(No Model.)

2 Sheets—Sheet 1.

A. F. BRANDENBURG.

STORM APRON FOR CARRIAGES.

No. 589,069. Patented Aug. 31, 1897.

Fig. 1.

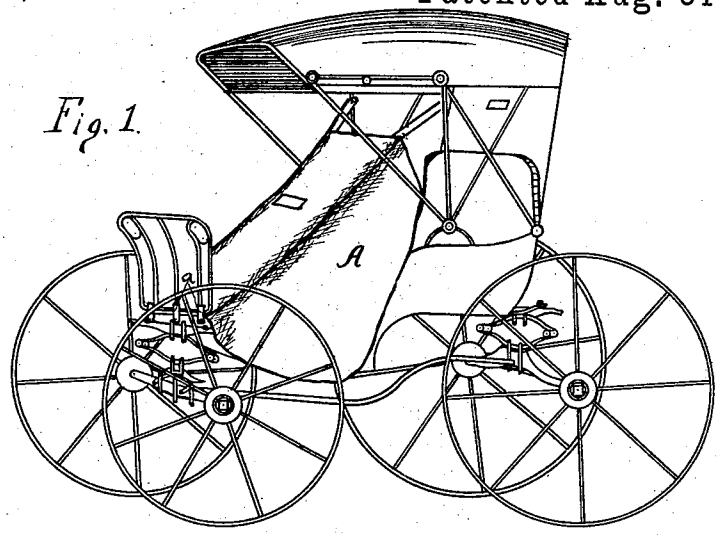


Fig. 2.

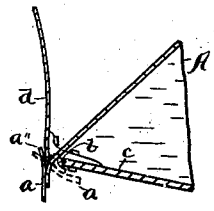


Fig. 3.

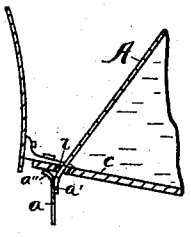


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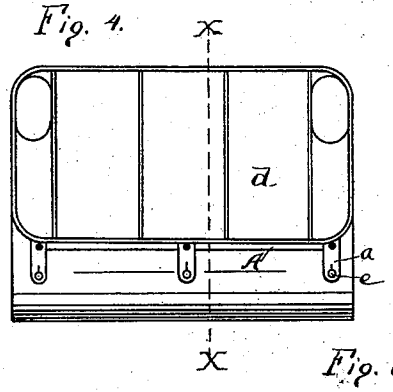


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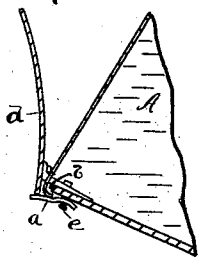
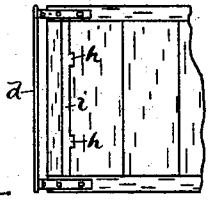


Fig. 6.



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(No Model.) 2 Sheets—Sheet 2.

A. F. BRANDENBURG.

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No. 589,069. Patented Aug. 31, 1897.

Fig. 7.

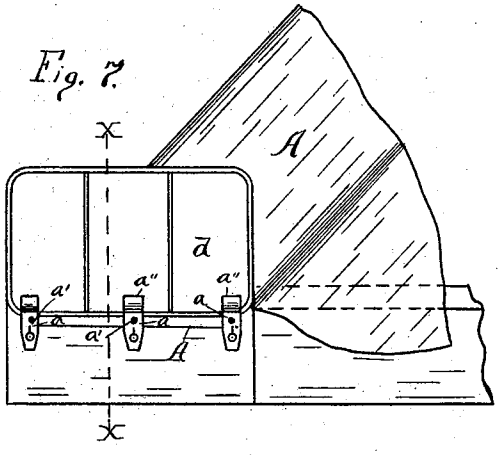


Fig. 8.

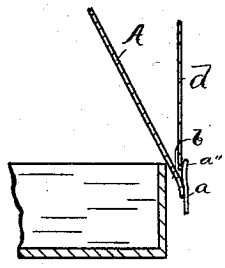


Fig. 9.

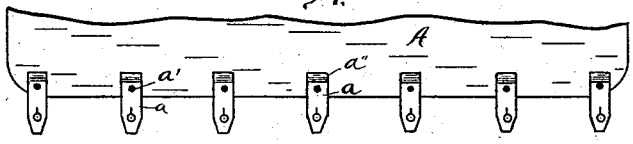


Fig. 14.

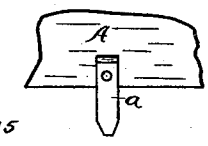


Fig. 10.

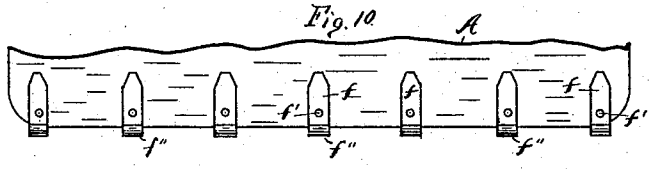


Fig. 15.

