G. F. MURPHY.

WIND SHIELD.

APPLICATION FILED JAN. 18, 1911.

1,031,020.

Patented July 2, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

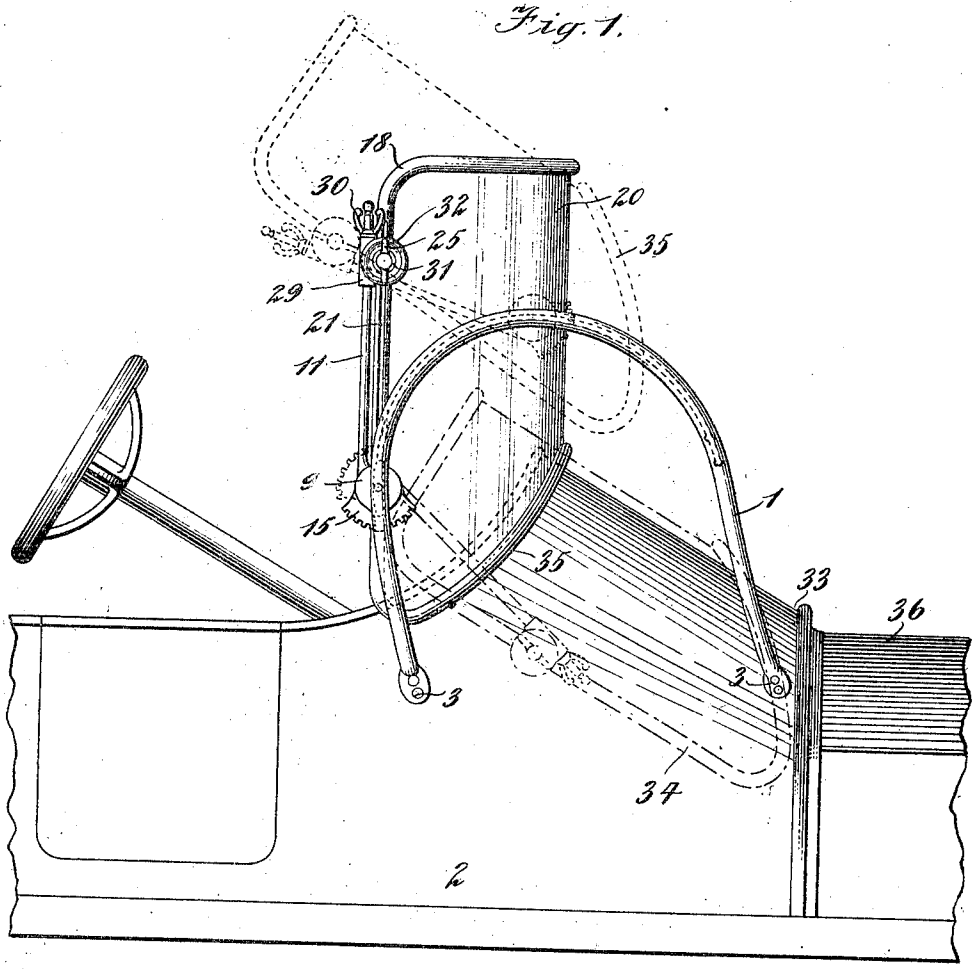
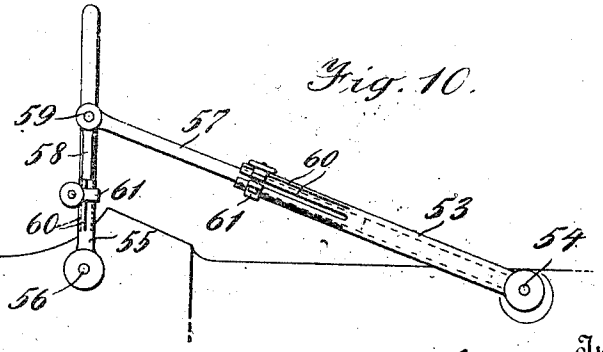


Fig. 10.



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3 SHEETS—SHEET 2.

Fig. 2.

