H. W. STEWART.

AUTOMOBILE TOP.

APPLICATION FILED FEB. 10, 1919.

1,332,418.

Patented Mar. 2, 1920.

2 SHEETS—SHEET 1.

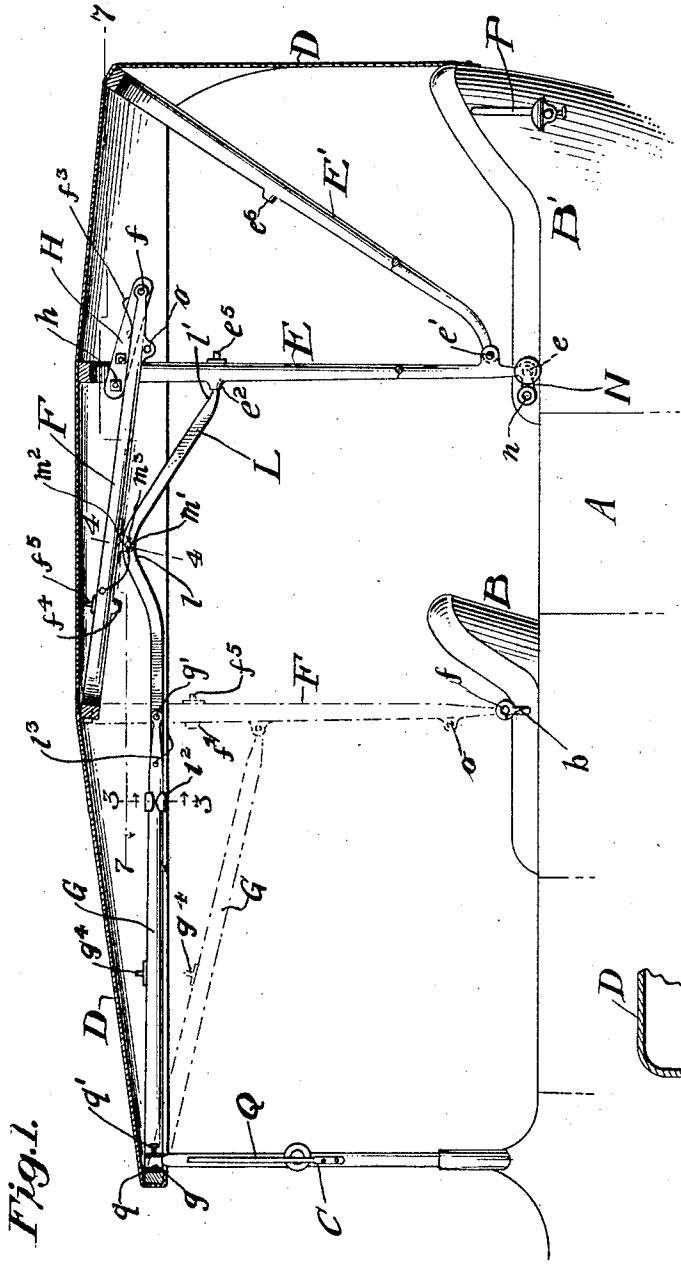


Fig. 1.

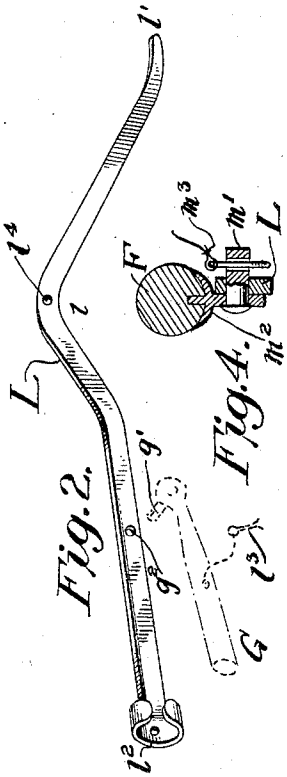


Fig. 2.

