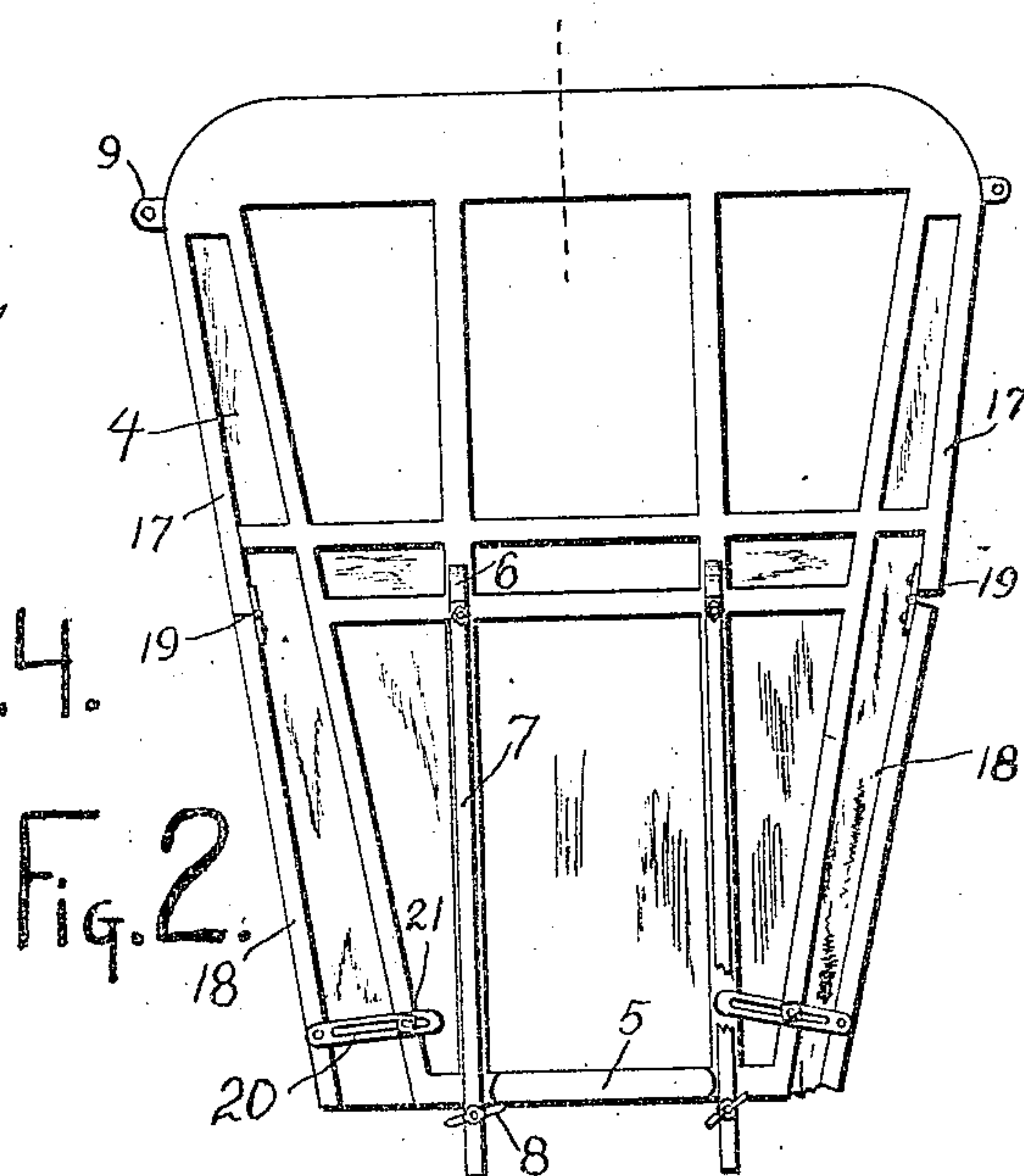
