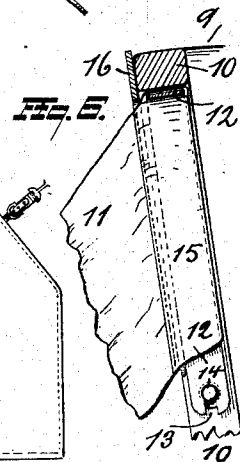
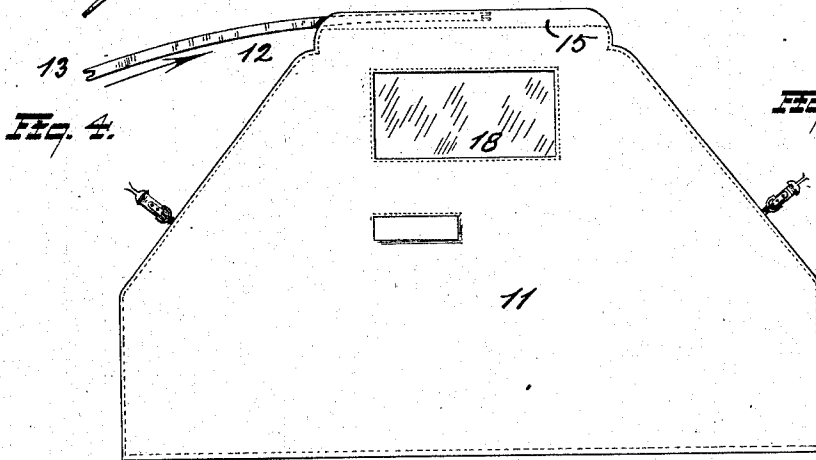
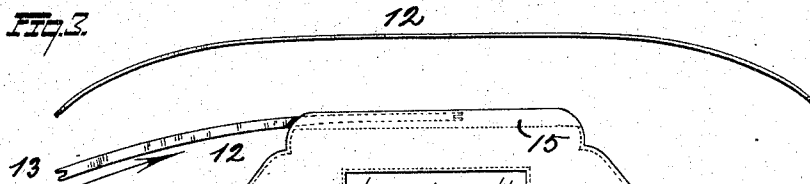
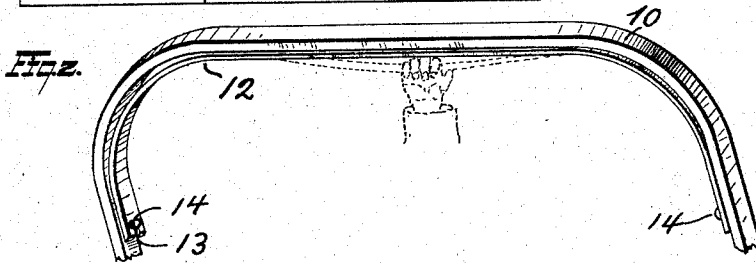
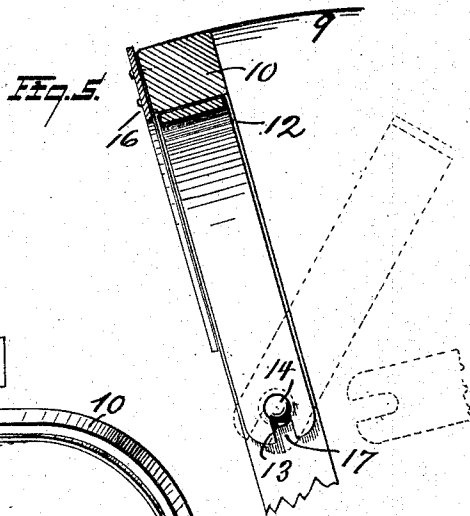
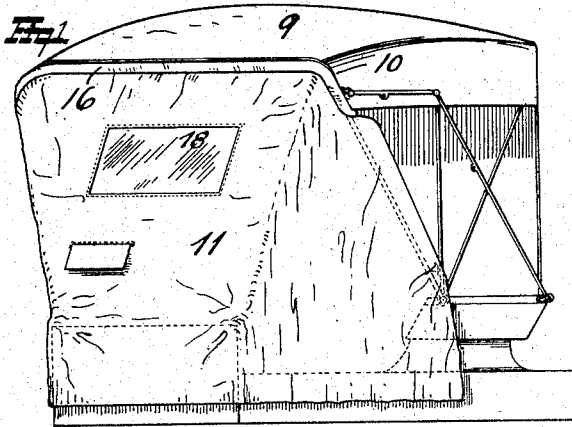


W. H. LUELF.
STORM FRONT ATTACHMENT.
APPLICATION FILED FEB. 3, 1908.

946,761.

