No. 816,013. PATENTED MAR. 27, 1906.

M. R. HULL.

STORM SHIELD FOR VEHICLES.

APPLICATION FILED SEPT. 8, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

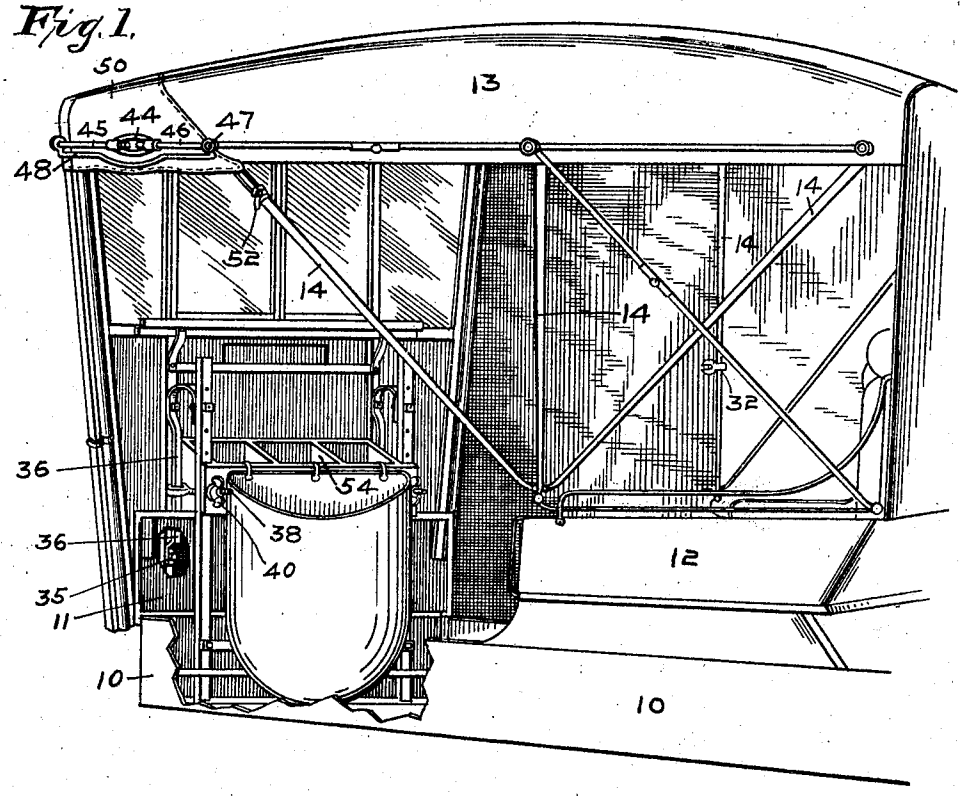
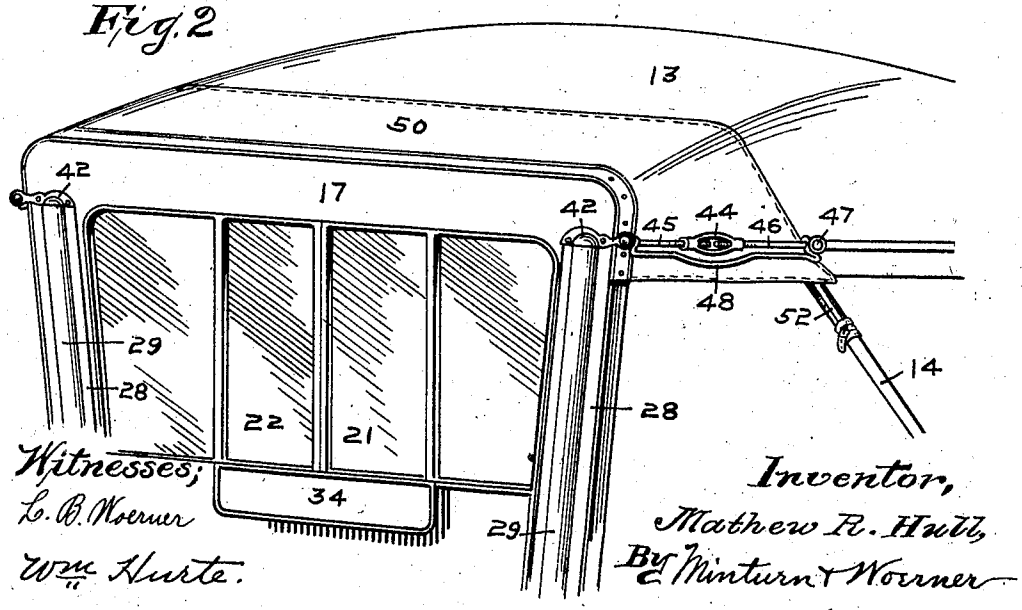


