Oct. 7, 1924. 1,511,020

A. BORCHART

DOOR CLOSER

Filed June 4, 1923

Fig. 1.

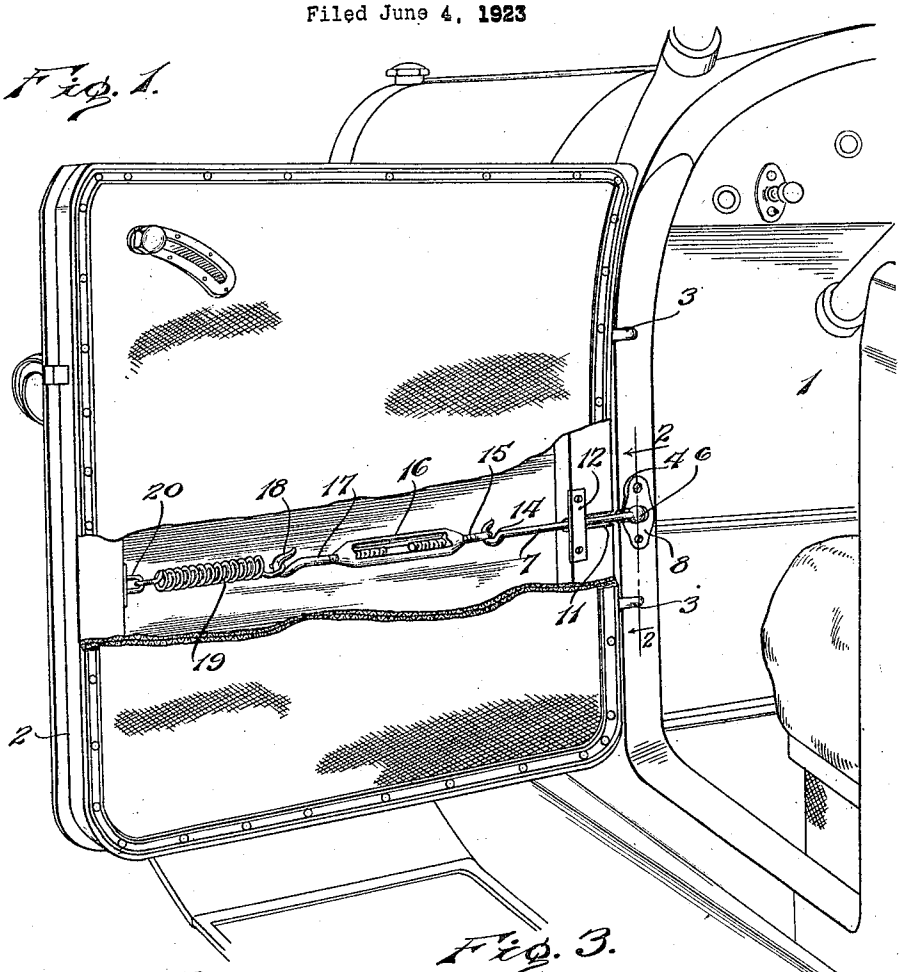


Fig. 2.

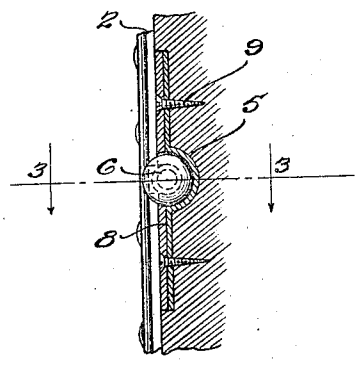
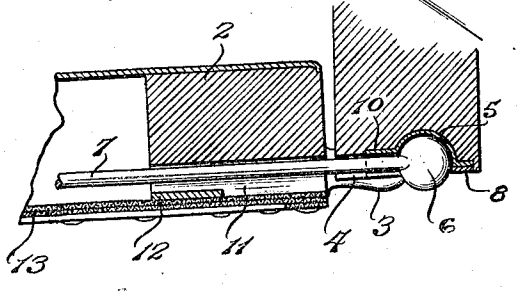


Fig. 3.



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UNITED STATES PATENT OFFICE.

ARTHUR BORCHART, OF CENTRALIA, WASHINGTON.

DOOR CLOSER.

Application filed June 4, 1923. Serial No. 643,417.

To all whom it may concern:

Be it known that I, ARTHUR BORCHART, a citizen of the United States, residing at Centralia, in the county of Lewis and State of Washington, have invented certain new and useful Improvements in Door Closers, of which the following is a specification.