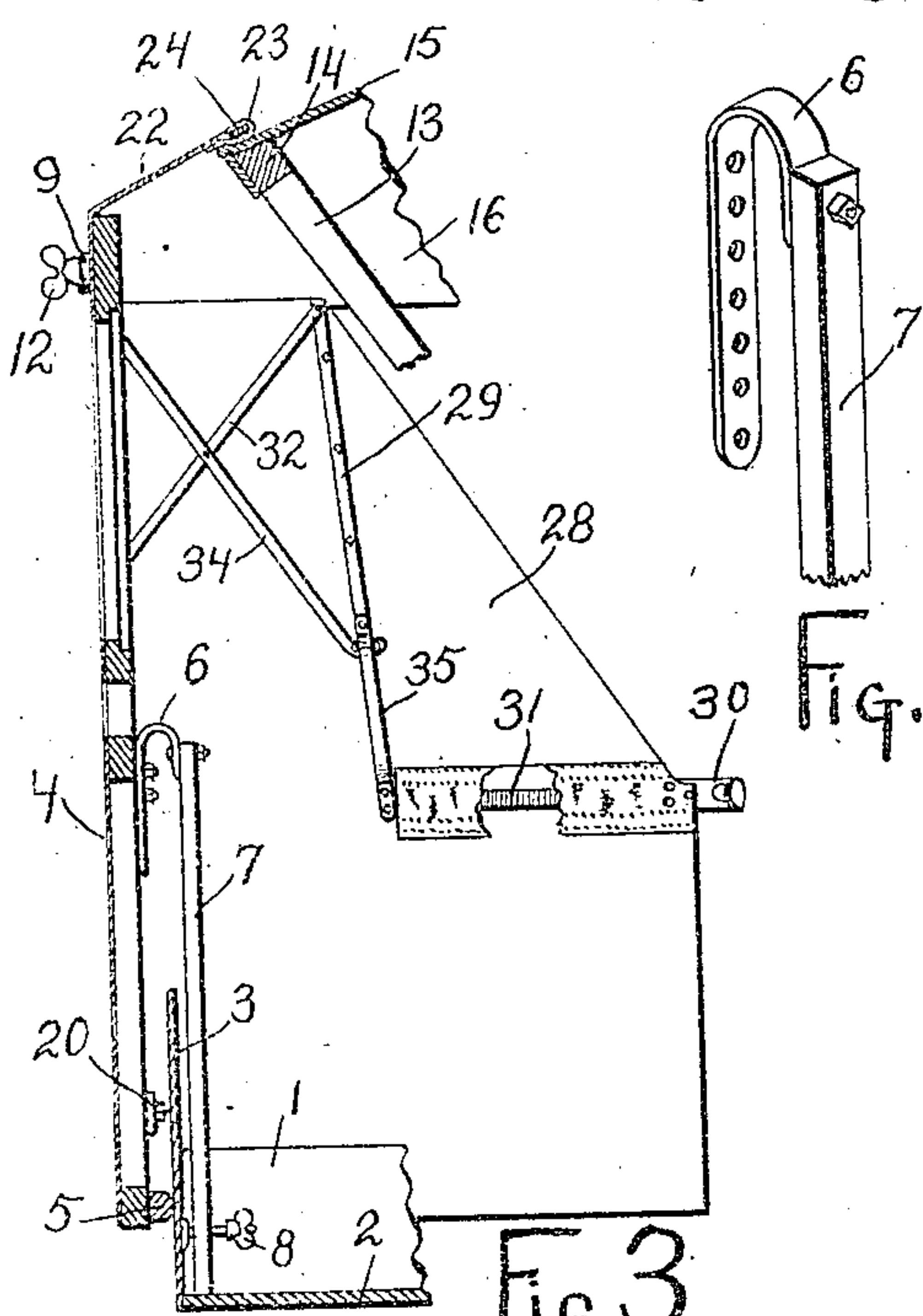