Fig. 2



Witnesses;
L. B. Woerner
Wm. Hurte.

Inventor,
Mathew R. Hull,
By Minturn & Woerner
Attorneys.

No. 816,013. PATENTED MAR. 27, 1906.

M. R. HULL.

STORM SHIELD FOR VEHICLES.

APPLICATION FILED SEPT. 8, 1905.

2 SHEETS—SHEET 2.

Fig. 3.

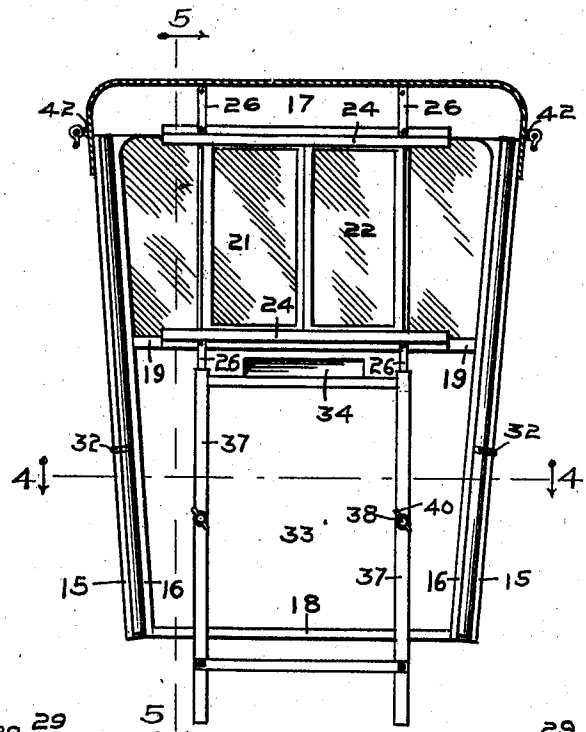


Fig. 4.

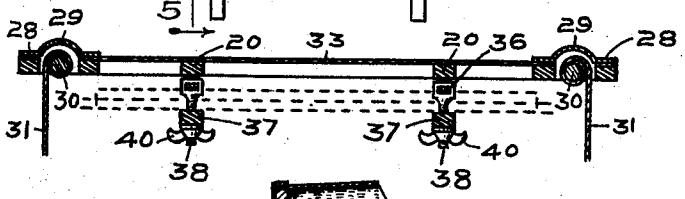


Fig. 5.

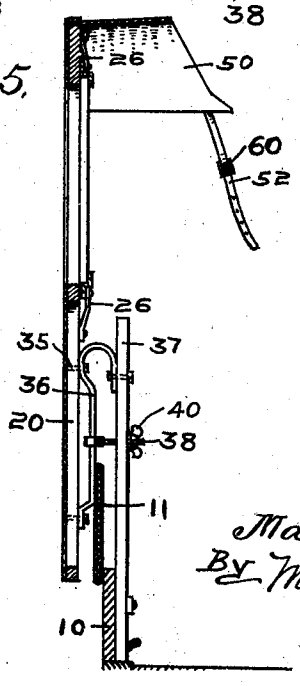


Fig. 6.

