Sept. 20, 1932. R. G. MOORE 1,878,248

ANTIRATTLE DOVETAIL FOR DOORS

Filed Dec. 24, 1930

Fig. 1.

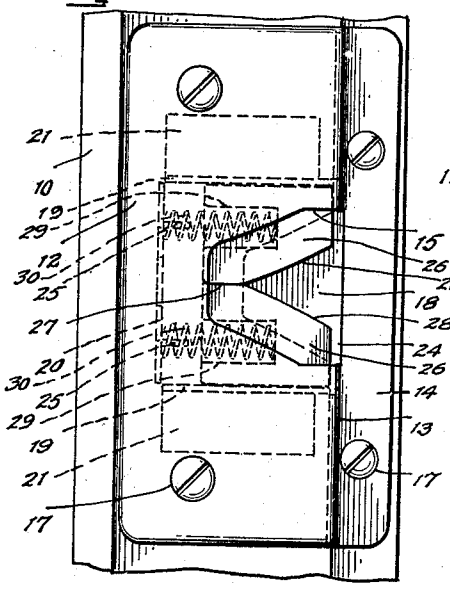



Fig. 2.

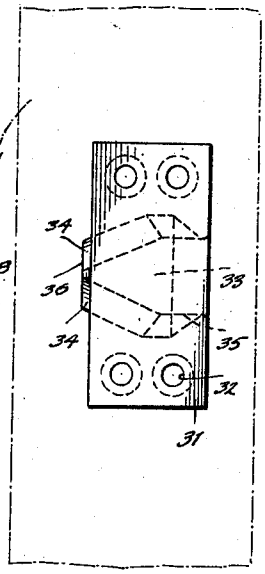



Fig. 3.

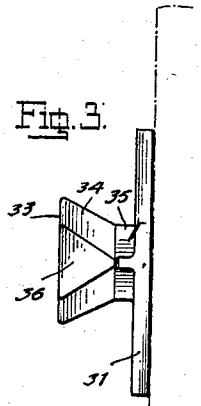



Fig. 4.

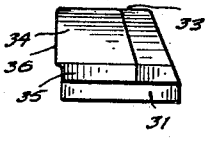



Fig. 5.

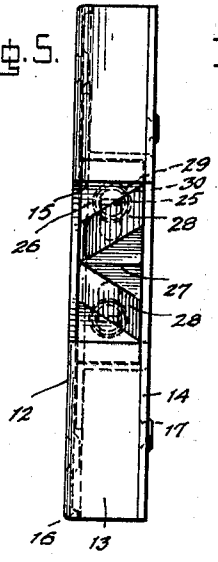



Fig. 6.

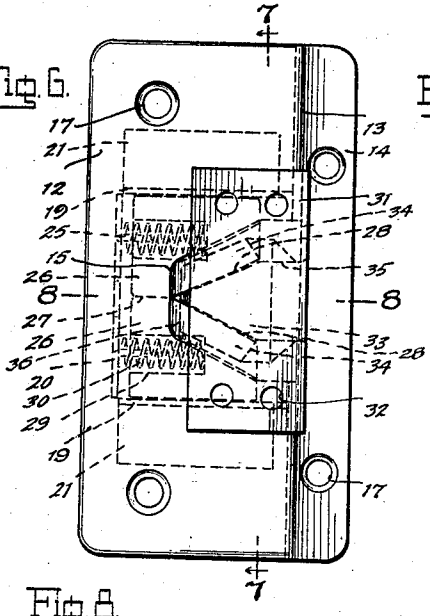



Fig. 7.

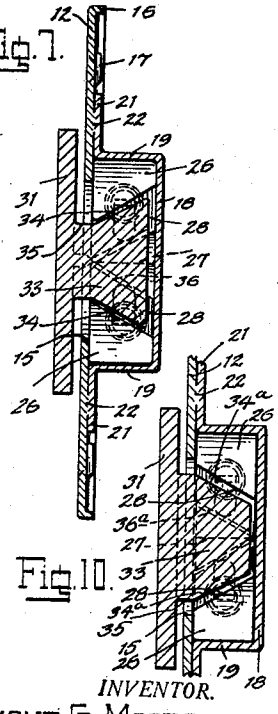



Fig. 8.

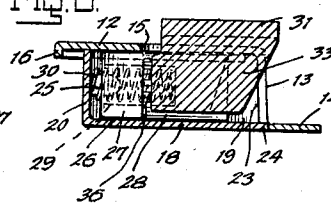



Fig. 9.

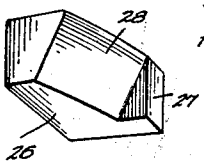



Fig. 10.