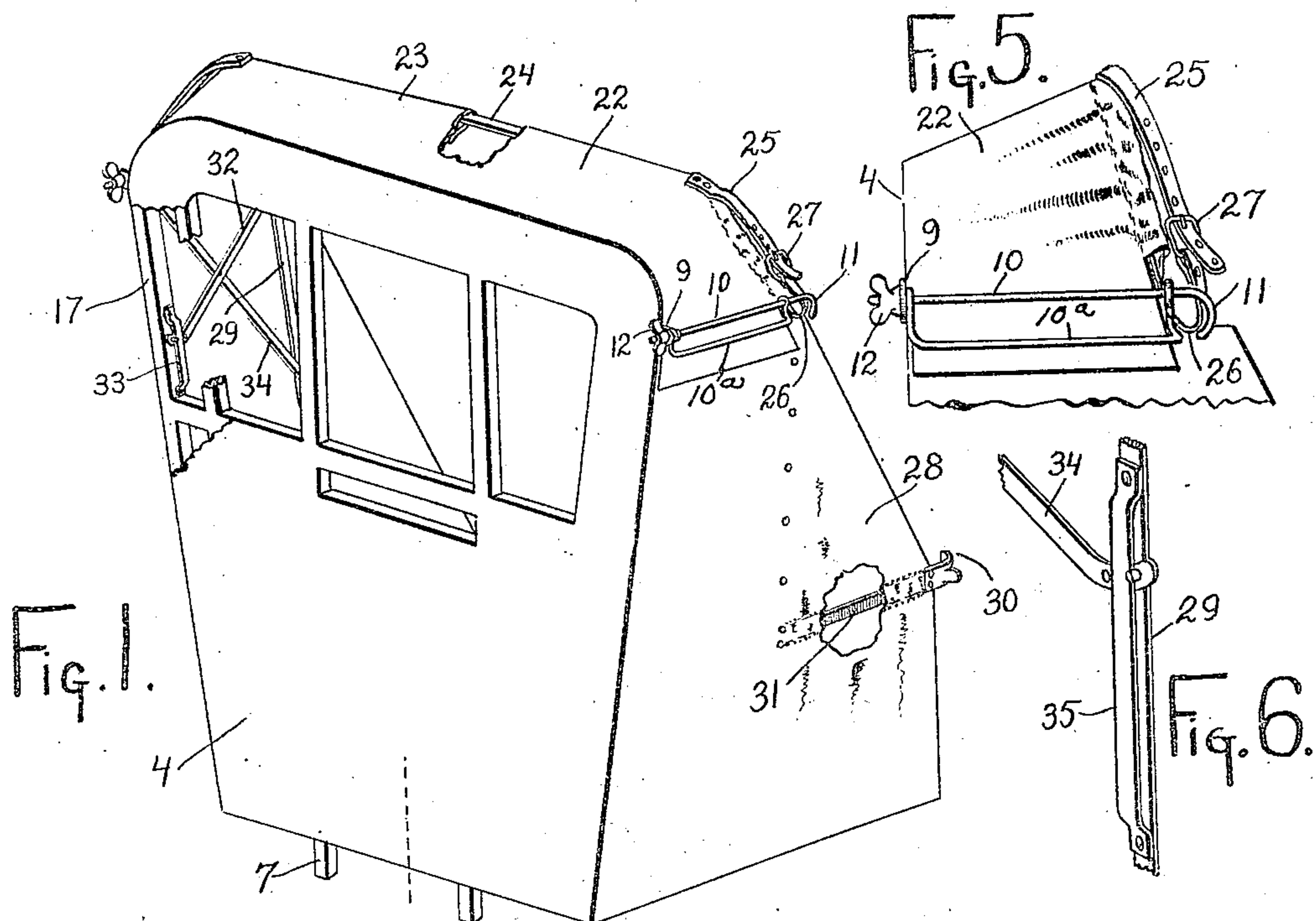


