Oct. 16, 1923. 1,470,952

S. BARUCH

ANTIRATTLING DEVICE FOR VEHICLES

Filed May 26, 1922

Fig. 1.

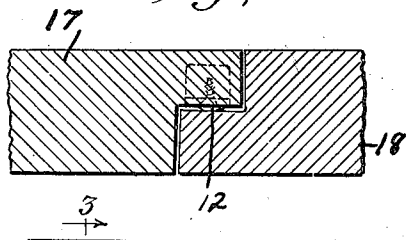


Fig. 4.

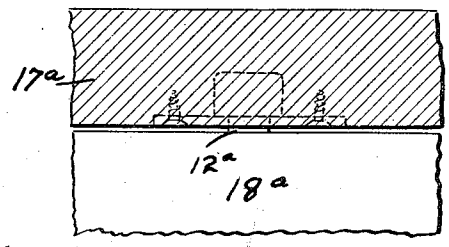


Fig. 2.

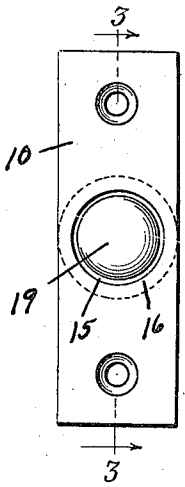


Fig. 3.

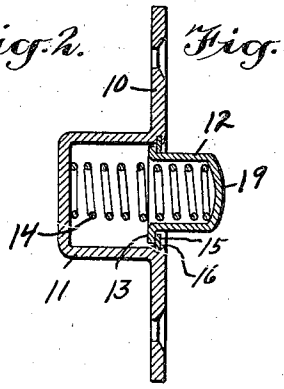


Fig. 5.

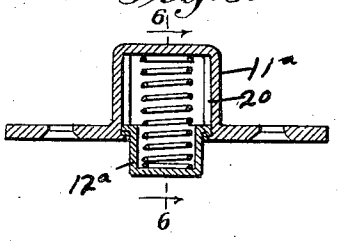


Fig. 6.

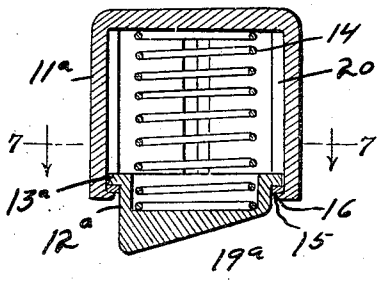


Fig. 8.

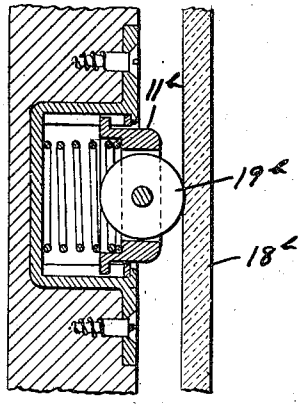
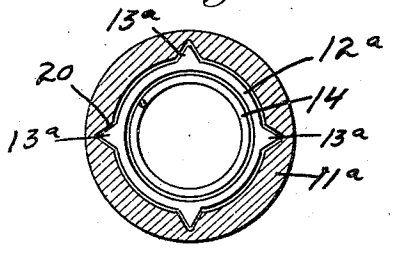


Fig. 7.



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UNITED STATES PATENT OFFICE.

SAMUEL BARUCH, OF NEW YORK, N. Y.

ANTIRATTLING DEVICE FOR VEHICLES.

Application filed May 26, 1922. Serial No. 563,751.

To all whom it may concern:

Be it known that I, SAMUEL BARUCH, a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Anti-rattling Devices for Vehicles, of which the following is a specification.

This invention relates to devices adapted to be used in connection with doors, windows, and other movable parts to prevent rattling, and is particularly designed for use with vehicle windows and doors.

The main object of my invention is to provide a device which is simple and inexpensive to manufacture, easy to apply, and so designed that it cannot get out of order. In my improved device there is provided a contact member of hollow or tubular form and cooperating with a casing or base member to completely enclose, conceal and protect the operating spring which holds the contact member in operative position. The two members which enclose the spring are permanently connected by simple and inexpensive means, but are capable of the desired relative movement to effect the compression or permit the expansion of the spring.

In the accompanying drawings:

Fig. 1 is a transverse section showing one positioning of my improved device in connection with a vehicle door.

Fig. 2 is a plan view of the device.

Fig. 3 is a central longitudinal section on the line 3—3 of Fig. 2.

Fig. 4 is a section similar to Fig. 1, but showing the device applied to prevent vertical movement of the door.

Fig. 5 is a section similar to Fig. 3, but showing the device illustrated in Fig. 4.

Fig. 6 is a transverse section on the line 6—6 of Fig. 5.

Fig. 7 is a transverse section on the line 7—7 of Fig. 6, and

Fig. 8 is a longitudinal section of a further form designed for use with sliding rather than swinging closures.

In the form illustrated in Figs. 2 and 3, there is a casing or base member including a plate portion 10 and a cup-shaped pocket or recess part 11 formed integral therewith. The plate portion 10 may have apertures therein to receive attaching screws, and the cup-shaped part 11 is intended to be countersunk below the plane of the surface to which the plate 10 is attached. In connection with this member I provide a second member 12 which is substantially cup-shaped and of an internal diameter slightly less than the internal diameter of the cup part 11. The cup 12 is provided with a peripheral flange 13 at its open end which may freely slide within the cup 11. The two cups are assembled with the open end of one projecting into the open end of the other so as to entirely conceal and protect a spring 14 within the casing thus produced. For permanently connecting the two cups or casing sections the open end of the cup 11 is provided with an annular shoulder and a washer or annular ring 15 is placed against this shoulder. The ring extends inward radially substantially to the outer surface of the peripheral wall of the cup 12, and is of smaller diameter than the internal diameter of the flange 13. With the parts thus assembled, a portion of the metal of the face of the plate 10 is forced inwardly so as to form a flange 16 overlying the ring 15 and permanently holding the latter in position. This deformation of the metal of the plate 10 may be done by swaging, rolling, or by any suitable form of die.