This invention is a device for automatically closing the doors of automobiles, the object being to provide a simple and efficient device which will operate positively to close the door when the same is released so that damage now frequently resulting from moving an automobile while the door is open will be avoided. Due to carelessness or inattention, it frequently happens that the door of an automobile is left open and the vehicle is moved about in a garage or is driven along a road or street without the door being closed and the laterally extending door is brought into violent contact with some object so that serious damage results. My invention provides a simple means which will be covered by the upholstery of the door and which will operate positively and efficiently to close the door automatically whenever it is released after being opened. One embodiment of my invention is illustrated in the accompanying drawing and will be hereinafter fully set forth.

In the drawing:

Figure 1 is a perspective view of a portion of an automobile showing my improved closer applied to the door thereof;

Fig. 2 is an enlarged detail section on the line 2—2 of Fig. 1, and

Fig. 3 is an enlarged detail section on the line 3—3 of Fig. 2.

The automobile 1 may be of any well-known form and the door 2 is supported on the body of the vehicle by hinges, indicated at 3, in the usual manner. In carrying out my invention, I provide a groove or recess 4 in the edge of the door opening and within the said recess I fit a socket member 5 adapted to receive a ball 6 upon one end of a rod 7. The ball is retained within the socket member 5 by a cap plate 8 secured by screws or similar devices 9 to the edge of the door opening over the socket member 5 so that the same fastening devices will secure the socket member rigidly in place. The cap plate is, of course, provided with a central opening having a beveled edge to fit around the ball so that, while the ball may move freely within the socket member, it cannot drop out of place and will consequently maintain the rod 7 in operative position at all times. A hub or sleeve member 10 extends from one side of the socket member 5 and coincides with the groove 4 in the edge of the door opening so as to accommodate the rod 7 when the door is opened, as shown most clearly in Fig. 3. The frame of the door is provided with a groove 11 through which the rod 7 passes, and a keeper 12 is secured upon the frame to bridge said groove and thereby retain the rod therein, the covering or upholstering 13 of the door extending over the said groove and the parts cooperating therewith, as will be readily understood. The end of the rod 7 remote from the ball 6 is formed into a hook 14 with which is engaged one end of a threaded rod 15 forming a part of a turnbuckle, the turnbuckle being completed by a link 16 and a second threaded rod 17 which is fitted in the end of the link 6 alined with the threaded rod 15. The rod 17 is constructed with a hook 18 with which is engaged the terminal of a coiled spring 19 which has its opposite terminal engaged in an eye 20 secured to the side of the door frame which carries the lock.

It will, of course, be understood that the ball 6 and the socket 5 are disposed eccentric to the pintles or pivots of the hinges 3. Consequently, when the door is opened and swung outwardly, the spring 19 is placed under an increased tension so that immediately upon release of the door the spring will contract and thereby impart a closing movement to the door. The turnbuckle permits the normal tension of the spring to be easily adjusted so that the door may be fully closed or may be merely held closed but unlatched so that violent slamming of the door will be avoided. In either event, however, the tension of the spring should be such as to maintain the door normally within the lines of the running board or wheel guards so that, if the vehicle should be moved about while the door is unlatched, the door cannot come in contact with adjacent objects and be thereby damaged.

My device is exceedingly simple and may be applied at a low cost to any automobile now in existence or which may be hereafter produced. It may be applied to the door without any substantial structural changes therein and, when applied, will be covered

by the lining or upholstery of the door so that it will not be unsightly and not be apt to catch in the clothing of an occupant of the vehicle.

Having thus described the invention, what is claimed as new is:

1. The combination with a vehicle body, and a door hinged thereto, of a rod mounted for universal movement upon the body eccentric to the door hinges and extending across the side of the door at the hinged end thereof, a contractile spring attached to the latch end of the door, and an extensible connection between said spring and said rod, the spring, the rod and the connection being always in alinement.

2. The combination with a vehicle body, and a door hinged thereto, of a socket member fitted in the body eccentric to the door hinges, a rod extending across the side of the door at the hinged end thereof, a ball on one end of said rod seating in said socket member, a cap plate secured over said socket member and engaging around the ball, a contractile spring attached to the latch end of the door, means for holding the rod to the door and an adjustable connection between said spring and said rod, the rod, the spring and the connection being always in alinement.

In testimony whereof I affix my signature.

ARTHUR BORCHART. [L. S.]