No. 824,515.

PATENTED JUNE 26, 1906.

C. M. STONE.
STORM FRONT FOR VEHICLES.

APPLICATION FILED OCT. 23, 1905.



Witnesses:
Elmer R. Shipton
M. S. Belden.

Clinton M. Stone
Inventor
by James W. See
Attorney

UNITED STATES PATENT OFFICE.

CLINTON M. STONE, OF CONNERSVILLE, INDIANA, ASSIGNOR OF ONE-THIRD TO FREDERIC I. BARROWS, TRUSTEE, AND ONE-THIRD TO FREDERIC I. BARROWS, OF CONNERSVILLE, INDIANA.

STORM-FRONT FOR VEHICLES.

No. 824,515.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed October 23, 1905. Serial No. 283,922.

To all whom it may concern:

Be it known that I, CLINTON M. STONE, a citizen of the United States, residing at Connorsville, Fayette county, Indiana, (whose post-office address is No. 212 West Eleventh street, Connorsville, Indiana,) have invented certain new and useful Improvements in Storm-Fronts for Vehicles, of which the following is a specification.

15 This invention pertains to improvements in the construction of storm-fronts for vehicles and will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

15 Figure 1 is a perspective view of a storm-front embodying my improved features of construction, parts being broken away in several places to expose the inner construction; Fig. 2, a rear elevation of the front wall with the side walls and roof omitted; Fig. 3, a vertical transverse section of the structure shown in conjunction with a portion of the vehicle body and top; Fig. 4, a perspective view of one of the legs connecting the structure with the body and dash of the vehicle; 25 Fig. 5, a side elevation of the upper portion of the structure, and Fig. 6 a perspective view of the sliding joint of one of the adjustable side braces.

30 In the drawings, 1 indicates the front portion of the box or body of a vehicle; 2, its floor; 3, the dash; 4, the front wall of the storm-front of generally ordinary form and construction disposed in front of the dash and extending above it, this front wall having the usual construction represented by a fabric secured upon a skeleton framework, the wall being provided, as usual, with proper windows, &c.; 5, a pad secured at the rear of the lower edge of the front wall and adapted to bear against the front surface of the dash, its main purpose being to prevent damage to the dash; 6, a pair of bows secured to the rear face of the front wall some distance above the top of the dash, these bows each presenting two members downwardly, the rear member being provided with a series of bolt-holes permitting the bows to be secured in selective position upon the front wall; 7, a leg secured to the rear member of each bow, the feet of these legs resting upon the floor of the body of the vehicle; 8, adjusting-screws near the lower ends of the legs, their forward ends

bearing against the inner surface of the dash below the pad 5; 9, an eye projecting outwardly from each side edge of the front wall near its top or at such height as to substantially correspond with that of the front top-prop on the vehicle-top; 10, a rod extending fore and aft through each of these eyes; 10^a, 60 struts in the form of rods with eyes at each end engaging the rods 10, the forward ends of these struts abutting against the rear surfaces of eyes 9, while their rear ends are adapted to abut against the front surfaces of the front props of the vehicle-top; 11, a hook on the rear end of each of the rods 10, adapted to hook over the front prop of the vehicle-top; 12, a nut on the forward end of each of these rods engaging in front of the eyes 9; 70 13, the front bow of the vehicle-top; 14, the top portion of this bow; 15, the front portion of the roof of the vehicle-top; 16, the side portion of the vehicle-top; 17, the upper portion of the side members of the frame of the front wall of the general structure; 18, the lower portions of these side frames; 19, hinges uniting the upper to the lower portions of the side members of the frame of the front wall, these hinges being preferably located at about 80 half the height of the front wall; 20, slotted links secured to the rear surfaces of the lower side members 18 near their bases and extended inwardly upon the rigid portions of the framework of the front wall, and 21 clamp-screws 85 adjustably clamping the inner portions of these links to the rigid portion of the frame of the front wall.

The parts thus far referred to pertain to the front wall of the structure, and it may be 90 well at this stage to consider the arrangement and use of these parts aside from other matters. The front wall is to be set in place with its lower portion at the front and the legs 7 at the rear of the dash, the latter resting their 95 feet upon the floor of the body. The vertical row of perforations in the front members of bows 6 permit of the vertical adjustment of the front wall to suit the general height of the top work of the vehicle and the adjusting-screws 8 in the legs permit of the front wall being adjusted to a vertical position. The 100 rods 10 are to have their hooks 11 engaged over the front props of the vehicle-top, and the nuts 12 being properly adjusted the front wall is thus supported in vertical position 105

and rigid condition. The struts 10^a abut between the front props of the vehicle-top and the eyes 9 and act as distance-pieces for the upper portion of the front wall.