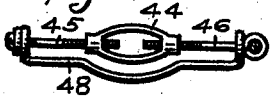


Fig. 7.

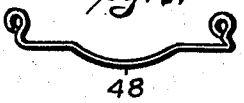
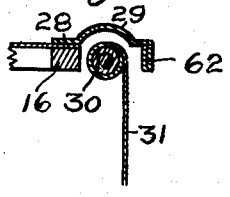


Fig. 8.



Witnesses;
L. B. Woerner.
Wm. Hurte.

Inventor,
Mathew R. Hull,
By Minturn & Woerner,
Attorneys.

UNITED STATES PATENT OFFICE.

MATTHEW R. HULL, OF CONNERSVILLE, INDIANA, ASSIGNOR TO THE REX BUGGY COMPANY, OF CONNERSVILLE, INDIANA, A CORPORATION OF INDIANA.

STORM-SHIELD FOR VEHICLES.

No. 816,013. Specification of Letters Patent. Patented March 27, 1906.

Application filed September 8, 1905. Serial No. 277,603.

To all whom it may concern:

Be it known that I, MATTHEW R. HULL, a citizen of the United States, residing at Connersville, in the county of Fayette and State of Indiana, have invented certain new and useful Improvements in Storm-Shields for Vehicles, of which the following is a specification.

This invention relates to attachments for vehicles having tops, and the object is to provide a closure for the front and sides of the top for the purpose of protecting the occupants against wind, snow, rain, and dust, to retain the heat of the body of the occupant in cold weather, but which can be readily opened on either side or in front for purposes of ventilation and these openings changed at will to suit the circumstances of travel with relation to the direction of the wind.

The invention is an improvement on Patent No. 756,021, issued to me March 29, 1904; and it consists in certain novel features of construction, as will be hereinafter shown and described, and pointed out in the claims.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a part of a vehicle-body and foldable top with my invention applied, the view being into the vehicle from the rear, so as to show the inner sides of the shield. Fig. 2 is a detail in perspective front view of the upper part of a vehicle-top with my invention attached. Fig. 3 is a vertical section of my shield looking toward the inner side of the latter. Fig. 4 is a horizontal section on the line 4 4 of Fig. 3 on a somewhat larger scale, the view being in the direction of the arrows in Fig. 3. Fig. 5 is a vertical section on the line 5 5 of Fig. 3, showing in addition the front end of the bed and attached dash to illustrate the manner of attachment of the shield. Fig. 6 is a side elevation of the turnbuckle, its rods, and brace for securing the top of the shield to the vehicle-top. Fig. 7 is a detail in perspective of the brace-rod used in connection with the turnbuckle-rods, and Fig. 8 is a detail in horizontal section of a modified frame construction.

Like characters of reference indicate like parts throughout the several views of the drawings.

This improved device may be applied to any of the many styles of folding-top buggies or carriages. It is here shown on a piano-box body 10, having the dash 11, seat 12, and a foldable top 13, having the bows 14.

The front portion of my improved attachment consists of a marginal frame preferably formed of strong light material, such as wood or metal, with a covering toward the front of the vehicle of a material like oil-cloth or leather that will be waterproof and air-tight. This frame consists of a pair of parallel bars 15 and 16, located at each side edge of the frame and separated a suitable distance to permit of the introduction of rollers for side curtains between them. It also consists of the top cross-bar or board 17, the bottom cross-bar 18, the intermediate cross-bar 19, and the two vertical posts 20, which extend from the cross-bar 18 to the board 17. The posts 20 are separated from each other and from the bars 15 and 16, so as to divide the frame-space above the intermediate bar 19 into three parts, the largest of which will be in the middle and will form an opening which will be closed by means of the two sliding windows 21 and 22. These windows are supported by and are held in place by the top and bottom rails 24. The rails 24 are rendered adjustable by means of their spring-bar supports 26, as described in my said Patent No. 756,021. The spaces on each side of the above middle opening are also for windows which are not movable, and which are filled with glass, as are the sliding windows 21 and 22.