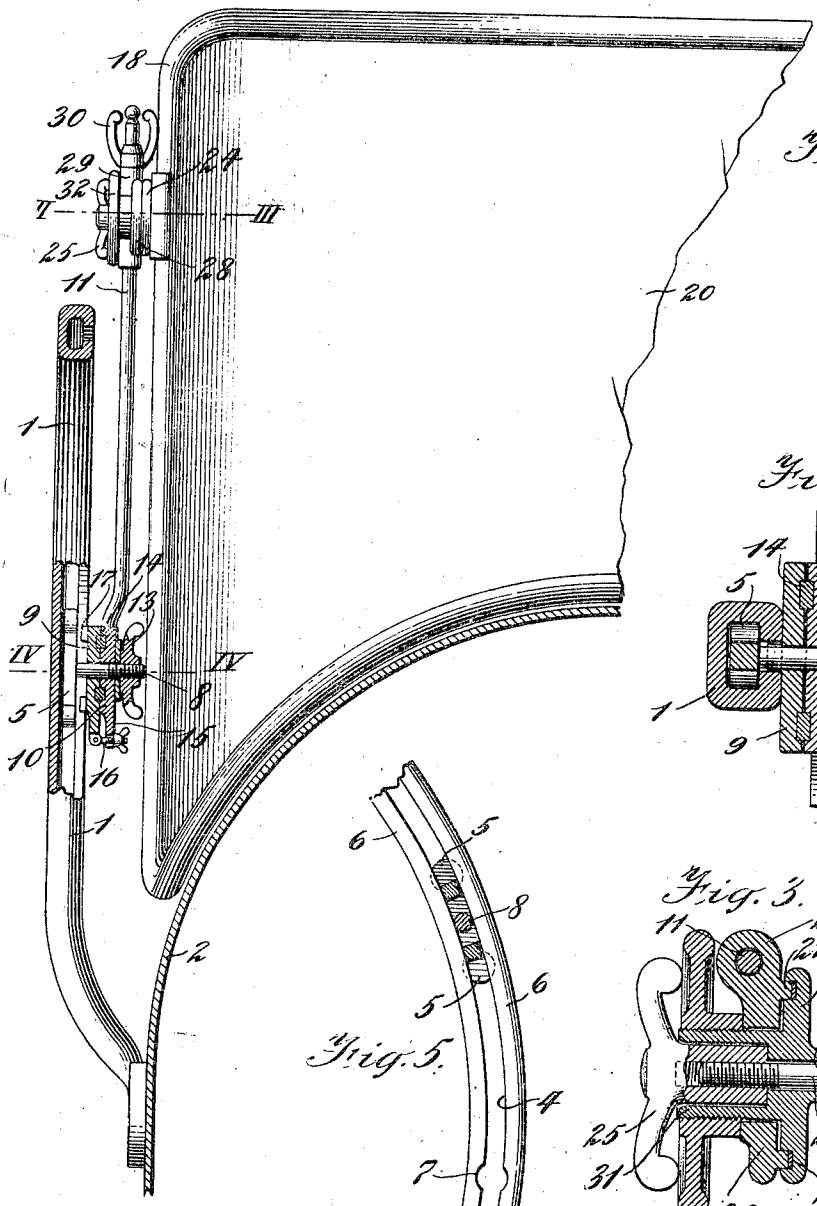

Fig. 4.

Fig. 5.

Fig. 3.

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3 SHEETS—SHEET 3.

Fig. 6.

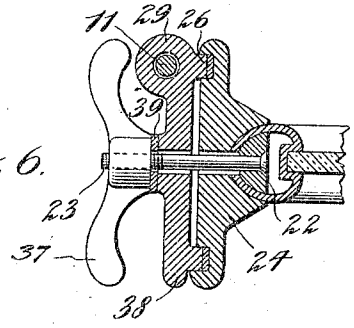


Fig. 7.

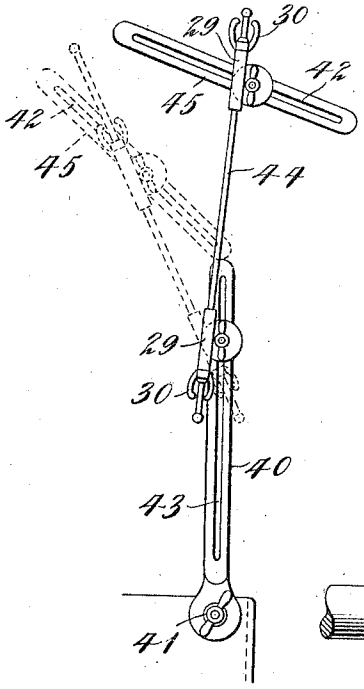


Fig. 8.