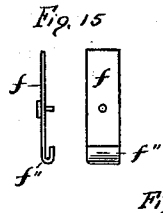


Fig. 11.

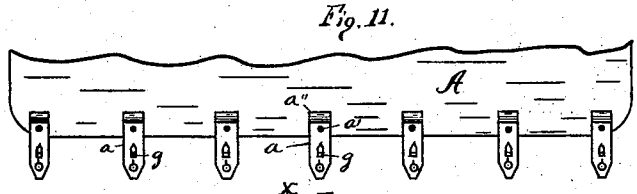


Fig. 16.

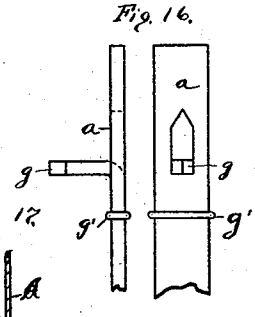


Fig. 12.

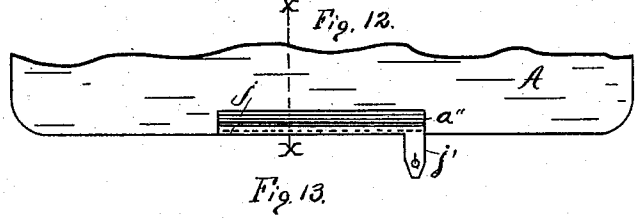


Fig. 17.

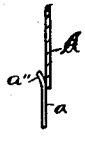


Fig. 13.

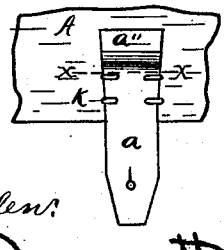
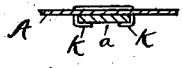


Fig. 18.



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UNITED STATES PATENT OFFICE.

ALBERT F. BRANDENBURG, OF DAYTON, OHIO.

STORM-APRON FOR CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 589,069, dated August 31, 1897.

Application filed August 10, 1896. Serial No. 602,292. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. BRANDENBURG, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Storm-Aprons for Carriages, Buggies, &c.; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in storm-aprons for carriages, buggies, and other vehicles.

The object of the invention is to provide an inexpensive storm-apron that will run the rain off through the opening between the dash and the front sill or the opening usually left between the front sill and the bottom boards.

A further object is to provide an adjustable storm-apron that may be quickly placed in position on any size of vehicle and that will thoroughly protect the occupants from rain.

The invention comprises means for securing the lower end of the storm-apron in an easy and convenient manner, as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is a perspective view of a phaeton-buggy having a storm-apron attached thereto after the manner of my invention. Fig. 2 is a vertical section through the dash and a portion of the floor of the buggy adjacent thereto. Fig. 3 is a view similar to Fig. 2, showing a slot or transverse opening in the rear of the front sill, through which the apron is inserted. Fig. 4 is a front elevation of the dash, showing the apron attached by means of buttons; Fig. 5, a section on the line $x\ x$ of Fig. 4; Fig. 6, a plan view of the inner side of the bottom of a buggy, showing a modification in the construction of the transverse slot. Fig. 7 is a perspective view of the front end of a piano-box buggy having the storm-apron attached thereto by inserting the apron between the dash and the ends of the retaining-straps engaging the outer side of the dash. Fig. 8 is a vertical section through the dash and the body, showing the apron inserted between the dash and end of the body. Figs. 9, 10, 11, 12, and 13 show different means of attaching the retaining-straps to the edge of the apron. Fig. 14 is a view of a portion of the apron having a reversible metallic retaining-strap attached thereto. Fig. 15 is a front and an edge view of the metallic retaining-strap. Fig. 16 designates front and edge views of a modified form of retaining-strap having lugs to engage with the front sill or dash or bottom boards. Fig. 17 is a sectional view on line $x\ x$, Fig. 12, showing a strap attached with both ends free. Fig. 18 is a section on line $x\ x$, Fig. 13.

There have heretofore been several ways of securing the lower end of a storm-apron in position on a buggy—for example, by buttoning the end of the apron on the front sill and by fastening it to straps which are secured to the dash and the end of the buggy. Another way of attaching said apron is by securing it under a drop or fall of leather on the inside of the dash. All of these various ways of attaching it are more or less defective, owing to their allowing the rain to enter the vehicle by running back under the edge of the apron. There are also in existence various storm-aprons that possibly do not possess the above defects, but which are none the less objectionable on account of the expense attaching to them and their unsightly appearance when on the vehicle. The present invention overcomes these objections by providing an apron such as is hereinafter described.

In a detailed description similar letters of reference will denote corresponding parts in the several views.

Referring to Figs. 1, 2, 3, 4, 5, 7, and 8, A designates a storm-apron having a series of retaining-straps a, that are secured to the lower transverse edge of said apron. The point of attachment of said straps to the apron is at a', which is essentially above the middle portion thereof, so that the free or upper end a'' will have the desired stiffness.