INVENTOR.
RAYMOND G. MOORE.
BY
Starr Matthews.
ATTORNEY.

Patented Sept. 20, 1932 1,878,248

# UNITED STATES PATENT OFFICE

RAYMOND G. MOORE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE BASSICK COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT

## ANTIRATTLE DOVETAIL FOR DOORS

Application filed December 24, 1930. Serial No. 504,515.

The present invention relates to anti-rattle dovetails, particularly for automobile doors, an object being to provide a device of this character which will prevent the rattle usually resulting from the vibration and wearing of the doors, effectually retaining the same against vertical movement and wear, and which will at the same time exert a tightening pull on the door in a line parallel to the plane of the door thus preventing any rattle that may result from movement and wear in this direction. It is particularly proposed, in the exemplary embodiment illustrated, to provide a device in which a socket member is provided with self adjustable resiliently supported dovetail members adapted to have a wedge member engaged between them, the respective dovetail members being supported against vertical movement, and in which there is a dovetail engagement between the dovetail members and the wedge member exerting a force in a horizontal line transversely of the lateral adjustment of said members.

With the above and other objects in view embodiments of the invention are shown in the accompanying drawing, and these embodiments will be hereinafter more fully described with reference thereto, and the invention will be finally pointed out in the claims.

In the drawing:—

Fig. 1 is a front elevation of the dovetail socket member, according to the present embodiment of my invention, and showing the same attached to the door frame.

Fig. 2 is a rear elevation of the wedge member, in its relation for engagement with the socket member as shown in Fig. 1 and showing the position of the vertical edge of the door in dot-and-dash lines.

Fig. 3 is an inner end elevation of the wedge member showing it attached to the door.

Fig. 4 is a side elevation thereof.

Fig. 5 is a forward side elevation of the socket member.

Fig. 6 is a front elevation of the socket member with the wedge member engaged therein.

Fig. 7 is a vertical sectional view taken along the line 7—7 of Fig. 6.

Fig. 8 is a horizontal sectional view taken along the line 8—8 of Fig. 6.

Fig. 9 is a perspective view of one of the wedge blocks employed.

Fig. 10 is a vertical sectional view, similar to Fig. 7, partly broken away, and showing a modified form of the invention.

Similar reference characters indicate corresponding parts throughout the several figures of the drawing.

Referring to the drawing, the device, according to the present embodiment of the invention, comprises a socket member adapted to be secured to the door frame 10 within a suitable cut-out recess, and a wedge member adapted to be secured to the edge of the door 11 in relation to enter the socket member upon closing of the door.

The casing of the socket member comprises an outer part consisting of a face plate member 12 preferably formed of sheet metal, having a flange 13 at its forward edge bent inwardly at a slightly obtuse angle, and a lip 14 bent forwardly from the flange 13. A rearwardly converging opening 15 is provided in the face plate and extends across the flange 13 to the lip 14, the forward portion of the opening having its upper and lower edges disposed in parallel relation. An inwardly bent rim flange 16 is formed at the upper and lower edges of the face plate, and counter-sunk screw holes 17 are provided near the upper and lower edges of the plate member and the flange 14.

The inner or box part of the casing is formed from sheet metal and comprises a rectangular portion 18 having upper and lower wall flanges 19 bent from the upper and lower edges, and a rear wall flange 20 bent from the rear edge. Attaching ears 21 are bent outwardly from the wall flanges 19 and are adapted to be secured to the inner side of the face plate 12, preferably by spot welding, as at 22. The forward edges of the wall flanges 19 are cut, as at 23, Fig. 8, to correspond to the angle of the flange 13 and the forward edge of the portion 18 is provided with a projecting lip 24 which extends into the opening 15 and abuts the edge of the flange 14, so that said portion 18 and

the flange 14 are in flush relation to each other.

A pair of inwardly bent lugs 25 are struck from the rear wall flange 20 of the casing for supporting the ends of the springs, presently to be more fully referred to.

A pair of opposed block members 26 of generally rectangular shape are disposed within the casing, these blocks having flat parallel surfaces 27 adjacent the inner ends in sliding engagement with each other and cooperating with the upper and lower parallel walls of the casing to prevent vertical displacement of the blocks. Inclined faces 28 extend from the flat faces 27 to the forward ends of the blocks in diverging relation, and are diagonally chamfered or undercut, so that they diverge from their upper to their lower edges, the lower edges being set back from the flat faces 27 as clearly indicated in Fig. 9. The faces 28 are slightly arcuate longitudinally which permits firm engagement of the wedge member irrespective of slight variations in the vertical alignment of the door. Pockets 29 are provided in the rear walls of the blocks within which are engaged coil springs 30 positioned upon the lugs 25 of the casing, and which press the blocks forwardly against the flange 13, as shown in Fig. 1, while permitting them to be forced laterally inwardly as shown in Figs. 6, 7 and 8.

