

J. CHURCHWARD,
 STEP CONSTRUCTION FOR AUTOMOBILES.
 APPLICATION FILED AUG. 20, 1917.

1,407,517.

Patented Feb. 21, 1922.

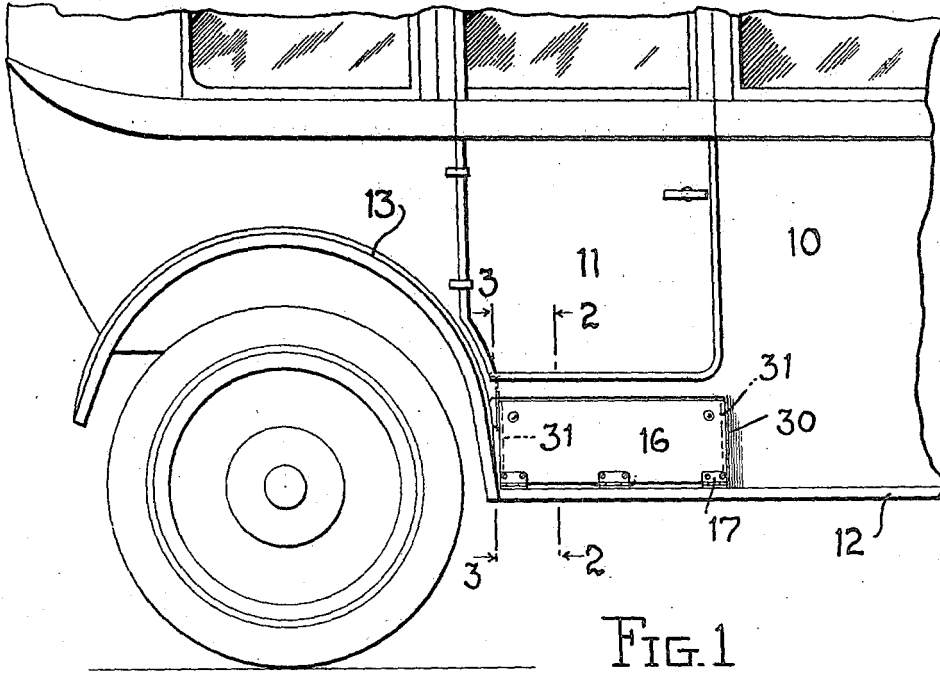


FIG. 1

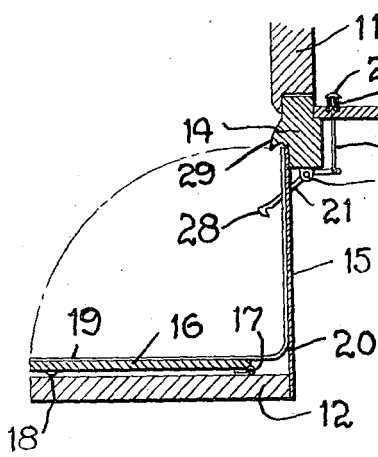


FIG. 2

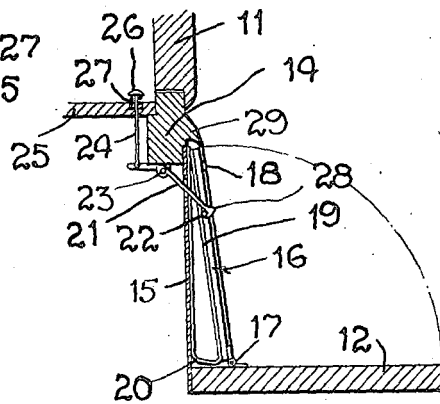


FIG. 3

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UNITED STATES PATENT OFFICE.

JAMES CHURCHWARD, OF LAKEVILLE, CONNECTICUT, ASSIGNOR OF ONE-HALF TO ROBERT S. BLAIR, OF STAMFORD, CONNECTICUT, AND ONE-HALF TO LOUISE CHURCHWARD, OF LAKEVILLE, CONNECTICUT.

STEP CONSTRUCTION FOR AUTOMOBILES.

1,407,517.

Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed August 20, 1917. Serial No. 187,124.

To all whom it may concern:

Be it known that I, JAMES CHURCHWARD, a citizen of the United States, and a resident of Lakeville, in the county of Litchfield and State of Connecticut, have invented an Improvement in Step Constructions for Automobiles, of which the following is a specification.

This invention relates to the entrance construction and more particularly step construction of automobiles and the like.

One of the objects thereof is to provide practical and simple means whereby the step of automobiles or the like may present clean and otherwise desirable surfaces.

Another object is to provide a step arrangement of simple construction and convenient and efficient action.

Another object is to provide means of the type first mentioned which are readily manipulated and adapted to meet conditions of hard practical use.

Other objects will be in part obvious and in part pointed out hereinafter.

This invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, wherein is shown one of various possible embodiments of this invention,

Figure 1 is a side elevation of a portion of an automobile.

Figure 2 is a sectional view along the line 2—2 of Figure 1 showing the parts open in condition for use.

Figure 3 is a similar view showing the parts in closed condition, the section being along the line 3—3.

Similar reference characters refer to similar parts throughout the different views of the drawing.

As conducive of a clear understanding of certain features of this invention it may be noted that in the use of automobiles and particularly those of the closed type it has been found that under certain conditions the ordi-

nary step construction presents many disadvantages. The exposed step surface, especially in unfavorable weather, is likely to become wet and dirty and is especially objectionable to ladies in evening costume, as it tends to soil light shoes and gowns. To avoid this objectionable feature without sacrifice of general practicability and efficiency of action is one of the dominant aims of this invention.

