No. 701,337. Patented June 3, 1902.

G. R. HARRIS.

CURTAIN FOR CARRIAGES.

(Application filed Aug. 8, 1901.)

(No Model.)

Fig. 1.

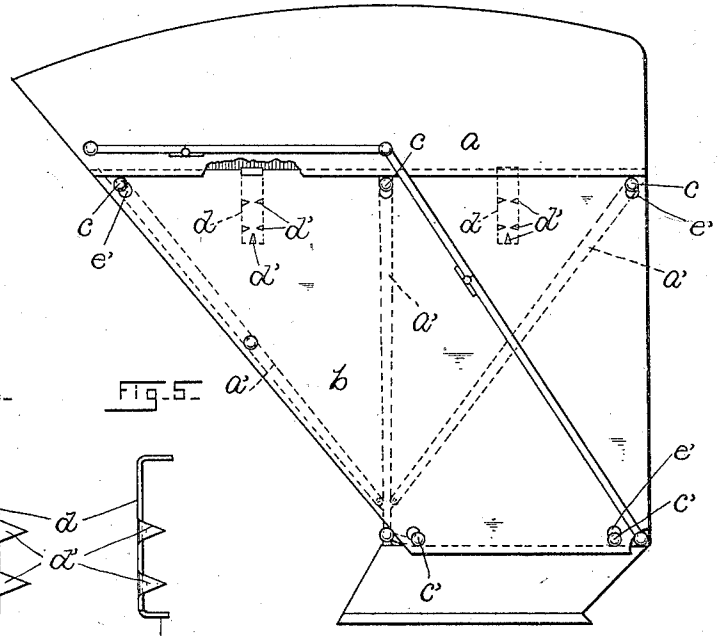


Fig. 4.

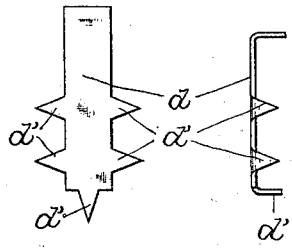


Fig. 5.

Fig. 3.

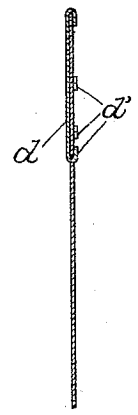


Fig. 2.

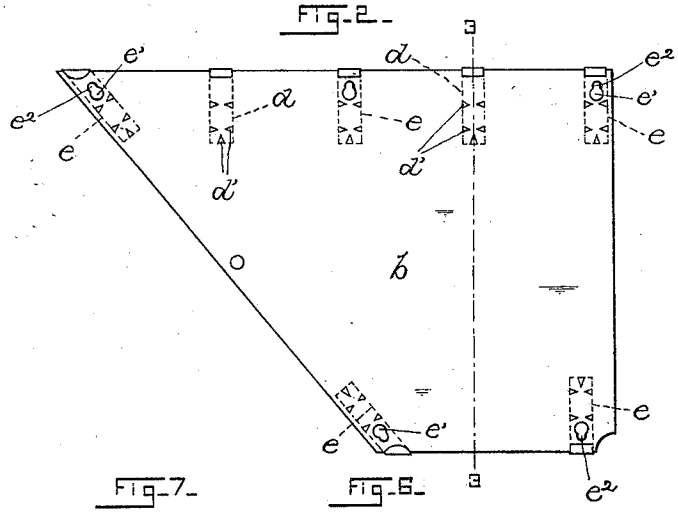


Fig. 7.

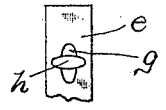
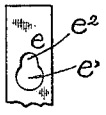


Fig. 8.



WITNESSES

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CURTAIN FOR CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 701,337, dated June 3, 1902.

Application filed August 8, 1901. Serial No. 71,361. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. HARRIS, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Curtains for Carriages, of which the following is a full, clear, and exact description.