As is shown in Figs. 1, 2, 4, 5, 7, and 8, the end of the apron is projected through the opening b, which lies between the front sill c and the dash d. When the apron is thus inserted between said opening and pulled up, the upper end a'' of the retaining-straps will engage with the lower edge of the dash and

the lower end of said straps will come in contact with the under side of the sill *c*, as shown in dotted lines, Fig. 2. In Fig. 5 the inner ends of the straps are shown as secured to buttons *e*, which illustrates that there is a variety of ways of securing the said straps. The simplest and most preferable, however, is believed to be that shown in Figs. 1 and 2.

As buggies and other vehicles are generally constructed there is left a space or opening between the dash and front sill of the buggy for no particular purpose. This opening is utilized in connection with the present invention by providing means for enabling the projecting of the lower end of the storm-apron with its retaining-straps therethrough, as above described. There is also a transverse opening similarly provided between the bottom boards and the front sill, as indicated in Fig. 3 by the letter *i*. This opening may be made slightly wider than it is usually found to be, and the lower end of the storm-apron may be inserted therein in a manner similar to its insertion through the opening *b*. In this latter instance draft applied thereto will bring the ends *a''* of the retaining-straps in contact with the transverse sill *c*, and thereby prevent the apron from being pulled up. In either event the rain will leave the apron through the opening *b* or *i*.

In Figs. 10 and 15 the retaining-straps consist of metallic straps *f*, having hooks at one end and pivoted at *f'* to the lower end of the apron, so that their ends are reversible. This form of securing device is made of thin sheet-metal and may be passed through smaller openings *b* or *i* than thicker articles—such as the straps *a*. When the hook ends *f''* of these metallic straps are turned down, as shown in Figs. 10 and 15, they engage or hook under the lower edge of the dash, showing but a small portion of each hook and but little of the apron at the front of the buggy. When the straight ends of said straps are turned down or in the position reverse of that shown in Fig. 10, they engage with the dash or sill of the vehicle in a manner similar to the engagement of the ends *a'* of the leather straps.

Fig. 11 shows the leather retaining-straps having parts punched out and bent over to form engaging lugs *g*, that engage with the lower edge of the dash or sill and prevent the apron from being pulled out. In removing the apron these lugs *g* are pressed back into the openings from which they are cut. This enables a ready withdrawal of said straps from the opening *b* or *i*.

To remove the apron shown in Figs. 2 and 3, it is first pulled downward through the opening *b* or *i* and the upper ends *a''* of the straps pressed against it. This enables a passage of the straps between the opening.

Referring to Fig. 6, *h* designates two rectangular slots cut in the edge of the opening *i*. Through these slots the form of strap shown in Fig. 16 may be inserted. This form of strap has an enlargement *g'*, which may be passed through said slots *h*, but after the said straps are thus passed through said slots and are moved outward into the opening *i* the said enlargements will prevent the removal of the apron until the straps are drawn back in line with the slots *h*.

Fig. 12 designates an elongated retaining-strap *j*, which is sewed or otherwise secured to the lower edge of the apron. The upper edge of this strap engages with the dash or sill in a manner similar to the straps shown in Figs. 2 and 3. This form of retaining-strap has a projecting portion *j'*, which provides means for pulling the edge of the apron through the opening *b* or *i*.

As shown in Fig. 14, a less number of straps may be used and adjusted to accommodate any size buggy or carriage. These straps are made with their edges tapering downward and are drawn down between a series of clamps *k*, which leave both ends of the straps free and similar to those shown in Figs. 2 and 3. The advantage in this form of strap is that a small number of them may be used and their positions changed or adjusted as may be desired.

Having fully described my invention, I claim—

1. In a storm-apron for buggies and other vehicles, the combination with a lap-apron, of a series of oblong retaining straps or plates attached to the lower edge of said apron, and adapted to lie across the lower side of a transverse opening in the floor of the vehicle, and thereby maintain the said apron in position to direct the rain off through said opening, substantially as shown and described.

2. In a storm-apron for buggies and other vehicles, the combination with a lap-apron, of a series of oblong retaining straps or plates attached near their centers to the lower edge of the apron, the lower ends of said straps essentially projecting beyond the edge of the apron so that they may be projected through a transverse opening in the floor of the vehicle, and drawn to a position across the lower side of said opening, to hold the apron in position, as herein shown and described.

3. A lap covering or apron of waterproof material, in combination with a series of oblong retaining-straps fixed to the lower edge of said apron, and adapted to be inserted into a transverse slot in the floor of a vehicle; the said straps being essentially attached to the apron at a point near their centers so that their ends may project on one or both sides of said slot and thereby maintain the apron in position, as herein shown and described.

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

ALBERT F. BRANDENBURG.

Witnesses:
R. J. McCARTY,
L. L. ALLEN.