The device as shown in Figs. 2 and 3 may be inserted in a door casing 17 in such a position that the door 18 in closing impacts against the outer end of the casing section 12 and forces the latter into the casing section 11 to compress the spring 14. The ordinary catch will hold the door in its closed position, but the pressure of the spring 14 will hold the door to the limit of movement permitted by the catch so that the door cannot rattle. The outer end wall 19 of the casing section 12 may be slightly rounded if desired, so that there will be no sharp edges to contact with the door. It will of course be understood that the device may be mounted in the door to engage with the casing, rather than mounted in the casing and engage with the door as above described. The spring 14 is preferably of such size and normal length that when the parts are in the position shown in Fig. 3 there is practically no outward strain on the casing section 12, and the collar or ring 15. The spring may vary in strength according to the character of the device with which it is to be employed.

If the device is to be employed at the upper or lower edge of a swinging member such as a door, it is preferable that the outer end of the movable casing section be inclined so as to present a cam surface along which the door may move in reaching final closed position. As shown in Figs. 4 to 7 inclusive, the casing member 12^a has its outer end wall presenting an inclined surface 19^a, and the device is designed to be employed in the upper member of the door casing 17^a so that the member 12^a has a vertical movement. The door 18^a in closing will strike against the surface 19^a and move the latter upwardly as the door rides in until the high point of the surface 19^a rests upon and presses downwardly against the upper edge of the door. In this construction it is desirable that the casing member 12^a be prevented from rotation. For that purpose the inner surface of the casing section 11^a is provided with longitudinal grooves 20, and the flange at the open end of the casing section 12^a is subdivided into a plurality of narrow flange sections or projections 13^a mounted to slide along the grooves 20, as shown particularly in Fig. 7. By grooving the wall of the casing section 11^a and subdividing the retaining flange into narrow projections, the peripheral wall of the casing section 12^a may be made of slightly larger diameter and have free sliding engagement with the inner surface of the casing section 11^a. The two casing sections serve to enclose the spring 14 and the two casing sections are connected together by the collar 15 and the swaged over flange 16.

Where it is desired to use the device with a sliding rather than a swinging member, the construction may be substantially as shown in Figs. 2 and 3, and the rounded wall 19 be relied upon to present sufficient anti-friction surface for the sliding member. The friction may be further decreased by providing the contact member with a part having rolling engagement with the sliding member. As shown in Fig. 8, a casing section 11^b may have a roller 19^b journaled therein and projecting beyond a slot in the end wall of the casing so as to engage with a glass panel 18^b mounted to slide up and down, as for instance in the upper section of a limousine door. The casing section 11^b is held against rotation about its own axis and may be mounted in a main casing section of substantially the form illustrated in Figs. 5, 6 and 7.

From the foregoing it will be seen that my improved device includes only two casing sections, a spring and a retaining ring. The two casing sections may be of cast brass or other suitable inexpensive material which can be readily swaged over after the assembling operation. The four parts are permanently connected by a single blow of a proper die or by other swaging operation to form the flange 16.

The spring is protected against dust and other foreign materials and the sizes and relative proportions of the parts are such that it is practically impossible for any of them to get out of order. Thus the device is simple in construction, inexpensive to manufacture, and easy to assemble and is reliable in operation.

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

1. In combination a cup shaped casing member having a plate portion integral therewith at the open end, a ring within said open end and of smaller internal diameter than said casing, a portion of said casing wall at the open end thereof being swaged over to retain said ring in position, a contact member substantially of cup shape, and having a peripheral flange having sliding engagement within said first mentioned member and retained by said ring and a spring tending to separate said members.

2. An anti-rattling device including a cup shaped member having a shoulder at its open end, a ring within said open end and resting upon said shoulder, and of smaller internal diameter than said casing, an annular portion of the casing wall at the open end being swaged over to retain said ring in position, a contact member substantially of cup shape and having a peripheral flange of larger diameter than the internal diameter of said ring, and having sliding engagement within said first mentioned member and retained by said ring and a spring normally tending to hold said flange against the inner surface of said ring.

3. An anti-rattling device including a cup shaped casing member provided with a plurality of grooves extending lengthwise thereof upon the inner surface, a second cup-shaped member mounted to telescope within said first mentioned member and facing in the opposite direction, said second mentioned member having a plurality of radially extending projections adapted for sliding engagement in said grooves to prevent relative rotation of said members, a ring secured to the first mentioned member at the open end thereof for limiting the outward movement of the second mentioned casing member, and a coil spring enclosed by said members and normally tending to hold said projections against the inner surface of said ring.

4. An anti-rattling device including a cup-shaped member, a ring within the open end thereof and of smaller diameter than said member, a portion of said member being swaged over to retain said ring in position, a contact member substantially of cup

shape, and having a peripheral flange having sliding engagement within said first mentioned member and retained by said ring, said flange and the inner surface of said first mentioned member having interengaging portions to prevent relative rotation of said members, and a spring enclosed by said members and tending to separate them.

Signed at New York in the county of New York and State of New York this 24th day of May A. D. 1922.

SAMUEL BARUCH.