

1,041,571.

C. L. BAIR.
VEHICLE TOP.
APPLICATION FILED SEPT. 20, 1910.

Patented Oct. 15, 1912.
3 SHEETS—SHEET 1.

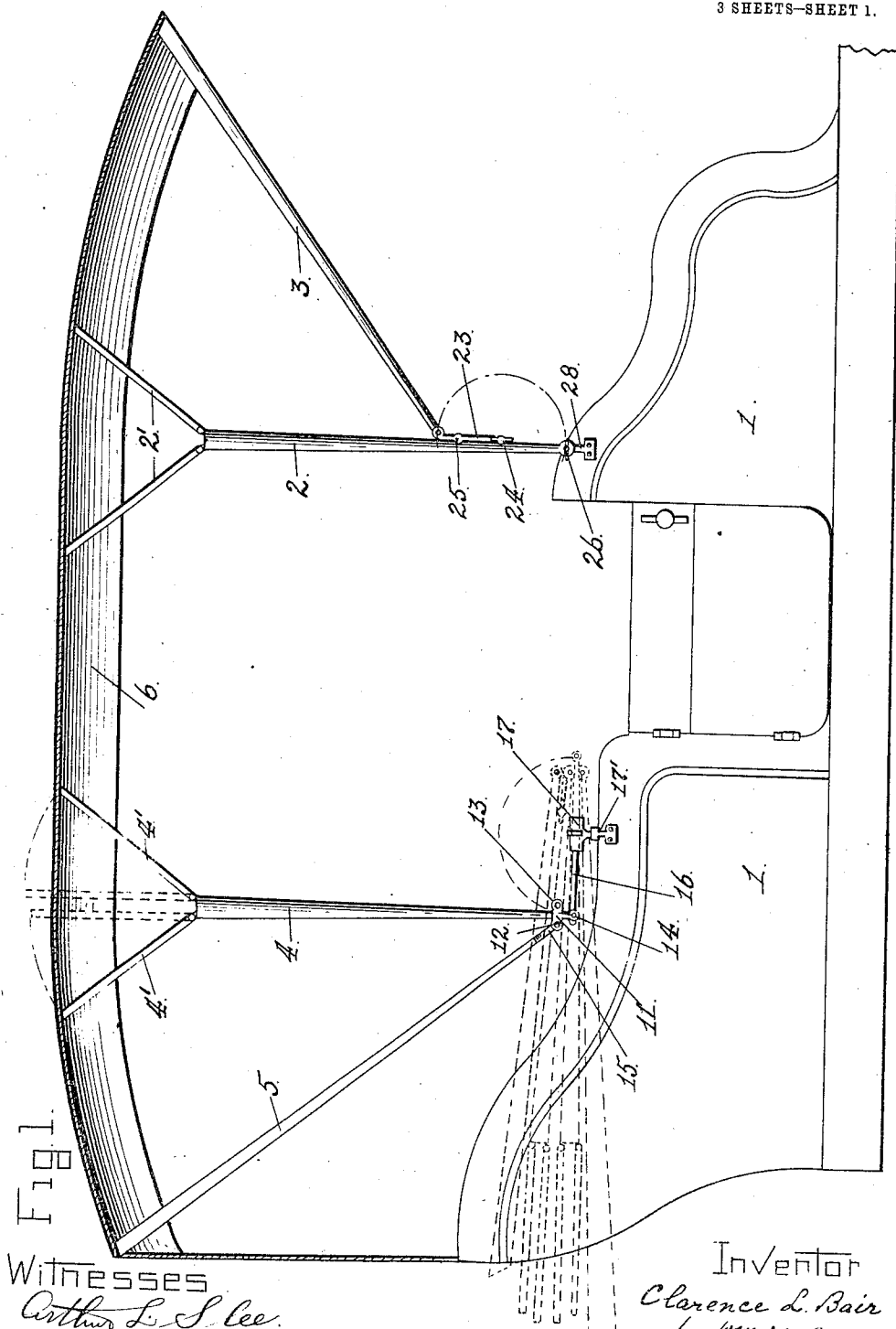


Fig. 1.

