J. B. RICHARDS.

HINGE FOR AUTOMOBILE DOORS.

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1,199,749.

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Fig. 1.

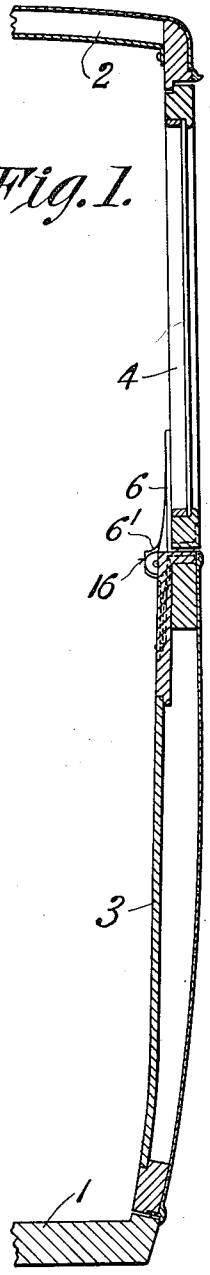


Fig. 2.

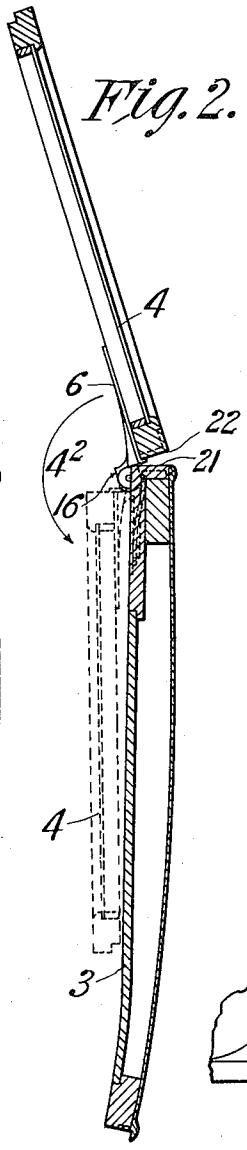


Fig. 3.

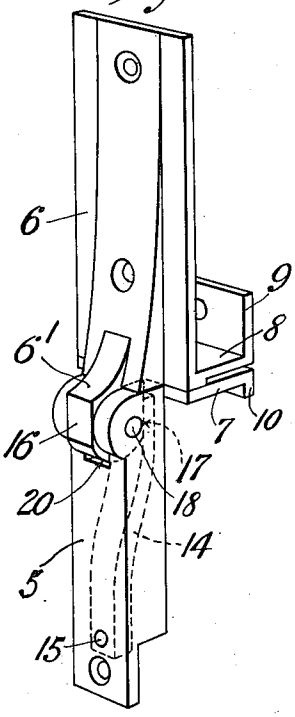


Fig. 4.

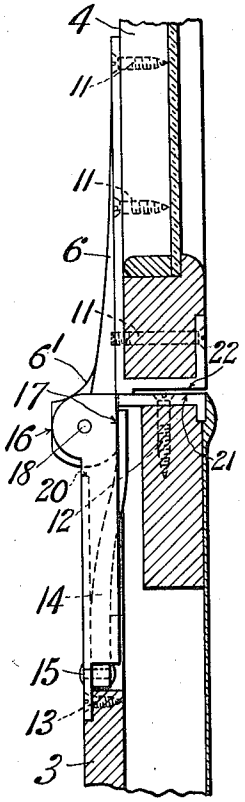
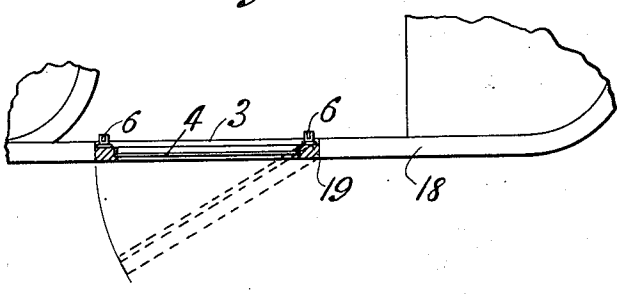


Fig. 5.



WITNESS

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HINGE FOR AUTOMOBILE-DOORS.

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To all whom it may concern:

Be it known that I, JOHN B. RICHARDS, a citizen of the United States of America, residing in the city of Springfield, county of Hampden, and State of Massachusetts, have invented certain new and useful Improvements in Hinges for Automobile-Doors, of which the following is a specification.

This invention relates to improvements in the construction of automobile bodies and particularly in the construction of the doors for inclosed cars of the limousine construction in which it is desirable, oftentimes, to open the upper part of the body for ventilation or observation purposes, or, to close the same in stormy weather.