Referring now to Figure 1 of the drawing there is shown at 10 a portion of an automobile of the closed type. Beneath the door 11 of this vehicle is the step 12 which may be of the usual construction terminating substantially at the bottom of the rear fender 13.

Leading from the step 12 to the frame member 14 is a connecting apron 15 which may be formed of any suitable material.

Pivotally mounted upon step 12 is a swinging plate 16 which may be hinged as at 17, one or more of the hinges being of the spring type adapted to throw the plate downwardly into a horizontal position. This downward movement is cushioned by suitable buttons 18 upon the outer surface of the plate, formed of rubber or the like.

As shown in Figure 2 of the drawing, there is secured to the upper surface of the plate 16 a cover member as of carpet 19 which extends inwardly to join the apron 15 at 20 and thence preferably upwardly along this apron to form a carpeted outer surface thereon, throughout its height.

The swinging plate 16 is held in its uppermost position by a suitable form of spring latch 21 interlocking with a pin 22, which may be at the end of the plate adjacent the fender 13. This latch is here shown as pivoted at 23 to the frame member 14, and has pivotally connected with its inner end a vertical slidable rod 24 extending through the car floor 25 and terminating in a button 26. This rod is normally held in an elevated position as by the coil spring 27. The outer end of latch member 21 is preferably so formed, as by the inclined surface 28, that it will, upon the plate 16 being thrown upwardly, automatically rise and snap downwardly over the pin 22.

The entire swinging plate 16, with its associated parts may be mounted as shown in Figure 3 to incline inwardly toward the car when in closed position, thus permitting it to reach the extreme outward edge of the step 12 when it falls downwardly as indicated in Figure 2.

The upper edge portion of the swinging device rests within a shield secured to or formed on the frame member 14 as indicated at 29. This shield is preferably of such form as to shed water from its downwardly inclined edge to the outer surface of the plate 16 from which it is carried downwardly thus preventing rain from access to the carpet or cover member 19. In like manner the forward edge of the plate 16 with its associated parts is protected by a similar shield 30 of smaller cross section and the edges of the plate at each end are preferably grooved as indicated by the dotted line 31, in order to carry away any water which may be driven inwardly beyond the shields.

In the use of this construction it is normally maintained in its upright closed position in which it is protected against unfavorable weather conditions and from being soiled by the ordinary use of the car. When, however, it is desired to provide a step surface which is clean and carpeted, the button 26 is pressed, whereupon the spring hinges throw the plate 16 downwardly in the position indicated in Figure 2 of the drawings. After such use the plate is thrown upwardly and automatically locked in its closed position.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved.

As various changes may be made in the embodiment herein described, without departing from the scope of the invention, it is to be understood that all features herein set forth or shown in the accompanying drawing shall be interpreted as being illustrative and not in a limiting sense.

I claim as my invention:

1. In construction of the class described, in combination with an automobile, a step extending below the door of said automobile, a connecting member between said step and the body of said automobile, a covering member extending downwardly over said connecting member and thence outwardly over said step and means adapted to fold the horizontal portion of said covering member upwardly toward the upright portion thereof.

2. In construction of the class described, in combination with an automobile, a step extending beneath the door of said automobile, a swinging member adapted to move downwardly over said step and means independent of said door adapted to cause said

swinging member to move downwardly into said position.

3. In construction of the class described, in combination, an automobile door, a step beneath said door, connecting means extending upwardly from said step toward said door, a swinging member mounted to swing downwardly over said step and upwardly into substantially upright position and a carpet secured upon the upper surface of said swinging member, and cushioning means adapted to cushion the downward movement of said swinging member.

4. In construction of the class described, in combination with an automobile, a step extending beneath the door of said automobile, a swinging member mounted to swing downwardly over said step opposite said door, a covering for the upper surface of said swinging member comprising a substantially continuous strip of carpet which is extended upwardly for a substantial distance above said step, said swinging member being adapted to fold upwardly into a substantially vertical plane and a projecting part adapted to extend over and protect from rain the upper edge of said swinging member.

5. In construction of the class described, in combination with an automobile, a step extending beneath the door of said automobile, a swinging member mounted to swing downwardly over said step opposite said door, a covering for the upper surface of said swinging member, said swinging member being adapted to fold upwardly into a substantially vertical plane, a projecting part adapted to extend over and protect from rain the upper edge of said swinging member and a projecting substantially upright part behind which the forward edge of the swinging member rests.

6. In construction of the class described, in combination with an automobile, a step extending beneath a door of said automobile, a swinging member, means mounting said member and adapted to tend to cause it to swing downwardly over said step, said member being positioned to swing upwardly into a substantially upright plane, a covering member secured to the upper surface of said swinging member in horizontal position and means adapted to release said swinging member and permit it to move downwardly over said step.

7. In construction of the class described, in combination with an automobile, a step extending beneath a door of said automobile, a swinging member, means mounting said member and adapted to tend to cause it to swing downwardly over said step, said member being positioned to swing upwardly into a substantially upright plane, a covering member secured to the upper surface of said

swinging member in horizontal position and
extending over said member and thence up-
wardly to a height equal to a substantial
portion of the width of said member, means
5 adapted to release said swinging member and
permit it to move downwardly over said
step, and projecting means adapted to shield

the edge of said swinging member when
swung into the upright position.

In testimony whereof, I have signed my 10
name to this specification this 15th day of
August, 1917.

JAMES CHURCHWARD.