Patented Jan. 18, 1910.



WITNESSES
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Fig. 8



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STORM-FRONT ATTACHMENT.

946,761.

Specification of Letters Patent.

Patented Jan. 18, 1910.

Application filed February 3, 1903. Serial No. 413,934.

To all whom it may concern:

Be it known that I, WILLIAM H. LUELF, a citizen of the United States, and residing at Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Storm-Front Attachment; and I do declare the following to be a clear, full, and exact description of the invention, attention being called to the accompanying drawing, with the reference characters marked thereon, which forms also a part of this specification.

Topped vehicles like buggies are usually provided with auxiliary appliances like storm-aprons, storm-fronts, sun-shades, etc. to be used for protecting the occupants whenever occasion arises. Means are provided for attaching them in position, the connection being usually to some parts of the vehicle-top. When not in use they are folded up and carried in some part, wherever most convenient, of the vehicle. These appliances are quite large and when folded up make bulky packages which for obvious reasons are not desirable in the buggy in view of their size. The provision on them of the means whereby they are attached in position interferes also to a large extent with the formation of a package in any particular desired shape and of as small a size as would otherwise be possible and also most suitable for immediate conditions or places available to receive it. These objections I overcome by an arrangement whereby the means for attaching such a storm-front form a separable part of it and remain after use of the front in position on the vehicle-top so that, when the detached front is to be stored away, only the yielding material, or fabric of which it consists, has to be dealt with when forming a package. This latter may now be readily arranged into any suitable shape, round in roll-form, or thin and flat, in which latter case it may be of a size to suit the seat, below which it may be placed and where it is out of the way.

The invention consists therefore of providing attaching means for such a storm-front which form no permanent part of it and which, when the front is not used, are removed therefrom and remain in position on the vehicle-top.

The invention consists further of the particular attaching means used and shown.

In the following specification and particularly pointed out in the claims at the end thereof, will be found a full description of

the invention, together with its manner of use, parts and construction, which latter is also illustrated in the accompanying drawing, in which:—

Figure 1, shows the upper part of a topped-vehicle with a storm-front in position. Fig. 2, shows in perspective view and at enlarged scale the front-bow of a top with the means provided for attaching the storm-front thereto. Fig. 3, shows the attaching means disconnected. Fig. 4, shows at reduced scale the storm-front spread out, illustrating also manipulation preparatory to placing it in position. Fig. 5, is an enlarged cross-section through the front-bow as it appears in Fig. 2. Fig. 6, in a similar view shows it with the storm-front in position. Fig. 7, shows my invention used for supporting a sun-shade. Fig. 8, illustrates possibility of folding the detached storm-front into a package of convenient shape for packing away.

In the drawing, 9 indicates the top of a buggy or similar vehicle. These tops are sustained by bows of which 10 indicates the bow at the front-edge of the top. For conditions which may require their use, curtain-shaped covers 11, usually called storm-fronts or storm-aprons, of suitable water-proofed fabric are provided which, when in position, inclose the front-part of the vehicle between top and dash-board and thereby protect the occupants. They are at their upper edge attached to the front-edge of the buggy-top and extend also around on the sides of the vehicle as shown in Fig. 1. Various means are provided for their attachment, the character of which means is generally such as to require dismounting of the occupant for their manipulation. These means also form usually an inseparable part of the front and greatly interfere with its folding-up after use, into a compact package. Neither one of these objections exists in my arrangement, in which the attaching means are of a nature which permits their manipulation inside of the vehicle without requiring the occupant to leave the seat and when the front is taken off after use, they remain in position on the top and do not interfere with the folding up of the detached front.

My attaching means consists of a flat spring-steel blade 12, see Figs. 3, and 4, of limited thickness, to render it flexible so as to permit its easy bending when manipulated. The ends of this blade are notched

as shown at 13, which notches are adapted to receive the shanks of two buttons 14, secured opposite each other to the inside of the front-bow, as best shown in Figs. 2, 5, 6 and 7.