- 5 The base of the front wall should desirably correspond substantially with the width of the dash, and as this varies with the different vehicles provision is made for varying the width of the base of the front wall.
- 10 The nuts 21 being loosened the lower side members 18 may be adjusted inwardly and outwardly, the flexible material with which the front wall is faced permitting of this adjustment. In Fig. 2 the lower member 18 at
- 15 the left is shown in farthest outward position corresponding with a wide dash and vehicle-body, while at the right the lower member 18 is shown as flexed inwardly, corresponding with the narrower body and dash.
- 20 Proceeding with the drawings, 22 indicates the roof portion of the storm-front, the same being formed of flexible material, having its front edge secured to the upper edge of the front wall of the structure, the ends of this
- 25 roof portion turning downwardly some little distance and having their front edges also secured to the front wall; 23, the rear edge of this roof portion of the storm-front, the same consisting, preferably, of a hem; 24, a metallic ribbon disposed within this hem and extending from near one end to near the other
- 30 end of the rear edge of roof portion 22 or to the points where that roof portion begins to turn downwardly; 25, straps having their inner ends secured rigidly to the ends of the ribbon 24 by being secured to the hem 23 and to the ends of the ribbon disposed within it, these straps lying exterior to the roof portion of the storm-front; 26, hooks at the outer
- 40 ends of the straps 25, adapted to engage under the front props of the vehicle-top, the same props engaged by the hooks 11, and 27 a buckle in each of the straps 25, by means of which they can be lengthened or shortened.
- 45 The width of the roof portion 22 should be such that its rear edge will overlies the front portion of the vehicle-top. The storm-front having been placed in position and the hooks 26 engaged with the front props, the proper
- 50 adjustment at the buckles 27 permits the rear portion of the roof to be drawn into snug contact with the underlying front portion of the vehicle-top. The metallic ribbon 24 gives transverse stiffness to the rear edge of the
- 55 roof portion of the storm-front, so that before the buckles are adjusted and at all times a fore and aft limberness at the rear edge of roof portion 22 is avoided. By this means the substantial straightness of the rear portion is not dependent on the straps 25 being
- 60 tightly drawn.

- Proceeding with the drawings, 28 indicates the side walls of the storm-front, their rear margins being on such lines as to properly
- 65 correspond with the front margins of the ve-

hicle-top, the upper extremities of these side walls being permanently secured to the downwardly-projecting portions of the roof portion 22 of the storm-front; 29, metallic stiffening-pieces permanently secured to the inner surfaces of these side walls between their front and rear margins, their upper extremities being near the top of the side walls and their lower extremities at about their mid-height; 30, a hook secured to the inner margin of each side wall at the level of the bases of the stiffening-strips 29, these hooks being adapted to engage the front bow of the vehicle-top; 31, a strip of spring material, as of elastic fabric, secured to the side walls, their rear ends being secured at the hooks 30 and their front ends being secured at the bases of the stiffening-strips 29; 32, a diagonal brace lying against the inner face of each side wall, their upper and rear ends being pivoted at the upper extremities of stiffening-strips 29, their forward extremities being provided with a pair of inwardly-projecting pins; 33, a guide-loop, secured to the inner face of each upper side member of the frame of the front wall, the lower front ends of the braces 32 passing between the frame members and the loops, and the pins straddling the loops so that the forward ends of the braces are at liberty to slide up and down; 34, a similar but reversed diagonal brace upon each side wall, the upper forward ends of these latter braces being pivoted to the framing of the storm-front and their rear lower ends overlying the lower portions of stiffening-strips 29 and being provided each with a pair of inwardly-projecting pins, the two diagonal braces constituting a pair at each side wall of the structure, being pivoted at their intersection, and 35 a loop secured at the base of each stiffening strip 29 and engaged by the lower rear end of the diagonal brace 34.

The general structure having been placed in position upon the vehicle, it is apparent that the side walls may have their rear edges moved backward and forward, the diagonal braces yielding as desired, but at all times giving side stiffness to the portions of the side walls comprehended between the front wall and the stiffening-strips 29 regardless of whether these portions of the side walls be flat and taut or be loose and puckered. These portions of the side walls therefore possess the qualities at once of substantial stiffness and flexibility, permitting without flimsy looseness of the ready production of liberal side openings into the vehicle. The portions of the side walls rearward of the stiffening-strips 29 are quite flexible. The side walls having been narrowed forwardly to the desired extent and the occupant of the vehicle being in position, he may draw the side walls rearwardly. The hooks 30 having been engaged around the front bows of the

vehicle-top puts the rear portions of the side walls under strain and holds all portions of the side walls in desired condition. When the device is removed from the vehicle, the roof portion 22 may collapse forwardly, and the stiffening-strips 29 may be pushed forwardly and the rear portions of the side walls folded inwardly, the whole structure thus becoming condensed into a comparatively thin body.

