G. SUNDBACK.

VEHICLE AND OTHER CURTAIN.

APPLICATION FILED JAN. 30, 1917.

1,432,219. Patented Oct. 17, 1922.

2 SHEETS—SHEET 1.

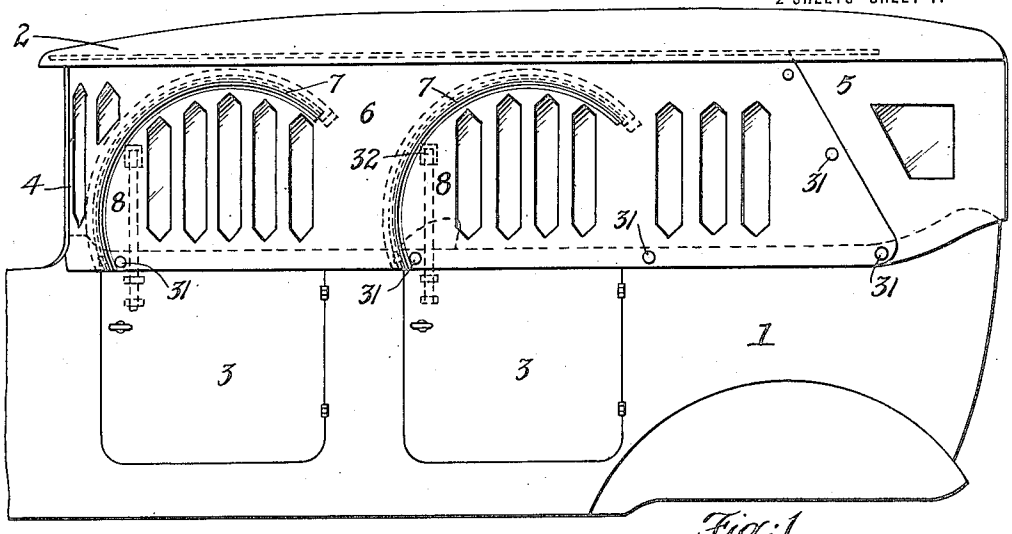


Fig. 1.

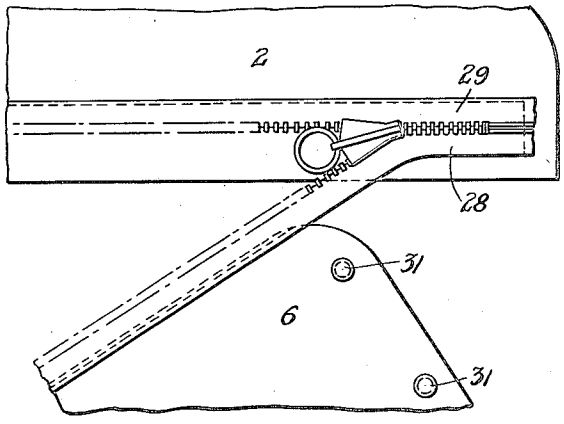


Fig. 2.

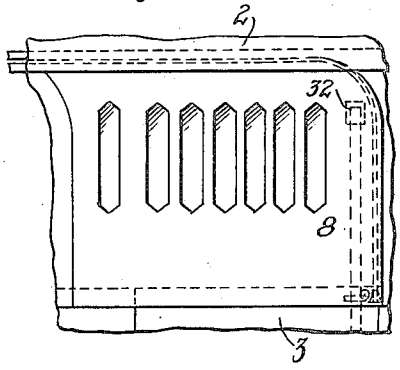


Fig. 8.

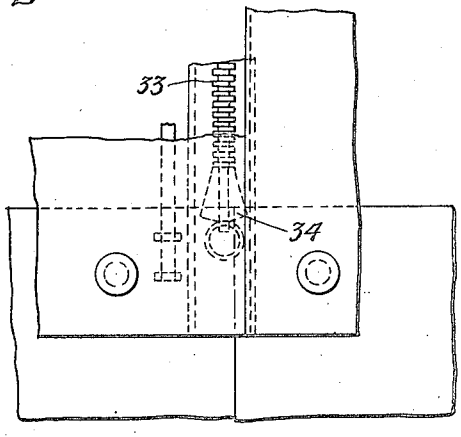


Fig. 3.

INVENTOR

Gideon Sundback,

BY J. R. Wooster.

