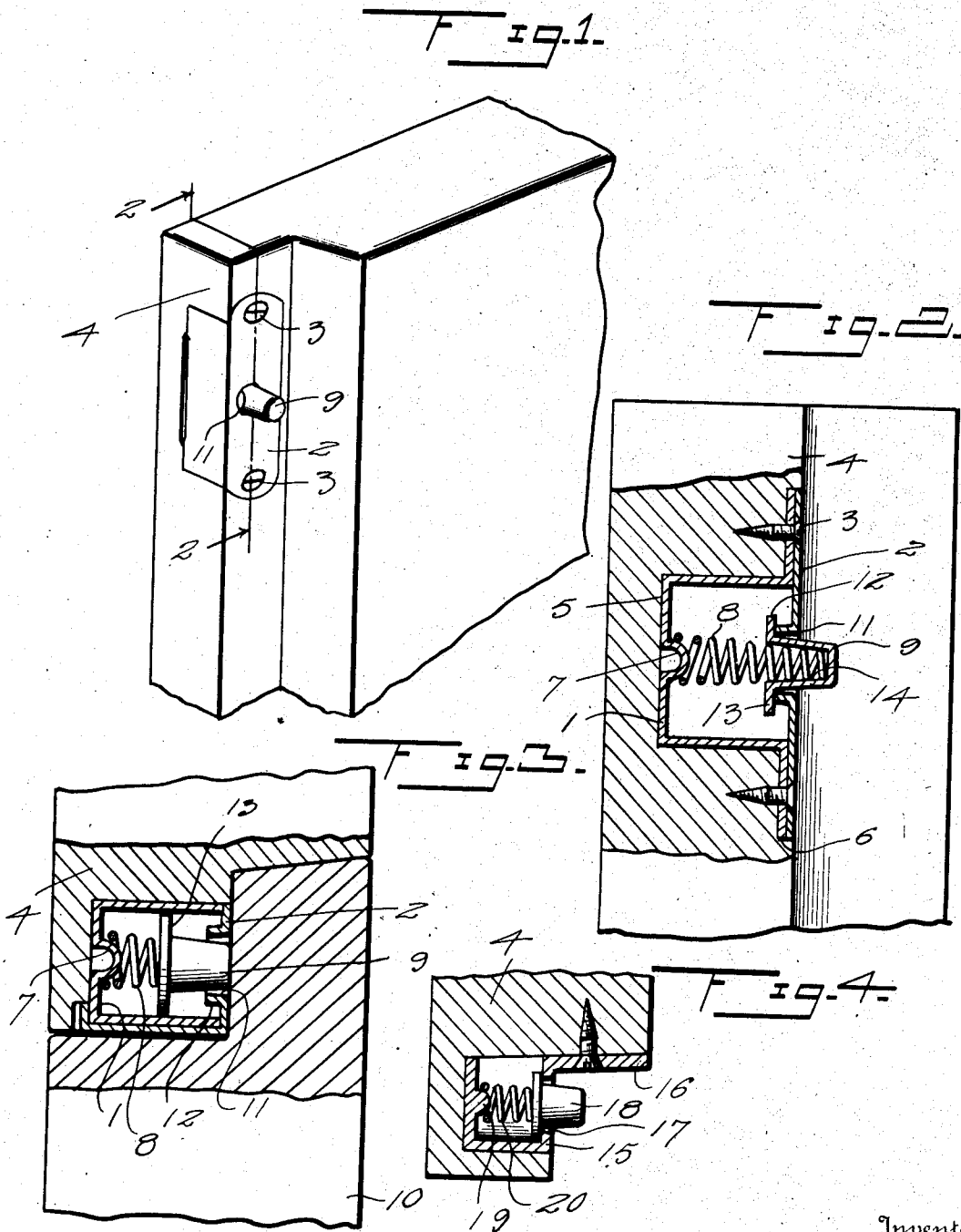


B. H. SEABURY AND J. C. OLLARD,
 BUFFER FOR DOORS.
 APPLICATION FILED MAR. 6, 1918.

1,329,313.

