No. 864,952. PATENTED SEPT. 3, 1907.

O. A. CHARLES.

STORM FRONT FOR VEHICLES.

APPLICATION FILED FEB. 5, 1907.

Fig. 1.

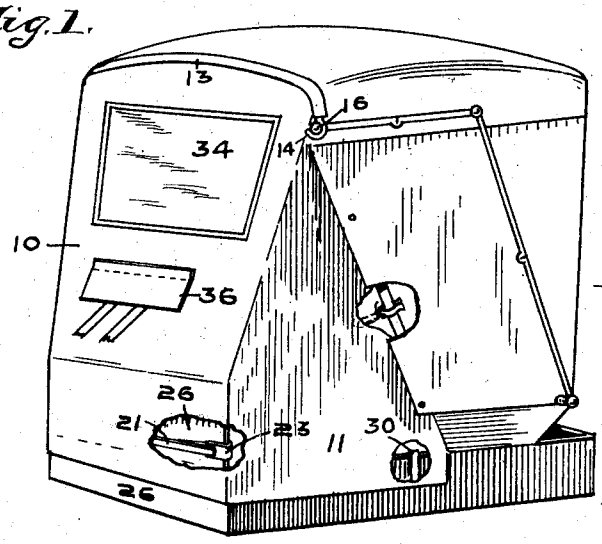


Fig. 7.

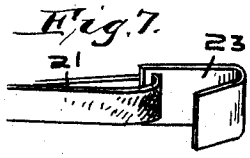


Fig. 8.

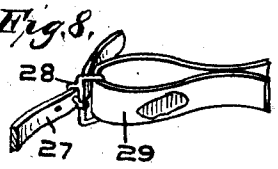


Fig. 9.

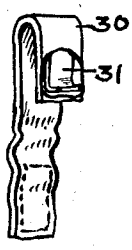


Fig. 2.

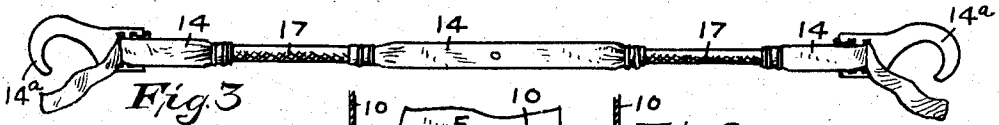


Fig. 3

Fig. 5.

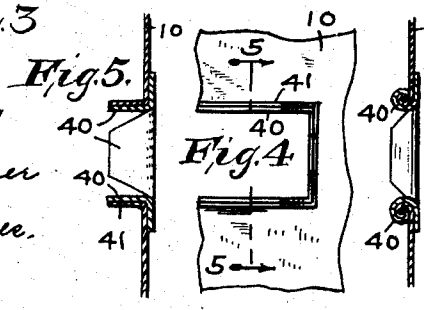


Fig. 4

Fig. 6

WITNESSES:

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STORM-FRONT FOR VEHICLES.

No. 864,952. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed February 5, 1907. Serial No. 355,919.

To all whom it may concern:

Be it known that I, OWEN A. CHARLES, 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-Fronts for Vehicles, of which the following is a specification.

The purpose of this invention is to provide a new and improved storm-front for vehicles, which may be readily and quickly attached to, or detached from, a carriage or buggy-top, and which will afford a complete protection against rain, snow, and wind, without materially excluding the light, or interfering with the management of the horse.

One of the principal purposes of my invention is to provide means for quickly and conveniently attaching and removing the storm-front to and from variously-sized vehicle-tops, and to provide an elastic means for securing the storm-front to the top and around the bends or corners of the front bow, without injuring the flexible cover of the storm-front by wrinkling or shirring it.

Another object of my invention is to provide a metal reinforcement around the opening for the passage of the driving lines, and to attach this metal reinforcement to the flexible material of the storm-front by rolling it in with the metal edges in a permanent and durable manner.

Other objects of the invention are to provide for quickly and conveniently attaching and detaching the storm-front and for the ready fitting of it to the dash, body, and other parts of variously-sized vehicles.

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

Figure 1 is a perspective view of a buggy-body and top equipped with my invention, certain parts being broken away to indicate the manner of connecting the storm-front with the dash and other parts of the vehicle. Fig. 2 is a plan of the inner side of the apron when detached and spread out. Fig. 3 is a detail view of the adjustable top straps of the apron. Fig. 4 is a detail of a portion of the apron adjacent to the opening for the lines, showing the metal for lining the edges of said opening inserted therein as it would appear in front view just before the metal flanges were rolled back to form the fastening between the metal and the material of the storm-front. Fig. 5 is a vertical section on the line 5—5 of Fig. 4. Fig. 6 is a like section on the line 6—6 of Fig. 2 showing the metal reinforcement after the edges are rolled over. Fig. 7 is a detail in perspective of the hook on the end of the strap for attaching the storm-front to the vehicle dash. Fig. 8 is a like view of the clamp for attaching the storm-front to the sides of the front bow of the vehicle top and Fig. 9 is a detail in perspective of the hook for attaching the lower edge of the storm-front to the sides of the vehicle body.

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

My improved storm-front is made out of a single piece of water proof material and when applied to the vehicle will shape itself into a front portion 10 and the two side members 11. The upper or top edge portion of the front portion 10 is adapted to be laid across the vehicle top above the front bow of the latter, just back of the valance. This upper edge is formed with a casing 13 through which a strap 14 is passed in the manner as clearly shown in Fig. 2. The body of this strap will preferably be formed of leather or heavy tape and it will have attached to each of its ends a metal hook 14^a with transverse slots in the inner end of the hook through which the ends of the strap will be threaded, as shown in Fig. 3 for the convenient attachment of the hooks in a manner which will afford ready adjustment in the length of the strap. The hooks 14^a are adapted to be caught under the front joint pins 16, on the corresponding opposite sides of the vehicle top, and in order to insure a taut condition of the strap 14 under all strains to which the device will be subjected while in use, I introduce the elastic sections 17 into the length of the strap between the hooks 14^a.

