilient rubber which is arranged to be somewhat compressed when the door is in latched position and which usually assist in preventing rattling of the door when closed as well as in cushioning its closed movement.

20 In my pending application, Serial Number 280,123, filed May 24, 1928, I have disclosed a form of dove tail which not only brings the door into correct alignment with the jamb, if it tends to sag, but also provide a construction in which the door holding means is rigidly locked against up and down movement, and at the same time permits some leeway to the workman in installing the device in relation to the latching position of the door, as distinguished from the type previously employed which yields sufficiently to permit some up and down movement of the door and consequent rattling.

25 The objects of my invention are to provide a form of door holding means which will have the advantages of the "dove tail" of my said application and at the same time will provide a simple and effective bumper, so that, by installing a pair of said devices, in lieu of the ordinary bumpers, the use of a dove tail may be eliminated and at the same time more satisfactory results may be secured.

30 I accomplish these objects, primarily, by

providing a socket device which is so mounted in the jamb that it will yield in the direction in which the door swings, and which is adapted to receive an aligning projection on the door, so that the door will be correctly aligned with the jamb and will be rigidly held against up and down vibration, the inward movement of the socket device being cushioned, so that the impact of the door when closed will be absorbed as gradually as is necessary and the door may be latched within a sufficient range to enable the work of installation to be performed without difficulty.

35 For a more complete understanding of the invention reference is made to the following specification, in connection with the accompanying drawings in which:—

Fig. 1 is a side elevation of portions of a door and its jamb in which devices embodying my invention are mounted.

Fig. 2 is an edge elevation of a portion of the door.

Fig. 3 is an edge elevation of a portion of the jamb.

75 Figs. 4 and 5 are detail views in perspective of the male and female members, respectively, of the device.

Fig. 6 is a sectional view at line 6—6 of Fig. 3.

80 Figs. 7 and 8 are edge views of a portion of the jamb illustrating the cooperative action of the members.

In the drawing the door 10 is indicated as having the usual spring latch 11, which engages with the jamb, or door casing 12 when in closed position, the door being of the usual horizontally swinging type.

85 According to my invention the jamb is laterally recessed to receive a metal casing 14 of rectilinear form, said casing being open at the outer side and outer end and being approximately flush with the side and front surfaces of the jamb, and an angular face plate 15 is provided, which covers the open side and end of the casing, except that an opening is provided therein to permit the male member of the device to pass therein, as hereinafter described.

90 The female member 16 of the device pref-

erably consists of a strip of stiff metal bent to provide a V-shaped socket at its middle portion having converging top and bottom sides 17 and 18, respectively, which extend inwardly from the outer end of the casing and meet in a rounded middle or bottom portion 19, and parallel top and bottom side portions 20 and 21, which are closely, but slidably fitted to the top and bottom inner sides of the casing, and extend inward from the outer ends of the converging portions 17, 18, to points opposite the middle portion 19, at which point they are bent at right angles towards each other, to form bracing end portions 22, 23, which are respectively engaged with the outer sides of the converging portions 17, 18. A resilient cushion 25, preferably of rubber, is provided in the casing 14 between its inner end wall and the end portions 22, 23, and middle portion 19 of the member 16, the outer end of the member being normally held by said cushion in firm engagement with the inner side of the face plate 15.

The male member of the device consists of a metal wedge shaped projection 26, which is integrally formed with a base plate 27, and the sides of which taper correspondingly to the sides of the socket formed by the portions 17 and 18, said plate 27 being secured to the edge of the door in such a position that, when the door is swung to a closed position and moves in the path which it is designed to move, with relation to the jamb, the horizontal plane which bisects the angle between the sides 17, 18 of the socket, also bisects the angle between the top and bottom sides of the wedge, or projection 26, so that the top and bottom sides of the latter will simultaneously engage the top and bottom sides 17, 18 of the socket. The arrangement is such that, when these sides come into engagement, the door will not be quite fully closed or latched, so that, on further closing movement of the door, the whole member 16 will slide inward in the casing 14, causing the cushion 25 to be compressed until the door moves inward to the point where the latch will be forced outward by its spring into the socket of the jamb, as indicated in Fig. 8. The closing movement of the door, is thus effectively cushioned.

In case the door sags, as it is likely to, after a period of use, the end portion of the wedge will pass into the socket at a level somewhat below that of the horizontal bisecting plane of the socket, so that the under side of the wedge will engage the under side 18 of the socket before the upper sides thereto engage, as indicated by the dotted position of the wedge in Fig. 7, and, on further closing movement of the door, the wedge will slide upward on the surface of said under side 18, causing the door to be lifted to its correct position, so that the

wedge will engage both sides of the socket and the whole socket will be forced inward, as before described.

In case the door sags excessively, so that the frictional engagement of the bottom side of the male member with the bottom side 18 of the socket is so great that the whole female member 16 is forced inward, the top side of the socket will be moved inward also, so that, when the resistance of the cushion 25 becomes so great that the frictional resistance is overcome, the male member will be forced into the socket, lifting the door into correct alignment with the jamb and bringing the top sides of the male member and socket into engagement, so that the door will then be rigidly held against up and down movement.

In practice one of the above described devices is located near the bottom and another near the top of the door, in the positions in which the ordinary bumpers are usually placed, although it will be understood that the number used is immaterial. It will also be understood that, while, as a practical matter, it is much more desirable to mount the female member, in which the cushion is incorporated, on the casing and the male member on the door, the opposite arrangement would be operative and equivalent thereto.

With the above described construction, when both sides of the wedge are firmly engaged with both sides of the socket, the door will be rigidly held against all vertical movement and when the socket has yielded sufficiently to permit the door to latch, the outward pressure of the cushion will hold the latch firmly against the side of the casing recess into which it extends, so that all rattling of the door is prevented. As the socket yields inward after the projection on the door becomes firmly wedged therein, some range of movement is permitted before the door moves inwardly to a sufficient extent to permit it to become latched, so that installation of the device may be made without difficulty, while at the same time the advantages of having the door held against up and down movement by means which are rigid are secured, and the necessity of having the holding means slightly yieldable up or down is avoided.

While a metal spring may be employed in lieu of the rubber cushion, the latter is considered more desirable for practical reasons and it may be readily renewed, when necessary, by merely removing the face plate 15 and the socket 16.

I claim:

A door holding device comprising male and female members movable relatively in a predetermined path and having correspondingly formed sides arranged for engagement each with the other as the door

is closed, said female member being slid-
ably movable in the direction of said path
and non-movable transversely thereof and
having its side non-yieldable relatively
thereto, and a cushioning device arranged
5 to resist inward movement of said female
member when engaged by said male mem-
ber during said closing movement and to
yield to permit the female member to be
forced inward by the male member.

10 In testimony whereof, I have signed my
name to this specification.

GEORGE W. WELLS.