Patented Jan. 27, 1920.
 2 SHEETS—SHEET 1.



Witness
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Fig. 5.

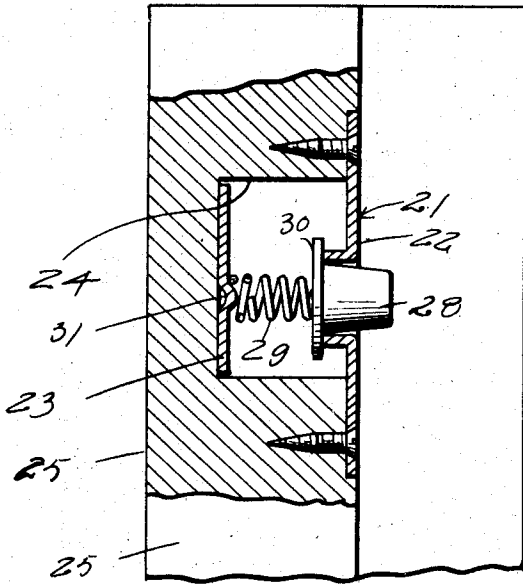


Fig. 6.

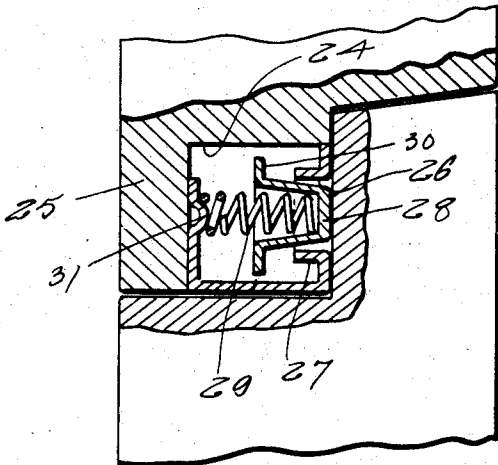


Fig. 7.

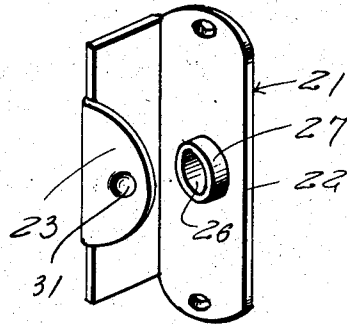
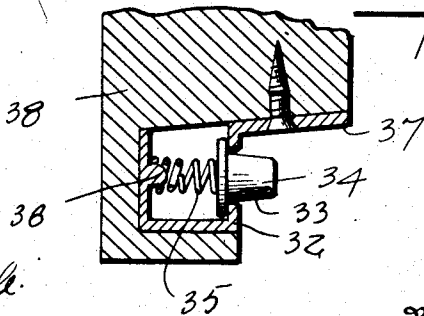


Fig. 8.



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UNITED STATES PATENT OFFICE.

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BUFFER FOR DOORS.

1,329,313.

Specification of Letters Patent.

Patented Jan. 27, 1920.

Application filed March 6, 1918. Serial No. 220,855.

To all whom it may concern:

Be it known that we, BENJAMIN H. SEABURY and JAMES C. OLLARD, citizens of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Buffers for Doors, of which the following is a specification.

The invention relates to devices adapted to engage the doors of automobiles to prevent creaking and rattling thereof.

The object of the present invention is to improve the construction of door buffers and to provide a simple, practical and efficient door buffer of strong, durable and comparatively inexpensive construction adapted to be cheaply installed on various makes of automobiles and other vehicles and capable of permitting the door to be closed gently without slamming and, of holding the door tightly against its latch and at the same time permitting free movement of the door in its own plane without rattle and without the straining and weaving or distortion of the vehicle frame in its travel causing friction on the door engaging portion of the device, whereby the wearing ordinarily incident to such relative movements of the door and the vehicle frame in travel will be eliminated and the durability and effectiveness of the buffer materially increased.