The bars 15 and 16 are connected and covered on the outer or front of the shield by the plates 28, preferably of metal, which have the longitudinal half-round groove 29 to form a recess or pocket within which the rollers 30 (see Fig. 4) are mounted. The side curtains 31 are attached to the rollers 30, and said curtains are wound upon the rollers by means of a spring in the usual manner and as shown and described in my said former patent. The object of this recessed construction is to protect the rolled-up curtains and to provide a more finished and neater job. The curtains have the usual hooks 32, by means of which the curtains when drawn out will be fastened to the vertical bow of the buggy-top.

All of the front of the storm-guard frame

above described except the windows is covered with a wind and water proof covering 33, through which close under the middle windows is an opening for the lines, which is closed by means of the flap 34.

Secured, by means of the bolts 35, to the inner sides of the vertical posts 20 are the metal straps 36, having half-circle top bends, to each of which a standard 37 is bolted. When the shield is placed in position on a vehicle, the posts 20 are outside in front of the dash, and the standards 37 are inside of the dash and bed and extend down, so as to rest on the bottom of the bed just in front of the toe-rail. The straps 36 between the bolts which secure them to the posts 20 are bent back from the posts, as shown in Figs. 1 and 5, to make room for the attachment and vertical adjustment of the eye of an eyebolt 38. The threaded end of each eyebolt is extended through a suitable opening in the standard 37 in front of it, and an adjustment of the standard toward the post is secured by screwing a nut 40 in on the threaded bolt. This construction forms a clamp at each post 20, by means of which the front member of the storm-shield is secured at its bottom to the vehicle. As the depth of the vehicle-bed and the height of the dash will vary in different vehicles, I provide a series of bolt-holes in vertical alinement through the upper ends of the standards 37 to permit of the required adjustment.

The above-described device is made fast to the vehicle-top by the following means: The board 17 has the metal plates 42, with curved extensions forming caps to the grooves 29 of plates 28, and these plates have perforated arms extending beyond the ends of the board 17. 44 is a turnbuckle having one of its bolts 45 passed through the eye in the arm of plate 42. The end of this bolt has a head which keeps the bolt from being drawn through the arm by the buckle. The other bolt 46 from the turnbuckle has an end hook which is hooked over the pin 47 of the brace-rod of the folding vehicle-top 13. A spreading-bar 48, having lateral eyes, as shown in Fig. 7, to surround the bolts 45 and 46, makes a bearing against the pin 47 at one end and plate 42 at the other and enables the attachment to be drawn tight by properly rotating the turnbuckle. The threads on the ends of the bolts are made in the usual way of turnbuckle construction—to tighten when the buckle is rotated in one direction and to loosen when oppositely rotated.

Attached to the top and ends of the board 17 is the apron 50, of suitable flexible material, the ends of which are wider than the middle, so as to extend from the shield to the vehicle-top and overlap the valance of said top. The rear corners of this apron are provided with the straps 52, of leather or other strong and flexible material, by means of which the ends of the apron are drawn down tight over the vehicle-top and secured by buckling the strap by means of the buckle 60 to the front bows 14. These latter increase in thickness and width upwardly, thereby preventing the straps from working loose.

Fig. 1 shows a letter-box 54 bolted to the standards 37 preferably by means of the eyebolts 38. This box is to additionally brace and stiffen the frame of the shield, and it also provides a convenient receptacle for the carrying and sorting of mail when the shield is used by rural-mail-delivery men. Fig. 1 also shows a mail-bag removably secured by hook to the above-mentioned box.

In the modification shown in Fig. 8 the outside bar 15 is omitted, and the edge of the plate 28 is folded in upon itself and the folded part bent at right angles to the face of the plate, as shown at 62 in Fig. 8. This secures the requisite strength and rigidity.

Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. A storm-shield attachment for top-vehicles comprising a covered frame extending from the dash to the vehicle-top and approximately the same width as the top, means for securing the lower part of the frame to the vehicle, tightening-rods having turnbuckles in their lengths for securing the top of the frame to the vehicle-top, a flexible apron fastened to the top of the frame and overlapping the valance of the vehicle-top and means for removably securing the apron to the vehicle-top.

2. The combination with a top-vehicle of a storm-shield comprising a front frame covered to exclude rain and wind, means for securing the frame to the front of the vehicle-bed, tightening-rods having turnbuckles in their lengths for securing the top of the frame at a fixed position in front of the vehicle-top, a flexible apron fastened in a fixed manner to the top of the frame and adapted to extend to and overlap the valance of the vehicle-top, and straps at the corners of the apron to secure the apron to the bows of the vehicle-top.

3. The combination with a top-vehicle of a storm-shield comprising a front frame covered to exclude rain and wind, means for supporting and securing the lower end of the frame, spacing-bars between the top of the frame and the top of the vehicle and tightening-rods having turnbuckles in their lengths to draw the frame firmly against the spacing-bars.

4. The combination with a top-vehicle of a storm-shield comprising a front frame covered to exclude rain and wind, means for supporting and securing the lower end of the frame, spacing-bars between the top of the frame and the top of the vehicle, tightening-rods having turnbuckles to draw the frame

firmly against the spacing-bars and a flexible apron secured in a fixed manner to the top of the frame and extending to and overlapping the valance of the vehicle-top and means for removably securing the apron to the vehicle-top.

5. The combination with a top-vehicle of a storm-shield comprising a front frame covered to exclude rain and wind, said frame having posts which extend below the top of and in front of the vehicle-dash when the shield is in place, standards opposite said posts on the inside of the vehicle bed and dash resting upon the bottom of the bed, metal straps secured to the posts and having rearwardly-bent top ends, said ends being fastened to said standards and means for drawing the standards toward their respective posts to form clamps for fastening the shield to the body of the vehicle.

6. The combination with a top-vehicle of a storm-shield comprising a front frame having a rain and wind proof cover, vertical posts forming a part of said frame adapted to be placed outside of the dash and extend below the top of the dash, standards resting on the bottom of the vehicle-bed on the inside of the bed at the front end of the latter, metal straps bolted to the posts having their top ends bent back in curves and fastened to the standards and eyebolts through the eyes of which the said straps pass, the stems of the bolts being passed through the standards, and nuts on the bolts outside of the standards.

7. The combination with a vehicle of a storm-shield located in front of the dash, said shield comprising a frame covered with a wind and rain proof material, said frame having a pair of vertical posts to bear against the outer side of the dash, a pair of standards located at the back of the dash opposite the posts and flexibly connected at their upper ends with the standards, and a box secured to the standards and extending back between the posts so as to make a close bracing and strengthening fit between the pairs of said posts and standards.

8. A shield having a pair of vertical posts, a pair of standards on the opposite side of the dash from the posts, one standard opposite each post and flexibly connected above the dash with its adjacent post, a box having ends which make a close fit between the post and standard on one side and the post and standard on the other side, means for clamping the dash between the posts and standards and means for securing the box in position.

9. A frame for vehicle storm-shields having a pair of rigid parallel supports at each side edge, a plate of rigid material connecting each pair of said bars said plate having an outwardly-curved longitudinal central corrugation forming a recess with the bars to receive curtain-rollers, and curtain-rollers with curtains attached, mounted in said recesses.

10. A frame for vehicle storm-shields having a pair of rigid parallel supports at each side edge, a plate of rigid material connecting each pair of bars said plate having a central longitudinal corrugation curved toward the front of the shield, a metal cap-plate at the top of each corrugation and side curtains mounted on rollers, said rollers being mounted in the recesses formed by the parallel supports and corrugated connecting-plates.

In witness whereof I have hereunto set my hand and seal, at Connersville, Indiana, this 25th day of August, A. D. 1905.

MATTHEW R. HULL. [L. S.]

Witnesses:
CHARLES C. HULL,
JAMES M. HERON.