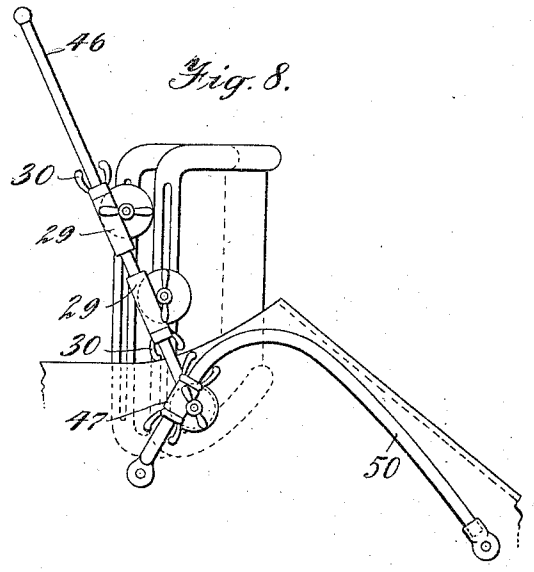
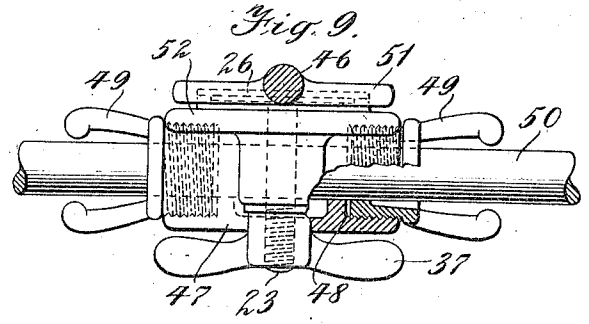


Fig. 9.



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UNITED STATES PATENT OFFICE.

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WIND-SHIELD.

1,031,020. Specification of Letters Patent. Patented July 2, 1912.

Application filed January 18, 1911. Serial No. 603,228.

To all whom it may concern:

Be it known that I, GEORGE F. MURPHY, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Wind-Shields, of which the following is a full, clear, and exact description.

This invention relates to wind-shields for automobiles and the like, and has for its object the provision of means in combination with a shield of this character whereby said shield may be disposed and firmly held in any position desired.

As heretofore constructed automobile wind-shields have been open to objection in most instances on the ground that they do not afford adequate protection to the driver of the machine in inclement weather, and further that they are not sufficiently well adapted to be moved out of the way of the operator or driver when there was no occasion for using them, to afford an unobstructed view; or to place the shields into positions where they will not be likely to become damaged under various conditions which may arise.

The essential features of this invention are applicable to both the ordinary straight or flat wind-shields as now constructed, or to a novel form of wind-shield which I have devised which is curved and adapted to conform with the contour of the upper edge of the dash-board or hood of, for example, what is commonly known as a torpedo shaped car. Furthermore the wind-shield may be made in one piece or in two parts, and in the latter case the parts may be either of the straight or flat type aforesaid or of the novel curved form.

It will be observed by referring to the accompanying drawings which form a part hereof and in which like reference characters designate like parts, that by reason of the novel mounting of the shield, whether the same be made of one part or two, such part or parts can be disposed with respect to the body of the machine, and if there be two parts, with respect to each other, in almost any manner desired.

Referring to the drawings: Figure 1 is a fragmentary side elevation of a torpedo shaped car with one form of my novel wind shield mounted thereon. Fig. 2 is a fragmentary detail of this form of my device, the fragment of shield shown being viewed from the front of the car. Fig. 3 is a detail section taken on line III—III of Fig. 2, showing one form of my slidable hinge. Fig. 4 is a detail section taken on the line IV—IV of Fig. 2, showing another form of slidable hinge used in the construction in question. Fig. 5 is a fragmentary detail of the guide rail or rod upon which the shield parts are mounted in this form of my invention. Fig. 6 is a modification of the slidable hinge shown in Fig. 3, a single clamping nut being employed herein in place of the two shown in the figure last mentioned. Fig. 7 embodies a modification of my invention showing the same as applied to a two part straight wind-shield. Fig. 8 is a preferred form of the device comprising a two-part curved wind-shield. Fig. 9 is a detail of the guide rod clamping device shown in Fig. 8, the sleeve in the said device being broken away in part to better show the arrangement of parts therein. Fig. 10 shows a modified form of wind-shield support.