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Fig 2

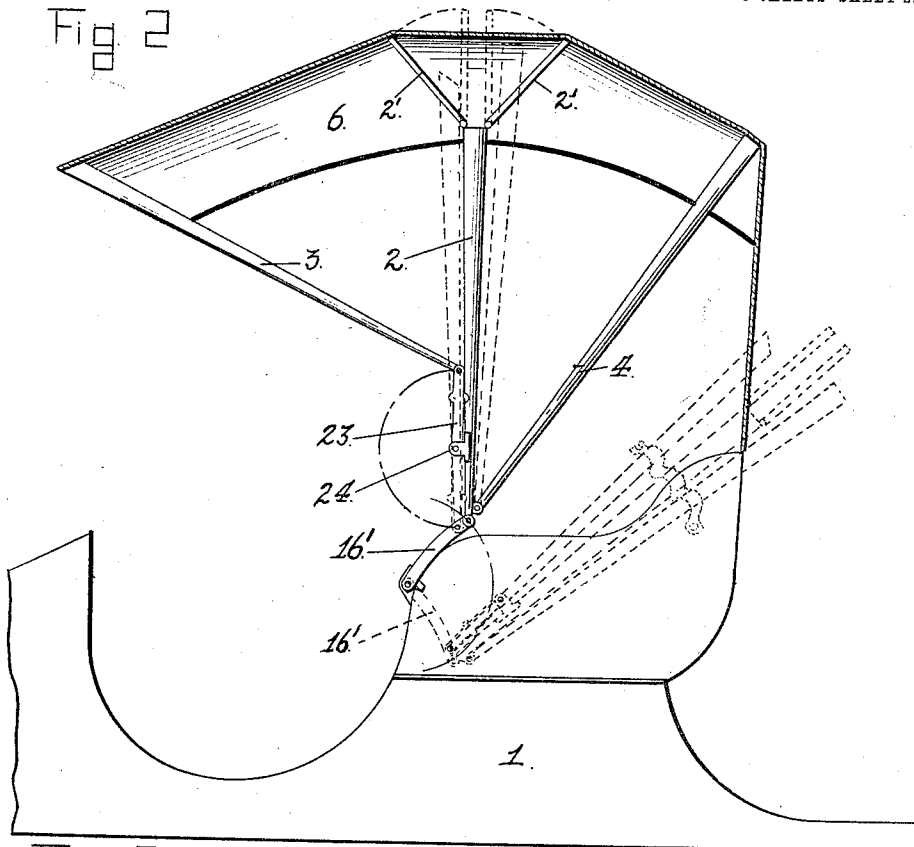


Fig 3.

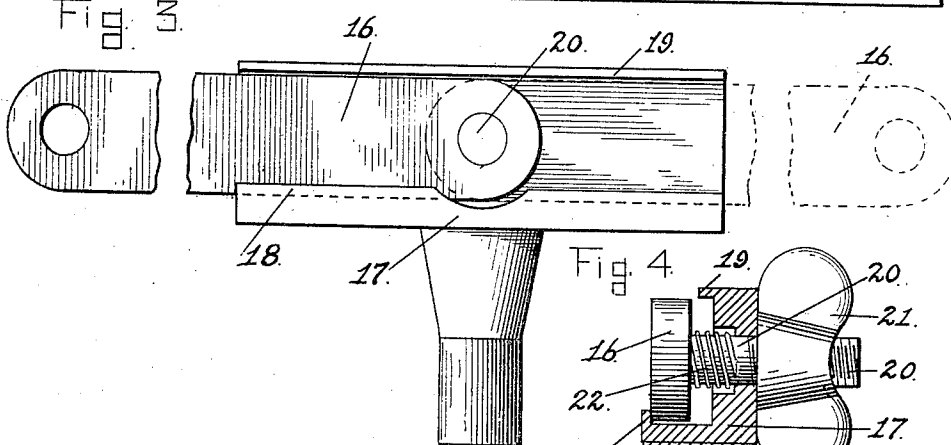
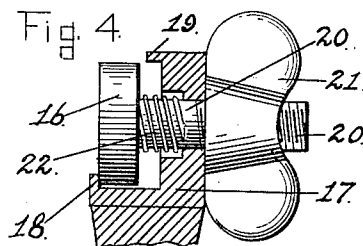


Fig 4



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3 SHEETS-SHEET 3.