The invention, specifically considered, relates to the construction of the hinge for holding the upper frame of the entrance door either in an elevated or lowered position, the hinge being so designed as to prevent rattling of the parts of the swinging frame, either when in raised or lowered position.

Broadly, the hinge comprises two leaf members pivotally connected together, the swinging leaf which is attached to the upper frame part of the door having two flat surfaces on an enlarged or boss portion of the leaf, and against which a suitable leaf spring bears for firmly holding the upper frame part of the door either in an open or closed position.

Referring to the drawings: Figure 1 is a detail vertical sectional view on a plane at right angles to the door and extending from the roof to the sill portion of the body, showing the upper and lower portions of the door in closed position; Fig. 2 shows the door in an open position, swung outward and away from the sill and in position for swinging the upper frame downward into the dotted line position against the lower frame; Fig. 3 is a perspective view of the hinge which pivotally connects the two frames of the door together, clearly illustrating the two flat surfaces against which the leaf spring bears to retain the upper frame of the door in either an open or closed position; Fig. 4 is an enlarged detail view of the hinge as applied to the adjacent sections of the door; and Fig. 5 is a plan view in a plane taken through the upper frame of the door immediately above the hinge.

Referring to the drawings in detail—1 designates a portion of one of the side sills of the body portion of the car, 2 a portion of the roof, the lower member of the door at 3, and the upper member at 4. The lower and upper members of the door are connected together by means of the hinge shown in Fig. 3, the lower leaf 5 being attached to the lower frame portion 3 of the door and the upper leaf 6 to the upper portion. The leaf 6 is attached to the upper portion. Each of the leaf members is formed with inwardly extending portions 7 and 8 and oppositely extending portions 9 and 10. The leaf 6 is attached to the upper frame by means of the screws 11 which pass through the openings in the parts 6 and 9, and the lower leaf is attached to the lower part of the door by means of the screws 12 and 13, which pass through openings in the parts 5 and 7. Secured to the lower leaf 5, by any suitable means, as a rivet, is a leaf spring 14 substantially S-shape in form, the rivet being indicated at 15. The upper leaf of the hinge has formed integral therewith the boss or hub 6′ having the two flattened surfaces 16 and 17 against which the upper end of the spring 14 bears for retaining the upper frame 4 in either a closed or open position, as desired. The two leaf members of the hinge are connected together by the usual pintle 18.

When it is desired to fold the upper frame section 4 downward into the dotted line position shown in Fig. 2, the door as a whole, is swung open into the dotted line position shown in Fig. 5, the two frames being swung outward together on its attaching hinges by means of which the lower door frame 3 is connected to the body 18 of the car, the point of attachment being indicated at 19. After the door is swung open the upper frame 4 can then be folded down into the dotted line position 4′ shown in Fig. 2 in the direction indicated by the arrow 4^2. The upper end of the spring 14 follows or bears on the curved surface 20 until it engages the flat surface 16. The combined action of the spring and flat surfaces serves the purpose of holding the upper frame section 4 in its downward position, and closely against the inner surface of the lower section of the door, it being understood that the hinge 14 is made strong enough to prevent any rattling of this frame, either in its open or

closed position. It should be stated that the two sections of the door 3 and 4, when closed and locked, are sprung together so as to have the toggle joint effect causing the edges 21 and 22 to forcibly engage each other.

It will be seen that the pintle 18 passes through two upstanding bosses that are above the outer surface of the lower leaf and at the upper side edges of the same, and also through the boss or hub 6′ on which the two flat surfaces 16 and 17 are formed and with which the upper end of the leaf spring 14 engages.

What I claim is:

The combination with the upper and lower frames of a two-part automobile door, a hinge construction for connecting the frames together, comprising two flat leaves to be designed for attachment to the inner sides and adjacent the meeting edges of the frames, the upper and lower leaves of the hinge each having inwardly projecting integral portions and each of said portions having projections which extend parallel with the leaves to form socket-like constructions for receiving the lower and upper edges, respectively, of the frames, the upper leaf having a projection adjacent the meeting edges of the frames and formed with oppositely disposed flat surfaces, the lower leaf having spaced ears to receive the projection last mentioned and a pintle passing through the spaced ears and projection therebetween for connecting the leaves together, and a flat leaf spring, substantially S-shape and attached near the lower end of the lower leaf of the hinge, its upper end designed to engage either one or the other of the flat surfaces of said projection on the upper leaf for retaining the frames in either upward or lowered position, as and for the purpose described.

JOHN B. RICHARDS.