Heretofore door buffers or cushions devised to prevent rattling of the door have generally consisted of rubber cushions or metal devices pressed by short springs. With both of these forms of devices, it is necessary to slam the door in order to compress the rubber or short spring sufficiently to close the door and cause the latch to catch and such devices under such conditions hold the door so tightly that the straining or weaving of the vehicle frame in travel causes the door to rub on the cushion or buffer quickly wearing out the same.

It is an object of the present invention to overcome these objections and to provide a device equipped with a yieldable or floatable door engaging portion capable of both inward and outward movement and lateral movement in any direction and adapted to maintain a constant pressure against the door while permitting the latter to move freely without any wearing or rubbing action of the door on the floating door engaging portion.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Figure 1 is a perspective view of a portion of an automobile body and door jamb provided with a device constructed in accordance with this invention;

Fig. 2 is a vertical sectional view of the same;

Fig. 3 is a horizontal sectional view through the door and door jamb;

Fig. 4 is a sectional view illustrating another form of the invention;

Figs. 5 and 6 are sectional views showing another form of the invention;

Fig. 7 is a detail perspective view of the casing showing Figs. 5 and 6; and

Fig. 8 is a sectional view illustrating still another form of the invention.

In the form of the invention illustrated in Figs. 1 to 3, inclusive, of the drawings, the cushion or buffer comprises in its construction a casing composed of inner and outer plates 1 and 2 secured by screws 3 or other suitable fastening devices to the door jamb 4 of the frame or body of an automobile or other vehicle and mounted in a recess or mortise 5 in the door jamb so as to arrange the casing in flush relation with the same. The inner plate has upwardly and downwardly extending terminal portions 6 which are located in rear of the terminal portions of the outer plate 2 and which are pierced by the screws 3, the latter being adapted to secure the inner and outer plates together as well as fastening the casing to the door jamb. An inner plate 1 may be constructed of sheet metal or other suitable material is provided at the back with a centrally arranged forwardly projecting substantially concavo convex stud 7 preferably formed by stamping it from the sheet metal and providing a rounded pivot for the reception of the inner end of a forwardly or outwardly tapered relatively long coiled spring 8. The coiled spring 8 which is adapted to be compressed by a hollow cap or door engaging

member 9 is also capable of lateral movement to permit an inward and outward and also lateral movement of the cap and formed practically a floating door engaging member adapted to maintain a constant pressure on the door 10 at all times when the same is closed and capable also of allowing relative movement of the door and the frame or body of the vehicle without producing any wear between the door and the tapered cap. The door engaging member is capable of this universal lateral tilting movement, while the spring is under compression, and the universal lateral tilting movement or play increases with the inward movement of the door engaging member and the compression of the spring.

The outer plate is provided with a hole 11 and it has an inwardly tapered annular flange 12 extending inwardly from the hole 11 and forming a tapered reinforced opening which has its taper disposed in the opposite direction to that of the hollow cap 9 so that the hollow cap will have a rocking movement on the inner end or edge of the flange to permit lateral movement in any direction without binding in the opening of the outer plate. The reinforced opening of the outer plate guides the cap which is provided at its inner open end with an annular flange 13 adapted to engage the flange of the front plate to limit the outward movement of the hollow cap. The hollow cap which may be constructed of any suitable material has a tapered socket or interior 14 open at the inner end and closed at the outer end and receiving the tapered end of the spring. The hollow cap with the casing admits of the use of a relatively long spring which with the floating action of the cap will enable the door to be closed gently without slamming.

Instead of constructing the casing of two plates or members of stamped sheet metal, it may advantageously consist of a casting provided with an attaching flange 16 and have an inwardly tapered opening 17 to receive the cap 18 and provided also with a rounded stud 19 to form a pivot for the inner enlarged end of a tapered spring 20. This construction is especially adapted for use on Ford machines and the cheaper makes of automobiles.