Fig. 5.

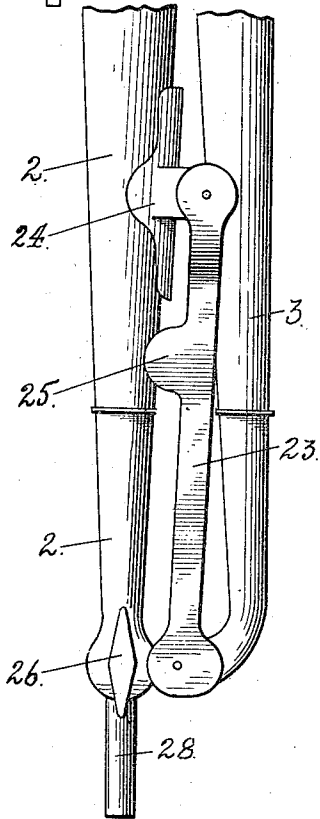


Fig. 6.

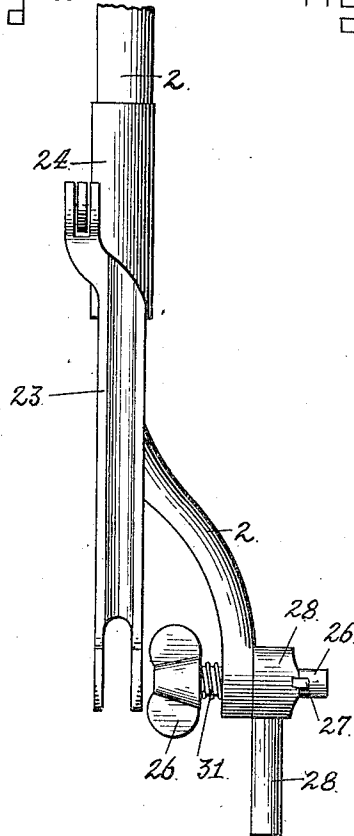


Fig. 8.

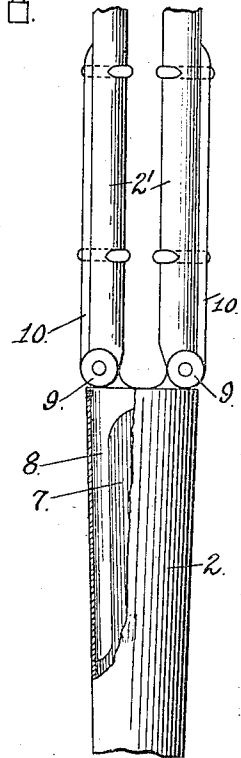


Fig. 9.

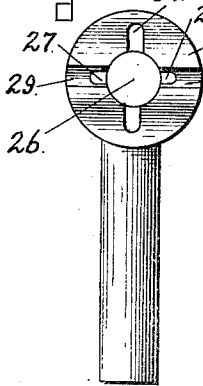


Fig. 10.

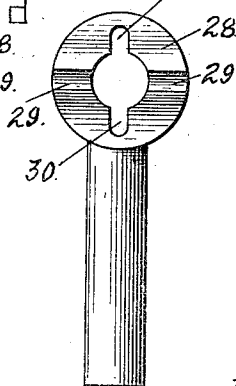


Fig. 7.