This invention seeks to provide an improved means for attaching side curtains to carriages and for preventing such curtains from becoming unduly crimped or rolled at the point of junction with the upper part of the carriage-top. Curtains of this class are commonly attached to the sides of the framework of the carriage-top by means of studs or nails having enlarged heads, over which the said curtains are buttoned. The unsupported upper edge portions of such curtains soon become sagged and rolled outward between the points that are supported by the said studs, thus leaving openings of considerable size, through which rain, snow, and wind may enter without hindrance, and such sagging of the curtains also causes them to present an unsightly appearance, all of which objections my present invention aims to overcome.

In order to explain my invention clearly, I have provided the accompanying drawings, in which—

Figure 1 is a side elevation of a carriage-body having secured thereto side curtains embodying my improvements, and Fig. 2 is a view of the inner face of one of the said curtains. Fig. 3 is an enlarged cross-sectional view of said curtain on line 3 3 of said Fig. 2. Fig. 4 is a plan view of one of the stiffening-plates *d* before the same has been bent into proper shape to be attached to the curtain, and Fig. 5 is a view of the said plate after having been so bent. In Fig. 6 I have shown detached one of the plates which I preferably provide at the several points on the curtain where the buttonholes are located, and in Fig. 7 I have shown a similar plate adapted to be used with a button instead of a stud, as I shall explain more fully later.

In the drawings the letter *a* denotes a carriage-top supported by the usual stays or bows *a'*, and the letter *b* indicates one of the side curtains. As here shown, a stud *c* is provided in the upper part of each of the stays *a'*, by means of which studs the upper edge of the side curtain is secured to the carriage-top. The lower portion of the curtain *b* is secured in position by means of similar studs *c'*.

Secured to the upper edge of the curtain between the points where the latter is attached to the studs are stiffening-strips *d* of thin resilient material, like sheet steel or brass, and of a length sufficient to prevent the sagging and rolling outward of the curtain edge in the objectionable manner explained above. These stiffening-strips are formed, as here shown, with laterally-extending spurs or points *d'*, that are bent at right angles to the main plate, as seen in Fig. 5, said points being forced through the curtain and finally clenched on the opposite side, as seen in Fig. 3. The upper end of each stiffening-strip *d* is also doubled back upon itself and pressed down upon the opposite side of the curtain, thus securing the said strips firmly to the curtain. These strips hold the curtain edge at all times flat and smooth and effectually prevent it from sagging and rolling outward.

In addition to the described stiffening-plates I preferably reinforce the curtain at the points where it is attached to the studs *c* by securing to the curtain metallic strips *e*, similar to the strips *d*, but provided with openings *e'*, adapted to slip over the studs *c*, and also with a slot e^2, that may fit the neck of the said stud. By thus reinforcing the buttonholes in the curtain said holes are prevented from tearing out and the adjacent portions of the curtain are kept from sagging and curling outward.

In Fig. 7 I have illustrated a slight modification of my invention, in which an elongated opening *g* is provided in plates *e* in place of the openings *e'* e^2, and instead of the fixed studs *c* I provide buttons *h* of elongated form and adapted to pass through the described openings *g*, the said buttons being then turned to a position at right angles to the slots *g*, as in Fig. 7, thus securely locking the curtain in position on the sides of the carriage-top.

The described plates *d e* are of such length that the curtains *b* may be folded into small compass whenever the said curtains are not required to be used. The said plates may

be very cheaply produced and they may be readily applied to carriages as commonly constructed.

Having described my invention, I claim—

In combination with a carriage-top, a side curtain, means for attaching said curtain to the said carriage-top at stated points, and means for preventing the sagging of said curtain between the said points of attachment, consisting of metallic strips formed with spurs that are bent, and clenched upon the curtain, as set forth, and whose projecting end portion is bent and clamped over the edge of said curtain, substantially as specified.

Signed at Norwich, Connecticut, this 30th day of July, 1901.

GEORGE R. HARRIS.

Witnesses:

FRANK H. ALLEN,

MAY F. RITCHIE.