5 The blade is imperforate between the inner ends of these notches and the distance between them with reference to buttons 14, is so arranged that, when said blade is in position on the front-bow as shown in Figs. 2, 10 5, 6 and 7, it is held snugly and with spring-pressure against the underside of the top or horizontal part of the bow. This length is also so limited that the blade does not touch the bow in its round corner-portions, 15 where its horizontal part meets the upright parts, which would otherwise kill the spring-action of the blade and prevent it from bearing with life pressure, as intended, against the under-side of the top-portion of the bow. 20 This position of the blade, seated upon buttons 14 and bearing against the underside of the top-portion of the front-bow is its normal position at all times irrespective of whether the front is used or not. The upper 25 edge of the storm-front is provided with a hem 15 formed by turning over the material, or by attaching a separate strip for the purpose and adapted to receive this blade. The length of this hem is such that the blade, 30 when pushed into it projects out of it at each end. When use of the front is desired, the occupant without alighting spreads it out on his lap, takes blade 12 from the front-bow and after inserting it into hem 15 as 35 shown in Fig. 4 slips the front onto the blade. This figure is at reduced scale and while the front is shown there fully spread out, such is not necessary for the purpose of its attachment, and is merely done here to 40 show its shape.

The previous removal of the blade from its resting place on the bow presents no difficulty by reason of its pliability. It is grasped as shown in dotted lines in Fig. 2 45 first tilted on buttons 14 and pulled out rearwardly as shown in Fig. 5. When the blade is in place on the front, its projecting ends are grasped, one with each hand and seated with the notches thereat upon the shanks of 50 buttons 14 on each side. The blade is then pushed forward again and pressed into the same position which it occupied before under the front bow, clamping now however also between it and this latter the front at 55 its upper edge, as best shown in Fig. 6. The front is now spread out over the dash-board as shown in Fig. 1, and its sides are secured in the usual manner by devices available for the purpose.

60 The front-edge of the top-covering 9, which is secured to the front-side of the bow, is covered by a so-called valance 16 for the purpose of providing an ornamental finish. It projects somewhat inwardly be- 65 yond the bow as shown in Figs. 5 and 6,

which are the only figures where it appears, it being omitted in the other figures to prevent obscuration of blade 12 behind it. This projecting part of the valance is taken advantage of and used to serve as a shoulder 70 against which the front-edge of blade 12 rests, and which excludes the possibility of said blade being tilted forward by the weight of front 11 when the same is in place. A washer 17 is provided around the 75 shank of buttons 14 close against the bow, to prevent the latter or its covering, if any is provided, from being scratched or marred by the ends of blade 12.

The manipulation for detaching the front 80 is obvious and requires no further explanation. Front and blade are taken off together from buttons 14 upon which the blade has been seated, next blade 12 is pulled out of the hem of the front and re- 85 turned to occupy its position on the bow as before. The detached curtain, containing now nothing rigid, no fastening devices, and being but a flexible fabric, may be folded up to form a package of any desired 90 shape. A preferable shape is shown in Fig. 8, which is a thin, flat package, which may be readily placed on the seat or under the cushion thereat where it is entirely out of the way. When a transparent panel 18 is 95 provided in this front, due account of its presence must be taken in forming the package, and the front is folded accordingly.

In Fig. 7, the invention is shown as applied to a sun-shade 19, which latter is 100 simply a short curtain serving as a protection to shade the eyes against the sun. As will be seen the front is not encumbered with any permanently attached fastening- 105 devices, which interfere with its formation into a package of convenient shape and all manipulations connected with its use are from within the vehicle. The blade will readily fit the bows of any top and limited variations in size may be met by changing 110 merely the position of buttons 14.

Having described my invention, I claim as new:

1. In combination with the front-bow of a vehicle-top having an upper horizontal 115 part which is continued downwardly at its curved ends to form the upright parts of the bow on each side, buttons on the inner opposite sides of these upright parts and an elastic, imperforate clamping-blade notched 120 at its ends and adapted to be removably seated upon the buttons mentioned, which position it normally occupies at all times, it being so proportioned as to length that when seated upon these buttons, it may bend and adapt 125 itself to the shape of the bow to bear against the underside of the horizontal part thereof with spring-pressure so that, when a storm-apron which has a hem at its upper edge, is slipped upon this blade, said apron is held 130

in position below the bow and between the underside of the same and the elastic blade below it by the spring-pressure exerted by this latter.

- 5 2. In combination with the forwardly inclined front-bow of a vehicle-top which is downwardly extended at its ends, an inwardly projecting valance on its front-side, buttons on the inner opposite sides of the
10 downwardly extended parts of the bow, an elastic clamping blade, notched at its ends and removably seated upon these buttons in a manner that while so seated, it may be
15 against the projecting part of the valance thereon, the length of the blade being so ar-

ranged that when in this position it bears also against the underside of the bow with spring-pressure, and a storm-front having a hem at its upper edge adapted to receive
20 this clamping-blade whereby, when so placed upon the same, it is held in position thereby and by the inwardly projecting edge of the valance on the front-side of the
25 bow.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

WILLIAM H. LUELF.

Witnesses:

C. SPENGEL,
T. LE BEAU.