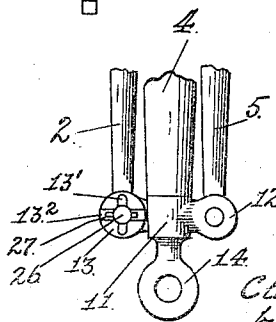
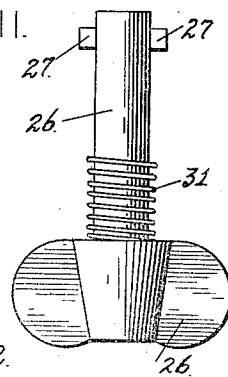


Fig. 11.



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UNITED STATES PATENT OFFICE.

CLARENCE L. BAIR, OF SAN FRANCISCO, CALIFORNIA.

VEHICLE-TOP.

1,041,571.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed September 20, 1910. Serial No. 582,833.

To all whom it may concern:

Be it known that I, CLARENCE L. BAIR, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Vehicle-Tops, of which the following is a specification.

My invention relates to the class of vehicle-tops, and it has for its objects the better distribution of the weight of the top when up and its more uniform support; the shifting of the top forward when down and backward when up; the shifting of the front bow to elevate it when the top is up in order to provide convenient access to the front seat; the more convenient attachment and release of the forward main bow in both raising and lowering the top; and other objects which will hereinafter fully appear.

To these ends my invention consists in top-supporting hinged branches for the upper ends of the main-bows; an adjustable top-shifting connection whereby the top may be moved forward or back relatively to the body; a continuous joint or link connection for shifting the front bow; a novel releasable fastening in connection with the forward main bow; and other details of construction, arrangement and combination which I shall hereinafter fully describe and claim.

Referring to the accompanying drawings, Figure 1 is a side elevation of my vehicle top, showing it in raised position, the dotted lines indicating it shifted forward when lowered. Fig. 2 is a side elevation showing the application to a small top of my top-shifter bar, the dotted lines indicating the lowered position. Fig. 3 is a side view, enlarged, of the top-shifter bar and its base support, the dotted lines indicating the forward shift. Fig. 4 is a cross section of the base support showing the fastening connection therewith of the shifter-bar. Fig. 5 is a side view, enlarged, of the front bow shifter showing it down, and also showing the releasable connection of the forward main bow with the front goose-neck or iron. Fig. 6 is a front view of the same. Fig. 7 is a detail showing the releasable connection from the inside of the forward main-bow with rear main-bow. Fig. 8 is a broken elevation, enlarged, showing the hinge connection of the branches with the main bow. Fig. 9 is a view from the inside of the front goose neck or iron showing the locking bolt for the forward main bow, in place. Fig.

10 is a similar view with the locking bolt omitted. Fig. 11 is a view of the locking bolt.

1 is the vehicle-body.
2 is the forward main bow.
3 is the front bow.
4 is the rear main bow, and 5 is the back bow.

6 is the vehicle-top.

Each main-bow is divided or split at its upper end into two branches, the branches of bow 2 being designated by 2' and those of bow 4 by 4'. The branches are separately hinged at their lower ends to the main bow, so that they may diverge when the top is up, and lie parallel in alinement with the main bow, when the top is down. Their function when the top is up and when they lie in divergent planes or spread out, is to furnish a greater supporting surface for the top throughout its length and prevent sagging, so that the weight is well divided and a uniform sweep of the top from front to back is had. They avoid the extra weight of a five-bow top and give in effect a six-bow top on four bow sockets. These split bows have a further advantage in connection with the top-shift which I shall presently describe. These branches of the main bows may be hinged in any suitable manner. A reliable and efficient construction for hinging them is as follows: The upper portion of each main bow has a wood core designated by 7, and this fits down into the socket of the bow proper. To this wooden core is fastened the legs 8 of a hinge piece, the head of which is formed with the knuckles 9. To these knuckles are pivoted the plates 10 to which the bow branches are secured. The lower end of the rear main bow 4 is fitted with the socket bend 11, which is provided with a rear ear 12, a front ear 13 and a bottom ear 14. To the rear ear 12 is pivoted the socket bend 15 of the back bow 5.