In Figs. 5 to 7, inclusive, is illustrated another form of the invention in which the casing 21 is stamped or otherwise formed from a single piece of sheet metal or other suitable material and composed of inner and outer flanges 22 and 23 and a connecting web or portion. The casing is designed to be arranged in a mortise or recess 24 of the door jamb 25 and it is provided in the outer flange 22 with an opening 26 having an inwardly extending annular flange 27 and receiving an outwardly tapered cap 28. The cap con-

stitutes a door engaging member similar to the caps heretofore described and it is urged into engagement with the door by a coiled spring 29 of cylindrical form. A hollow cap is provided at its inner end with a flange 30 which normally bears against the inwardly extending flange 27 of the casing. The inner end of the spring 29 is mounted on a stud 31 stamped or otherwise formed on the inner flange or portions 23 of the casing 21 and preferably substantially concavo convex as shown. The spring bears at its inner end against the inner portion of the casing and at its outer end against the inner face of the outer end of the hollow cap and it is normally spaced from the tapered sides of the hollow cap to provide ample clearance and thereby facilitate a free lateral oscillation of the cap within the opening whereby the cap is laterally movable in any direction and all liability of the binding of the same during such operation eliminated.

In Fig. 8 of the drawings is illustrated a door buffer possessing substantially the same characteristics as the form shown in Figs. 5 to 7, inclusive, but especially designed for use on low priced cars which are not generally equipped with any device for holding the door snug. The device shown in Fig. 8 is provided with a casing 32 mostly of a casting similar to that illustrated in Fig. 4, but having a cylindrical opening 33 through which extends a cap 34 which constitutes the door engaging member. The cap is hollow and receives the outer end of a cylindrical spring 35 which has its inner end bearing against a stud 36 formed on the inner portion of the casing. The casing 32 has an attaching flange 37 for enabling it to be secured to the door jamb 38 and the operation of the device is the same as that illustrated in Fig. 4 of the drawings.

In each form of the invention the device permits free play of the door in all its varied vibrations without allowing any movement of the metal cap at the point of contact with the door, and therefore without any surface friction or wear on the cap or the door. The metal cap is therefore absolutely frictionless in its action and constructed to hold the door snug and tight for a considerably longer time than buffers and bumpers which have no floating action and are constantly subjected to friction and wear.

What is claimed is:

1. A buffer for cushioning the closing of automobile doors and for holding a door against its latch, said buffer including a tapered door engaging member having a flat end face bearing against the smooth surface of the door, means for guiding the said member inwardly and outwardly and also for fulcruming the same to permit a universal lateral movement or play of the door engaging member when it is moved inward

by the door whereby it is adapted to maintain constant contact with the automobile door without friction or rubbing, and a spring located in rear of the door engaging member and bearing against the same for urging the door engaging member outwardly, said spring being compressed by the closing movement of the door and the taper of the said member and the guiding and fulcruming means coacting to permit a universal lateral movement or play to increase with the inward movement of the door engaging member and the compression of the spring.

2. A buffer for cushioning the closing of automobile doors and for holding a door against its latch, said buffer including a casing having an opening and provided thereat with an inwardly extending guiding flange having its inner edge arranged to form a fulcrum, a hollow cap tapered outwardly and operating in the opening of the said casing and fulcrumed therein by the inner edge of the said flange to permit a universal lateral movement or play in addition to the inward and outward movement of the said member, said flange and tapered member coacting to permit the lateral universal movement or play to increase with the inward

movement of the said member, and a spring for urging the member outwardly.

3. A buffer for cushioning the closing movement of automobile doors and for holding a door against its latch, said buffer including a casing provided at the back with a projecting stud and having an opening at the front, said casing being also provided at the said opening with an inwardly extending flange, an outwardly tapered hollow cap guided in the opening by the said flange and fulcrumed on the inner edge of the flange to permit a universal lateral movement or play of the cap in addition to the inward and outward movement of the same, said flange and tapered member coacting to permit the universal movement or play to increase with the inward movement of the cap, and a coiled spring fitted at its inner end on the said stud and having its outer end extending into the cap for urging the latter outwardly.

In testimony whereof we affix our signatures in the presence of two witnesses.

BENJAMIN H. SEABURY.

JAMES C. OLLARD.

Witnesses:

WM. OLLARD,

A. L. SENN.