In the form of device shown in Fig. 1 a curved guide-rail 1 is secured to a dash-board or hood 2, or the like, in any suitable manner, as by rivets 3 disposed in the flattened ends of the guide. In this embodiment of my invention I have shown this guide as formed of tubing, the same being slotted along one side thereof, as at 4, for the reception of a suitable shoe 5. The shoe herein has somewhat the form of a flat dumb-bell, the heads of which are adapted to engage the inner sides of the flanges 6 of the rail. The shoe may be inserted into said rail through the enlarged portions 7 of the slot 4; and said shoe carries a stud 8 which projects out through the said slot and passes successively through a plate 9, a head 10 of a guide rod 11, a washer 12 and a winged nut 13, or the like. The opposed faces of the head 10 and plate 9 are recessed for the reception of a friction ring 14 which may be of lead or like material. It is evident that when the nut 13 is loosened very slightly the rod 13 may be swung around the stud 8 into any desired position, while the shoe 4 will remain, by reason of its frictional engagement with the flanges 6 of the guide rail, substantially undisturbed. Now if the nut 13 be further loosened the shoe may then be slid along through the rail any desired distance.

The guide rod head 10 may be provided

with a quadrant 15 or the like, the edges of which may be slotted for the reception of a stud 16, such stud being pivoted to a lug preferably located at one side of the plate 9. When the stud 16 is in engagement with a notch of the quadrant, the head and washer are obviously more securely fastened together than when the friction ring alone is depended upon, and this form of construction is advantageous in that it overcomes any possibility of slippage between the parts aforesaid due to continued and excessive vibration of the car. The plate 9 is firmly held in definite relationship to the slot 4 by reason of the pins 17 which project into the said slot, and it will be seen that this washer may be turned end for end so as to present the quadrant upon the other side of the stud 8 by merely slackening the nut 14 sufficiently to permit of disengagement of the pins 17 from the said slot. This construction obviates the necessity for providing notches around an arc of 360°. The wind-shield frame 18 is preferably recessed upon the inner side thereof as at 19 for the reception of a plate of glass 20, or the like, and in my preferred construction is formed of tubing which is slotted as at 21 along the respective sides of the frame. A semi-cylindrical shoe 22 rides in the frame and carries a stud 23 which projects out through the slot 21; while an outer shoe 24 is adapted for engagement with the outer surface of the tubular frame, and stud 28 extends out through this shoe and has a threaded engagement with a thumb or winged nut 25, as shown in Fig. 3. The body of the shoe 24 is grooved for the reception of a friction washer or lead ring 26; which is in engagement with an annular rib 27 carried by a laterally projecting flat and preferably circular lug 28, which latter is preferably integrally united with a sleeve 29. The guide rod 11 extends through this sleeve and is adapted to be firmly clamped therein by means of a winged nut 30. The arrangement of this nut and sleeve is substantially the same as the corresponding elements used in the form of device shown in Fig. 9, which device will be hereinafter more particularly described. In both instances, it may be here stated, however, the circular aperture in the winged nut, through which the guiding member extends, is slightly eccentric to the axis of the sleeve, the true axis of the nut, however, being in alinement with the said sleeve axis. It is evident therefore that when the rotatable member or nut 30, which may, if desired, be threaded into the extremity of the sleeve, is rotated through somewhat less than 180°, the guiding member, *i. e.* the guide rod 11 will be clamped firmly against the inside of the sleeve. Threaded upon a cylindrical extension 31 of the outer shoe 24 is a wheel shaped nut 32, the face of the hub of which is adapted for engagement with the lug 28; and when therefore nut 32 is turned in one direction, preferably clockwise, the rib 27 will be driven into engagement with the friction ring 26 and will therefore clamp or lock the sleeve 29 against rotation. Correspondingly the nut 25 locks the shoes 22 and 24 against movement with respect to the frame of the shield by firmly clamping a portion of such frame therebetween. This form of construction hence permits of independent longitudinal movement of the sides of the frame with respect to the shoe 24, a rotative movement of the frame with respect to the sleeve 29, and movement of the whole in either direction upon the guide rod 11.