To the bottom ear 14 is pivoted one end of the top-shifter bar 16. This bar may be either a straight one or a curved one. It is supported and has its swinging movement in a channeled base 17 secured to the bracket 17' on the vehicle-body. This base has a lower guard flange 18, and an upper guard flange 19, between which the top-shifter bar normally lies, said bar being pivotally connected with the base by a pin 20 which pin has a threaded end on which is seated a

thumb-nut 21. The upper guard-flange 19 does not project as far as the lower guard-flange 18, so that a spring 22 which is fitted on the pin 20 and bears against the shifter bar 16, normally tends to force the bar side-wise against the lower guard flange, in which position it is clear of the upper guard flange and may, therefore, be swung through a vertical arc about the pivotal pin 20, forward or back. The thumb-nut 21 however, when tightened up draws the bar well in and holds it firmly seated between the two guard-flanges; but when said nut is loosened, the spring 22 again clears the bar from the upper flange, and said bar is then free to be swung about its pivot forward or back.

The object and effect of this construction are as follows:—When the forward main bow with its attached front bow are freed from the front connection and brought back and said forward main bow is pivoted to the front ear 13 of the socket bend 11 of the rear main bow 4, and the top is properly collapsed, the branches of the main bows then coming together parallel, all the bows lie substantially parallel on one another or in such bow-holder as may be provided, and the top projects in this folded condition rearwardly of the body. Now by loosening the thumb-nut 21 thereby freeing the bar 16 of its base 17, as heretofore described, said bar may be swung forwardly through a vertical arc about its pivotal center 20, and thereby the whole top will be bodily carried or shifted forwardly, a distance equal to twice the length of the bar 16, that is, a distance equal to the length of sweep of said bar. The advantages of this forward shift of the top when down are that there is less overhanging leverage, and the top takes up less space at the rear of the vehicle, permitting the latter to occupy less room in the garage. Further advantages of this shift in connection with the split or branched bows are that a neat and compact package may be made of the folded top, and also that when the top is down the curvature of all the bows is nearly alike on account of the split bows having greater length when closed, than the ordinary bows usually provided for tops, the result being that the distance from the back of the vehicle body to the inside of the bows is practically the same with all of them. This advantage is utilized to draw the top closer to the rear of the body by means of the shifter bar. When the top is lifted again, the shifter bar is thrown back to its first position and thereby restores the top to its full extent.

If the shifter bar be a curved one, as shown by 16', in Fig. 2, there may be had the additional advantage especially applicable to small tops, that the entire top when closed may be shifted downward and rest

at any desired angle without unfastening. This I have indicated in said Fig. 2.

To enable one to conveniently get into and out of the front seat of the vehicle, some tops are made with a shiftable front bow, the common practice being to have a bracket on the upper portion of the forward main bow in which when the top is up, the front bow is fastened by means of a cotter pin, thereby lifting said front bow high enough to give convenient access to the front seat. When the top is to be lowered, the cotter pin is removed and the front bow is shifted down again to the lower end of the main bow and again fastened by a cotter pin. Instead of this detachable construction which takes time and is difficult to manage, I have a continuous connection or joint which results in the necessary shifting of the front bow. 23 is a link which at one end is pivoted to the lower end of the front bow 3. At its other end it is pivoted to a bracket 24 on the forward main-bow 2. This link has side flanges 25 to steady it on the main bow, and said link is concaved more or less on both faces to adapt it to fit snugly both bows.

When the top is up, the bow shift link 23 lies against the main-bow and rises from its pivotal bracket connection therewith at 24 to its pivotal connection at its upper end with the lower end of the front bow. Thus the latter bow is shifted upwardly high enough to afford convenient access to the front seat. When the top is being lowered, the front bow moves down, the shifting link 23 then turning away from the main bow and downwardly about its pivotal connection with said main bow, until it is reversed end for end and then lies against and between both bows, thus lowering the lower end of the front bow through a distance twice the length of the link, and bringing it down to its proper position near the lower end of said main-bow. Thus the connection is a continuous one between the two bows and the shifting of the front bow is effected by the swinging of the link 23.