I claim as my invention—

1. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, legs disposed to the rear of the front wall and having their upper ends secured thereto, bows forming the means for securing the legs to the front wall and having their rear members secured to said legs and their front members provided with a vertical series of bolt-holes for bolts to serve in securing them to the front wall, and adjustable connections extending rearwardly from the upper portion of the side margins of the front wall and adapted to engage the top props of a vehicle-top.

2. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, legs disposed to the rear of the front wall and having their upper ends secured thereto, adjustable connections extending rearwardly from the upper portion of the side margins of the front wall and adapted to engage the top props of a vehicle-top, and lower side frame members of said front wall having their upper ends flexibly connected with the remaining portions of said front wall, and fastening devices for securing said lower frame members in adjusted position.

3. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, legs disposed to the rear of the front wall and having their upper ends secured thereto, adjustable connections extending rearwardly from the upper portion of the side margins of the front wall and adapted to engage the top props of a vehicle-top, and lower side frame members of said front wall having their upper ends hinged to the remaining portion of said front wall, and fastening devices for securing said lower frame members in adjusted position.

4. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, legs disposed to the rear of the front wall and having their upper ends secured thereto, adjustable connections extending rearwardly from the upper portion of the side margins of the front wall and adapted to engage the top props of a vehicle-top, and lower side frame members of said front wall having their upper ends flexibly connected with the remaining portions of said front wall, and slotted links and clamp-screws for securing said lower frame mem-

bers in adjusted position relative to the remaining portions of the front wall.

5. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, means for securing the same to a vehicle, a flexible roof portion having its front edge secured to the top of said front wall, straps and buckles at the ends of the rear edge of said roof portion, and hooks at the extremities of said straps adapted to engage the front props of a vehicle-top.

6. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, means for securing the same to a vehicle, a flexible roof portion having its front edge secured to the top of said front wall, straps and buckles at the ends of the rear edge of said roof portion, hooks at the extremities of said straps adapted to engage the front props of a vehicle-top, and a metallic ribbon secured to the rear edge of said roof portion and having its ends connected with said straps.

7. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, means for securing the same to a vehicle, a flexible roof portion having its front edge secured to the top of said front wall, straps and buckles at the ends of the rear edge of said roof portion, hooks at the extremities of said straps adapted to engage the front props of a vehicle-top, and a metallic ribbon inclosed within a hem at the rear edge of said roof portion and having its ends secured to said straps.

8. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to cooperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, and springs upon said side walls extending from said hooks forwardly and secured to an intermediate portion of the side walls.

9. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to cooperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, stiffening-strips secured to said side walls at an intermediate portion of their width and extending from their tops downwardly, and springs extending from said hooks to the lower extremities of said stiffening-strips.

10. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to cooperate

ate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, stiffening-strips secured to said side walls at an intermediate portion of their width and extending from their tops downwardly, springs extending from said hooks to the lower extremities of said stiffening-strips, and a pair of diagonal braces pivoted at their intersections and secured to the forward portion of each side wall between the front wall and the stiffening-strips, the upper ends of these braces being pivoted to and their lower ends having sliding connection with the front wall and stiffening-strips.

11. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to cooperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, stiffening-strips secured to said side walls at an intermediate portion of their width and extending from their tops downwardly, springs extending from said hooks to the lower extremities of said stiffening-strips, guide-loops upon said

front wall and stiffening-strips, and diagonal braces pivoted at their intersections and having their upper ends pivoted to the front wall and stiffening-strips and having their lower ends sliding in said guide-loops and provided with pins to prevent their displacement from the guide-loops.

12. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to cooperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, stiffening-strips secured to said side walls and extending partially down the same, springs extending from the lower extremities of said stiffening-strips to said hooks, guide-loops upon said stiffening-strips and front wall, diagonal braces pivoted at their intersections and having their upper ends secured to the front wall and stiffening-strips and having their lower ends engaging said guide-loops and having projecting pins to prevent their displacement from the guide-loops.

CLINTON M. STONE.

Witnesses:

FREDERIC I. BARROWS,
JOSEPHINE KNOTTS