The wind-shield may be curved and the lower edge of the frame thereof bent to conform to the hood or dash-board of the vehicle. By reason of the fact that the hoods of vehicles of this type as usually constructed flare upwardly and outwardly gradually from the forward end 33 thereof, the shield is adapted to be swung down into the position which the normally lower portion of the two part shield occupies in Fig. 8, while the said shield may further be disposed in the position indicated in dotted lines at 34 in Fig. 1, or in the upper position also indicated in dotted lines at 35 in said figure. Indeed, by reason of the construction shown the shield may be placed at any angle and in practically any position desired, and may even be thrown completely forward over engine casing 36. Then too, it may be elevated considerably above the head of the driver, and may be swung backwardly toward him in such overhead position so as to serve as a canopy. I have described the clamping and guide members upon one side of the vehicle and may provide substantially the same construction upon the opposite side thereof. If desired, however, one side only may be provided with the friction ring 26 and a suitable spring detent of any common construction may be employed in lieu thereof on the other side. In practice, however, it is desirable to make both sides of the device alike since when the driver wishes to shift the position of the wind-shield it is merely necessary to slightly slacken the wheel 32 or winged nut upon one side thereof leaving the said parts in moderately close frictional engagement, when upon slackening the nuts upon the opposite side, a sufficient amount, the shield may be shifted into the position desired and there clamped.

In Fig. 6 I have shown a slight modification of the device illustrated in Fig. 3. In this instance the nut 32 is eliminated, and the winged nut 37 performs the dual function of frictionally engaging the lug 38 and outer shoe 24 with the friction ring 26, and of also simultaneously clamping the slotted

frame between the outer shoe 24 and inner shoe 22. A small washer 29 is preferably provided between the nut 37 and lug 38. This form of device may also if desired be provided with the sleeve 29 for the reception of the guide member.

In Fig. 7 I have illustrated a form of my invention involving a flat two-part wind-shield, the lower shield 40 being pivoted at 41 upon a suitable clamping device similar in general type to those above described; but in this instance each of the respective half sections of the wind-shield have the sides of the frames thereof slotted as at 42 and 43 for the reception of, for example, such a clamping device as that shown in Fig. 3 or in Fig. 6. In this form of device the guide rod 44 passes through the respective sleeves 29 and each of the said sleeves is clamped to the said rod by means of the winged nuts 30. It is evident that the respective sections of the wind-shield can be placed in many positions and at any angle with respect to each other, one such arrangement being shown by the dotted lines 45.

In Fig. 8 a preferred form of device is shown. In this instance the guide rod 46 is pivotally mounted on a sleeve 47 which is similar to the sleeves 29 but is preferably interiorly ribbed as shown in Fig. 9 at 48. The revoluble clamping members or nuts 49 are also similar to nuts 30, being eccentrically bored, and are adapted to clamp the guide member, in this instance the solid rail 50, which passes therethrough and upon which the sleeve 47 is mounted. The rail 50 may have straight portions and may further be bent as shown. Care of course must be taken in bending the rail to form the arcuate or bent portion thereof of sufficient radius to permit the ribbed sleeve with its clamping nut or nuts to pass thereover. The guide rod 46 preferably provided with a head 51 which is pivotally connected to a lug 52 of the sleeve 48 in the same manner that the outer shoe 24 is connected to the lug 38, *i. e.* by means of a stud 23, and nut 37; while a friction ring 26 should also preferably be provided.

The sides of the curved wind-shield sections are slotted just as they are in the form of device shown in Figs. 1 and 2, and it will be observed that by reason of the construction shown both of the wind-shield sections can be pulled downwardly, and placed the one back of the other in the position shown in Fig. 8, while correspondingly one or both of these sections can be thrown forward and laid upon the curved surface of the hood if such arrangement be desired.

In Fig. 10 the shield supports are formed in sections, tubular and otherwise, and these sections are adapted to telescope in an evident manner, since the tubular guide or sleeve 53 is pivotally mounted upon the hood at 54, while a similarly mounted tubular member or sleeve 55 is pivoted at 56. Rods 57 and 58 are respectively slidably mounted in these tubular members and are pivotally connected at 59 by means of the trunnions of the wind-shield. The shield may hence be supported at these points and adjustably secured against rotation by means of any of the devices for the purpose already described, while the guides may be adjusted to bring the pivotal points 59 into any desired position by sliding the rods 57, 58, into their respective sleeves, the ends of said sleeves being split as at 60 and provided with suitable clamps 61 in order to lock the rods against longitudinal displacement.