ATTORNEY

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2 SHEETS—SHEET 2.

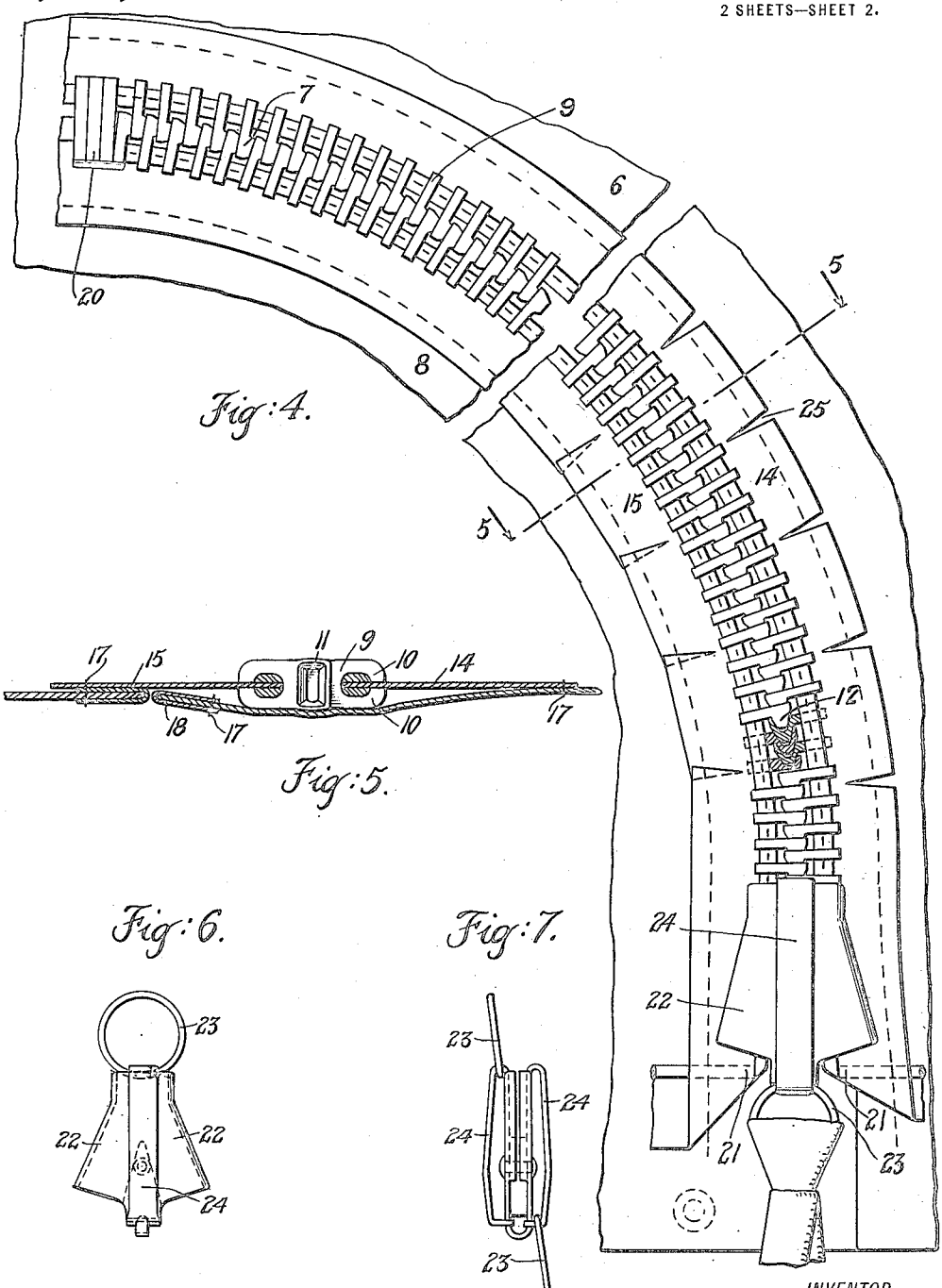


Fig: 4.

Fig: 5.

Fig: 6.

Fig: 7.

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UNITED STATES PATENT OFFICE.

GIDEON SUNDBACK, OF MEADVILLE, PENNSYLVANIA, ASSIGNOR TO HOOKLESS FASTENER COMPANY, A CORPORATION OF PENNSYLVANIA.