The blocks are preferably assembled within the casing through the opening 15, this being done conveniently by first inserting one of the blocks and its spring, and then inserting the other block and its spring, pressing the first block inwardly while the second block is being inserted. The blocks may be of any suitable material, and because of the protection against breakage afforded by the casing, may be of fibre, bakelite, or other suitable squeak preventing, self-lubricating material.

The wedge member comprises an attaching base 31 having counter-sunk screw holes 32, and a rigid wedge projection 33, having inclined undercut faces 34 substantially corresponding to the inclined chamfered faces 28 of the blocks 26. A reduced neck 36 portion connects the faces 34 to the base, and the forward triangular face 36 of the wedge projection is slightly projected with respect to the neck portion and the base, so that it may be clear of the plate 12 of the socket member in the engaged relation of the wedge members as indicated in Fig. 8.

The operation is as follows:—

When the door is in open position the blocks 26 are projected forwardly against the flange 13 of the casing, as indicated in Fig. 1. As the door is closed the wedge member 33 engages between the blocks, contacting therewith before the door is completely closed, the complete closure of the door causing the blocks to be moved laterally against the pressure of the springs, while the longitudinal inclination of the engaging surfaces is such that vertical pressure will not displace the blocks and cause vibration. The transverse inclination of the contacting surfaces provides a dovetail engagement which through the pressure of the blocks exerts a tightening pull on the door in a lateral direction parallel to the plane of the door, so that it is effectually held tight in this direction and at the hinges.

The door is provided with the usual latch not shown, which engages behind a striker on the door frame, and the present device is such that it permits the door to close sufficiently to allow the latch to operate, and thereupon exerts an outward pressure on the door to force the latch bolt tightly against the striker. Upon release of the latch the device exerts an opening pressure on the door.

Should the wedge member be out of alignment with the socket, due to sagging of the door or inaccurate mounting of the wedge member, the independent movement of the respective blocks will permit them to adjust themselves to the wedge surfaces and perform their cooperative retaining function.

In Fig. 10 I have shown a modified form of the invention in which the inclined faces $34^a$ are transversely inclined in reverse relation to the faces 34 of the first form, and in which the forward triangular face $36^a$ is in reverse relation, the convergence of the faces $34^a$ being away from the attaching base, instead of toward it as in the first form. The blocks 26 are arranged in the casing in reverse relation as shown, and in operation exert a lateral pushing force transversely of the direction of movement of the blocks.

While I have shown the socket member on the door frame and the wedge member on the door, it will be obvious that this arrangement may be reversed, if desired.

I have illustrated and described preferred and satisfactory embodiments of the invention, but it will be obvious that changes may be made therein, within the spirit and scope thereof, as defined in the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. In an anti-rattle device for doors, a socket member, and a wedge member adapted to be engaged therewith, one of said members comprising a pair of independently movable opposed elements adapted to be moved laterally through engagement of the other member therewith, resilient means adapted to oppose said lateral movement, means adapted to prevent vertical movement of said elements, means in association with said members, whereby one of said members is forced in a lateral direction transverse to said lateral movement of said laterally movable elements.

2. In an anti-rattle device for doors, a socket member, and a wedge member adapted to be engaged therewith, said socket member comprising a pair of independently movable opposed wedge engaging elements adapted to be moved laterally through engagement of said wedge member therebetween, resilient means adapted to oppose said lateral movement, means adapted to prevent vertical movement of said wedge engaging element, said wedge engaging elements having transversely converging opposed contact surfaces, and said wedge member having transversely converging contact surfaces for contact with said elements whereby one of said members is forced in a lateral direction transversely to said lateral movement of said elements.

3. In an anti-rattle device for doors, a socket member, and a wedge member adapted to be engaged therewith, said socket member comprising a pair of independently movable opposed wedge engaging elements adapted to be moved laterally through engagement of said wedge member therebetween, resilient means adapted to oppose said lateral movement, means adapted to prevent vertical movement of said wedge engaging elements, said wedge engaging elements having longitudinally and transversely converging opposed contact surfaces, and said wedge member having longitudinally and transversely converging contact surfaces for contact with said elements whereby said elements are moved laterally and one of said members is formed in a lateral direction transversely to said lateral movement of said elements.

Signed at Bridgeport, county of Fairfield, and State of Connecticut, this 12th day of December, 1930.

RAYMOND G. MOORE.