Various other modifications of my device might be shown, but it is thought that those herein presented sufficiently set forth the essential principles involved, and in view of the many forms into which my invention may be embodied, I desire to be limited only by the scope of the appended claims. I regard the provision of a slidable hinge mounted upon a suitable guide as one of considerable importance. It should further be noted that while the several frames have been shown as slotted, many of the movements of the shield may be accomplished without utilizing such slots, since by merely maintaining the sleeve carrying hinges of said shield fixed in some desired position along the side thereof, the shield can still be raised and lowered although to a less extent, and is further free to rotate. Correspondingly, the sleeves 29 when clamped to their guide rods may be regarded as fixed while the slots in the sides of the frame will permit of considerable displacement of the shield. The hinges should preferably, however, in all cases be provided and the provision of the sleeves slidable upon the guide rods in addition to the slotting of the frames, permits of a very wide range of movement, while allowing said guide rods to be made relatively short. In other words, this arrangement in effect may be said to be telescopic, not meaning of course that one part collapses over another necessarily, but that successive parts are adapted to be longitudinally displaced with respect to adjoining parts. In Fig. 10, however, the guides are actually tubularly telescopic.

By reason of the slidable connection between the pivotal points of the rods 46 and the rails 50, these rods can be shifted forward bodily, or in other words translated if desired, which will permit the respective parts of the curved two-part wind-shield to be placed one behind the other, as shown in Fig. 8, but more forwardly positioned and at a higher level so that said shields will rest upon the edge of the hood.

In general I regard the provision of a wind-shield, and in particular a curved two-

part wind-shield, mounted for both rotation and translation, as of especial value. A flat wind-shield mounted on the curved dash-board of an automobile will cause a whirlpool of air and dust to form behind the shield and in the operator's face. These currents of air and dust will come around the sides and particularly under and around the corners where the flat shield is joined to the curved body of the automobile. It affords absolutely no side protection and if the wind is blowing from either side it makes this condition worse. The curved wind-shield, on the other hand, will prevent the currents of air from forming a back draft because it will deflect the air away from the sides of the automobile, and it also affords ample side protection.

This type of wind-shield may be constructed in either one piece or of a plurality of pieces, as I have shown; and to the best of my knowledge it has never heretofore been attempted to adapt a curved wind-shield for rotation or translation, or both, in the manner described.

Having described my invention, what I claim, is:

1. In combination, a wind shield for vehicles, a guide, a hinge structure attached to the wind shield, permitting rotation of the latter with respect to said guide, said structure being movable along said guide and a part thereof having a recess therein adapted for the reception of said guide, and a rotatable member having a generally cylindrical portion, the axis of which is in alinement with the axis of the recess, said member having an aperture therethrough adapted for the reception of said guide, the axis of said aperture being eccentric to the axis of the recess.

2. In combination, a wind shield for vehicles, pivotally mounted clamping parts adapted for slidable engagement with a side of the shield, a rail adapted to be secured to a part of the vehicle, and means for connecting said rail and clamping parts, portions of said rail extending in directions other than perpendicular to the frame of the vehicle, said connecting means being movable therealong in the direction of the length of the vehicle.

3. In combination, a curved rail adapted to be secured to a part of a vehicle, a wind shield, and adjustable mechanism for supporting said shield on said rail, said mechanism having a slidable connection with said rail and adapted to clamp the rail at desired points along the length thereof, said rail being curved in a vertical plane.

4. In an automobile, curved forward covering portions, a wind shield covered laterally with respect to the longitudinal axis of the automobile and connections between said shield and said automobile, portions of said shield being relatively displaceable in the direction of the length of the automobile and with respect to the said curved forward covering portions, portions of said curved shield being adapted to substantially conform to said curved forward covering portions, for at least one operative position of said shield.

5. In an automobile, curved forward covering portions, a wind shield curved laterally with respect to the longitudinal axis of the automobile and connections between said shield and said automobile, portions of said shield being relatively displaceable in the direction of the length of the automobile and with respect to the said curved forward covering portions, portions of said curved shield being adapted to substantially conform to said curved forward covering portions, for at least two positions of said shield.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

GEORGE F. MURPHY.

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