With the usual tops, in raising them, the forward main bow with its attached front bow is released from the ear 13 of the rear main bow, by removing a cotter pin from the short bolt of the bow which fits said ear, and then pressing the bolt out of the ear. Then the bows are carried forward and the short bolt of the forward main bow is inserted in a hole in the vehicle-body and a cotter pin passed through the bolt. This unfastening and refastening is a slow process, as the points of the cotter pins spread more or less and do not fit the holes evenly. On some pins the points are too close, or the holes are too large, which results in the pins jumping from their proper positions

on account of the vibrations of the vehicle. Also because the points stick out beyond the bolts they very often tear one's clothing. To provide a more efficient fastening, I have the following device. In the lower end of the forward main-bow is fitted a thumb bolt 26, which has on its inner end the key-lugs 27. The inner face of the head of the goose-neck or iron 28 on the front of the vehicle body is formed with grooves 29 with which the key lugs 27 engage. In the perforated head of this goose-neck are formed channels 30 through which the key-lugs 27 may pass. A spring 31 on the thumb bolt 26 is arranged to force the bolt outwardly. Now when the lower end of the forward main bow is brought opposite the head of the goose-neck 28, the thumb bolt 26 is turned so that its key lugs 27 aline with the channels 30 of said head. Thereupon the bolt is passed through the goose-neck head, and when its key lugs emerge therefrom, the bolt is given a quarter-turn, and released, whereupon the spring presses it out and causes the key-lugs to enter and lock within the grooves 29 on the inner face of the goose-neck. To release the parts, the thumb bolt is pushed in slightly, its spring yielding until the key-lugs are free of the grooves and then by turning the bolt, the lugs will aline with the channels 30 and the bolt can be withdrawn from the goose-neck. The same connection is made for the forward main bow with the ear 13 of the rear main bow, by providing said ear with the cross channels 13' in its aperture and with cross grooves 13² on its inner face. This fastening is simple and efficient and will not work loose.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is—

1. In a vehicle top; and in combination with its bows, including a forward main bow and a rear main bow separated from said main bow when the top is raised, means for detachably connecting the forward main bow to the vehicle body, and means for connecting said forward main bow to the rear bow when the top is to be lowered, a bar pivotally connected at one end to the vehicle

body, and at its other end to the lower end of the rear main bow, said bar being adapted to be positioned to extend in a horizontal position to the rear of its pivot, and when in said position to support the bows in raised position, said bar being adapted to be swung to a horizontal position in advance of its pivot to shift the lower ends of the connected bows relatively to the vehicle body when the top is lowered.

2. In a vehicle-top and in combination with its bows, a bar pivotally connected at one end to the lower end of that bow to which the others are attached when lowered, a channeled supporting base connected with the vehicle body adapted to receive the bar, said base having a lower guard flange and an upper guard flange of less width than the lower guard flange, a pivot pin carried by the other end of the bar and seated in the base, a spring on the pivot pin normally tending to hold the bar clear of the upper guard flange whereby said bar is free to swing on its pivotal connection with the base, and a thumb nut on the pin to draw and hold the bar in locked engagement with upper guard of the base.

3. In a vehicle body, and in combination with its bows, a bar pivotally connected at one end to the lower end of that bow to which the others are attached when lowered, a channeled supporting base connected with the vehicle body adapted to receive the bar, said base having a lower guard flange and an upper guard flange of less width than the lower guard flange, a pivot pin carried by the other end of the bar and seated in the base and means to shift said bar clear of the upper guard flange, whereby said bar is free to swing on its pivotal connection with the base and to draw and hold the bar in locked engagement with the upper guard of the base.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARENCE L. BAIR.

Witnesses:

MARY E. SAVILLE,
B. D. HAWKS.