VEHICLE AND OTHER CURTAIN.

Application filed January 30, 1917. Serial No. 145,344.

To all whom it may concern:

Be it known that I, GIDEON SUNDBACK, a subject of the King of Sweden, residing at Meadville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improvement in Vehicle and Other Curtains, of which the following is a specification.

This invention relates to vehicle curtains, and has particular reference to storm curtains such as are used on automobiles, etc. The object of the invention is to provide curtains which can be quickly placed and removed and which can also be quickly opened and closed. A further object of the invention is to provide a continuous closure for the curtain openings, so as not only to do away with the use of snap or turn button fastenings, but also to provide a practically wind and rain proof closure. Curtains constructed according to this invention and more especially intended to be used in conjunction with a collapsible top, can be rolled up within the top when not in use without occupying any more space, and requiring less manipulation than curtains heretofore in use employing a number of snap or turn button fastenings.

The invention, with reference to a preferred form thereof is shown in the accompanying drawings, wherein—

Figure 1 is an elevation of the invention applied to an automobile,

Figure 2 is a detail showing a means for permanently attaching the curtain to the top,

Figure 3 is a detail of a door arrangement capable of opening and closing with the door,

Figure 4 is a detail of the continuous fastener, as applied to a curved opening such as for a door, seen from the inside,

Figure 5 is a cross section on line 5—5 of Figure 4,

Figures 6 and 7 are details of the closure operating device.

Figure 8 shows a modification.

In Figure 1, 1 represents an automobile body having the ordinary collapsible top 2, a door or doors 3, and a windshield 4. 5 is the rear curtain which is ordinarily fastened at the bottom to the body 1 and at the top to the collapsible canopy top 2. 6 represents the side curtain, which as herein shown is in one piece, having slits 7 therein forming the openings and door sections 8 above the doors 3. The curtain sections corresponding to each door can be separate if desired, and either have continuous fastenings such as shown in Figures 4 and 5, or any other desired form, as is well known.

Figure 4 shows the appearance from inside the car, and Figure 5 a section, it being seen that these sections 6 and 8 are connected by the interlocking devices 7. The interlocking devices 7 each consist of small metal stampings 9 having a pair of compressible jaws 10, an interlocking recess 11 on one side and a corresponding projection 12 on the other side. These interlocking members are clamped in staggered relation on a pair of stringers or tapes 14, 15, which are respectively attached, as by stitching 17, to the curtain sections 6, 8. The edges of the curtain are bound with tapes, as 18, so as preferably to slightly overlap when closed, as seen in Figure 5, in the general direction of movement of the vehicle. At the upper end, the stringers are connected by end members 20, and at the lower end, each stringer preferably carries a stop member 21. Mounted to slide on both stringers is a cam operating device or slider 22 having curved channels which act as cams to lock and unlock the interlocking members when it is pulled back and forth by means of a pull device 23 engaging at either end of a loop 24. There is a pull device on each side of the slider 22, so that the curtain can be opened and closed by a positive movement in each direction from either the inside or outside. The outside of the closure and slider are of course covered by the overlying flap of curtain section 6.

An important feature of this invention resides in the employment of a curved or continuous curtain opening both for the vertical edge and the top of the door section of the curtain, so that a single operation will open or close both the side and top. This is effected by means of the stringers 14 and 15 being gored as at 25, and cut out, or overlapped, as at 26, together with a relatively wide spacing of the interlocking members on the outer edge, and a relatively close spacing on the inner edge. This is accomplished without causing the interlocking members to either wedge in the slider, or to come open, by the design of the interlocking projections and recesses. As herein

shown the projections and recesses are transversely elongated and rounded, and are also rounded from front to back, the front surface of each projection being slightly inclined from the edge of its recess to the top of the projection, as seen in section in Figure 4. These members, in moving through the slider, are automatically guided into and out of engagement without binding, and when interlocked can be bent practically double or twisted, without unlocking. It is not therefore necessary to confine the closure to a single plane, and this will be of especial importance in an automobile curtain where the front curtain, especially, frequently curves vertically in order to fit the windshield.

The top edge, or edges, of the curtain, are similarly fastened to the top, inside its lower edge, one stringer being fastened to the top, and the other to the edge of the curtain, the stringers of course being straight in this instance, instead of curved.