In order to allow the casing 13 to be drawn smoothly across the vehicle top, that is without shirring or wrinkling the casing or the material of the body of the storm-front I leave the strap 14 loose within said casing with the exception of a single attachment at the mid-length of the casing by means of a rivet 19. This single attachment leaves the strap on either side of it free of attachment to the casing which allows the latter to be drawn smooth and even across the vehicle top, and the attachment 19 keeps the strap from being drawn through the casing as would otherwise occur when one end was drawn on without holding the other end.

In some storm-fronts similar to my invention the strap is fastened at two points near the ends of the casing which causes the elastic member of the strap to shir up and wrinkle the material of the body of the storm-front. This shirring and wrinkling causes the material to wear most rapidly at the outer bends of the shirred portions and also causes the material to crack and go to pieces at those portions thereby greatly damaging the efficiency of the device and shortening its life. In other storm-front constructions shirred portions have been provided at the rounded corners of the vehicle top and this construction is objectionable and damaging to the durability and life of the article for the same reasons as explained above.

The front portion 10 is provided near its bottom part with a casing 20, upon its inner side, through which a strap 21 is passed. The strap 21 has the middle elastic portion 22 and is provided at each of its ends with the hook 23, shown in Figs. 2 and 7. The size of the hooks 23 and their shape prevent the accidental withdrawal of the strap from the casing 20, making it unnecessary to fasten the strap within the casing. In order to fasten the lower part of the section 10 of the storm-front to the vehicle the strap 21 is stretched and the hooks 23 are caught around the edges of the dash 26.

The sides 11 are provided with the marginal straps 27 having the buckles 28 with a loop in each through which the clamps 29 are passed for attachment to the strap. These clamps 29 comprise an inner metal strap-spring with an outside cover of soft material to prevent scarring the parts of the vehicle top to which they are attached. In attaching the sides 11 of the storm-front, which is readily done after the occupant has entered the vehicle, the clamp 29 is slipped over the side members of the front buggy bow, as shown in Fig. 1.

To attach the bottom of sides 11 to the vehicle body I provide the clamps 30, which are caught over the tops of the sides of the bed in the manner shown in Fig. 1. These clamps 30 comprise U-shaped spring steel straps 31 incased in a flexible casing which latter is sewed or otherwise fastened to the inside of the side members 11.

As indicated at 34 the front part of the storm-front will be provided with suitable window or outlook opening which will preferably be closed by means of a pane of celluloid. Below the window 34 is a suitably-placed rein-outlet having a flap or cover 36. This rein outlet, to avoid the wear and tear which would destroy an unprotected opening in the material of which the body will be constructed, is reinforced around the edges of the opening by means of the metal strips shown in Figs. 2, 4, 5 and 6. In practice this metal reinforcement will be formed out of a single sheet or plate of metal which will have integral flanges formed by properly cutting the plate where the hole occurs and pressing the metal out to form the flanges as shown at 40. The material forming the body of the storm-front will be treated in like manner to form flanges 41 lying against the outside of the flanges 40. The flanged plate will be assembled on the storm-front in its first stages, in the manner shown in Figs. 4 and 5 with the flanges at right angles to their body portions. Then by means of a press with suitable dies the flanges will be rolled over in outward direction as clearly shown in Fig. 6 in the manner of a false wire with the material of the storm-front rolled in with the metal roll. By pressing the rolled metal edge thus formed, tightly against the body of the reinforcement plate the metal will be securely fastened to the body of the storm-front so as to form a protection to the latter against the wearing friction of the driving lines which will be passed therethrough from the horse.

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-front having its upper edge formed with a casing, an elastic strap run through the casing and riveted thereto at a middle point of both strap and casing, the ends of the strap on both sides of said middle attachment being free, and hooks secured to the ends of the strap and extending externally of the casing for engagement with forward top joint-pins of a vehicle top.

2. A storm-front having its upper edge formed with a casing, a strap run through the casing and riveted at a middle point to the middle of the casing, the ends of the strap on both sides of said middle attachment being free, hooks adjustably secured to the ends of the strap and extending externally of the casing for engagement with forward top joint-pins of a vehicle top, and elastic portions introduced into said strap on each side of its middle attachment, between said middle attachment and said end hooks.

3. A storm-front having its upper edge formed with a casing, an elastic strap run through the casing and riveted thereto at a middle point of the strap and casing, the ends of the strap on both sides of said middle attachment being free, hooks adjustably secured to the ends of the straps and extending externally of the casing for engagement with forward top joint-pins of a vehicle-top, a casing near the lower edge of the storm-front having an elastic strap run freely therethrough and hooks adjustably secured to the ends of the strap and extending externally of the casing for engagement with the opposite upright end-edges of a dash.

4. In a storm-front of flexible material, a rein-hole having material from said hole turned up to form integral marginal flanges, and a metal reinforcing plate having its material for a like hole turned up to form integral marginal flanges, said metal flanges being inserted through the hole in the flexible material with the flanges of the two materials contacting with each other, and rolled together with the flexible material on the inside whereby the two materials will be securely fastened together.

5. In a storm-front the body of which is formed out of a flexible material a rein-hole therethrough reinforced with metal the flexible material and metal being rolled together around the edges of the rein-hole to fasten the two materials together.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 28th day of January, A. D. one thousand nine hundred and seven.

OWEN A. CHARLES. [L. S.]

Witnesses:
F. W. WOERNER,
L. B. WOERNER.