In securing the side curtain to the top, the stringers are continued at the rear as shown at 28, 29, in Figure 2 beyond the rear edge of the curtain, but still within the top for a sufficient distance so that when separated from the top the stringer extension 28 permits the curtain to be swung backward and folded up under the top in the usual manner without being separated. As shown herein, the curtain 6 may be secured to the rear curtain 5 by buttons 31 and also to the body, windshield and doors by similar buttons. These buttons, however, do not have to be manipulated in opening and closing the doors.

Each door section 8 also has a pocket 32 to receive an upright rod 33, which can be detachably fastened, as at 34, to the door. By fastening the curtain to the door and to the body adjacent the lower end of the opening, the slider, by a pulling motion, is enabled to positively open and close the curtain with a one hand pull from either inside or outside.

In Figure 8, the vertical edge of the curtain is closed as before, but the curve at the top is sharper, and the curtain is directly attached to the top. There may be the same extension of either or both of the stringers, as shown in Figure 2, at the hinge side of the door curtain section, so that the curtain sections can be independently rolled up under the top. Figure 8 also illustrates the invention where a side curtain is made of two or more separate sections each rolling up independently under the top. A transverse curtain, such as is sometimes used behind the driver's seat in a touring car, or a rear curtain, can also be attached to the top along its upper edge in the manner shown at the top in Figure 1, and attached at its lower edge across the back of a seat, as by buttons.

While one specific form of interlocking cam operated fastening means is shown herein, the invention is not to be restricted thereto, but can be embodied in connection with other forms of fastenings operated by a sliding operating device. In addition to automobile tops, the invention will be found useful in connection with boats, wagons, trucks, canopies, etc., wherever it is desired to open and close a space under a top or the like.

What is claimed is:

1. A curtain for a vehicle or the like having a window and a slit extending inwardly and then at an angle around two sides of the window to form a swinging window carrying flap, and means sliding on the edges of the slit to open and close said flap to permit ingress and egress.

2. In combination with a top, a side curtain below the top, a body having a door below the curtain, a flap formed in the curtain along a line continued upwardly from the swinging side of said door and horizontally toward the opposite side, means for attaching the flap to the door adjacent the edge, members mounted on the adjoining edges of the curtain and the flap for forming a separable connection, and means sliding thereon for progressively connecting the flap and the curtain body for permitting the flap, when disconnected, to swing with the door independently of the top and the body of the curtain.

3. In combination with a top, a side curtain below the top, a body having a door below the curtain, a flap formed in the curtain along a line continued upwardly from the swinging side of said door and horizontally toward the opposite side, means for attaching the flap to the door adjacent the edge, members mounted on the adjoining edges of the curtain and the flap for forming a separable connection, a support for the flap carried by the door, and means sliding thereon for progressively connecting the flap and the curtain body for permitting the flap, when disconnected, to swing with the door independently of the top and the body of the curtain.

4. The combination with a top carrying a stringer, and interlocking members thereon, of a side curtain carrying a similar stringer and cooperating locking members, means sliding on said stringers for connecting and disconnecting said members, said stringers being extended beyond the edge of the curtain whereby to permit the curtain when said members are disconnected to be moved bodily relatively to the top.

5. The combination with a curtain and a support such as a top, of a stringer on the adjoining edges of the support and the curtain, said stringers being extended beyond the side of the curtain and connected together, connecting members on the stringers,

and means sliding on the stringers for operating said connecting members to connect and disconnect the curtain and the support and permit the curtain when free to be swung bodily independently of the support.

6. In combination with a vehicle body having a door and a top above the body, a side curtain of width greater than the door and adapted to be secured to the top and body, a slit in the curtain extending upwardly from the bottom thereof to form a swinging flap having its free edge continuing the edge of the door, and means sliding on the edges of the slit for releasing the flap when slid upwardly and closing the flap when slid downwardly.

7. An entrance curtain for a vehicle comprising a single piece of fabric having a slit therein extending inwardly from one edge and then curving laterally and extended to such extent as to form a swinging flap, interlocking members mounted at the edges of the slit having even spacing on straight portions and varying spacing on the curved portions of the slit, and sliding means for progressively locking and unlocking said members, the members being locked when said means is at the edge end of the slit and unlocked when said sliding means is at the inner end.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this twenty-fifth day of January, 1917.

GIDEON SUNDBACK.

Witnesses:

MAUDE HARPER,

ALGER F. RUSSELL.