Fig. 4.

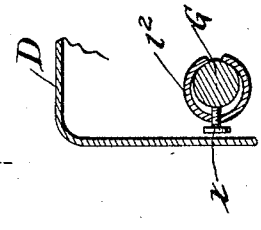


Fig. 3.

Witnesses

Inventor

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2 SHEETS—SHEET 2.

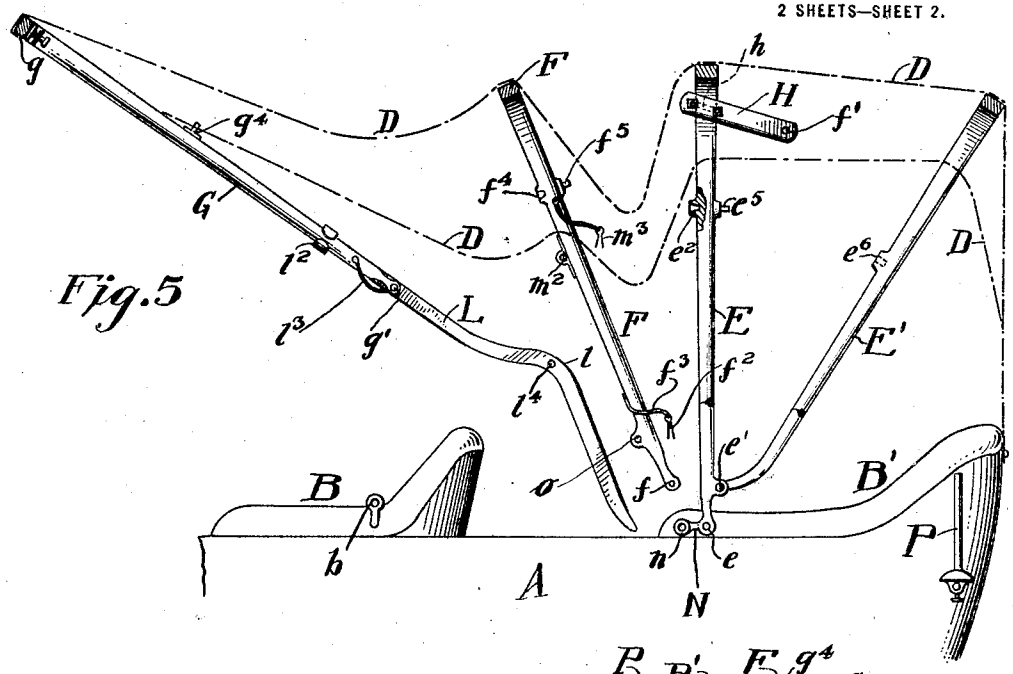


Fig. 5

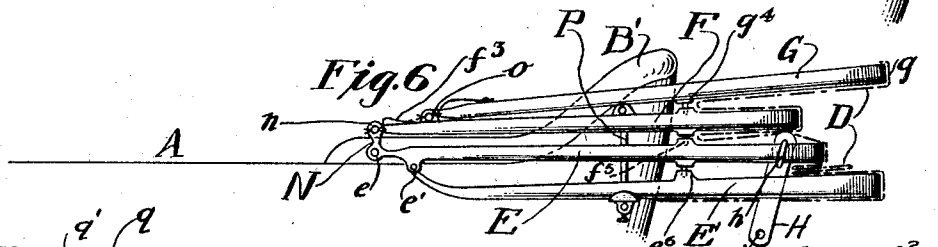


Fig. 6

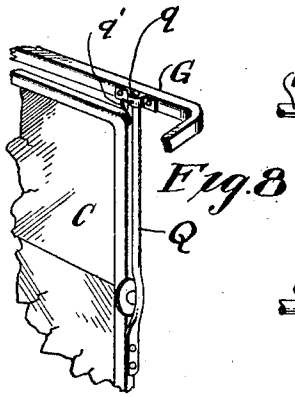


Fig. 8

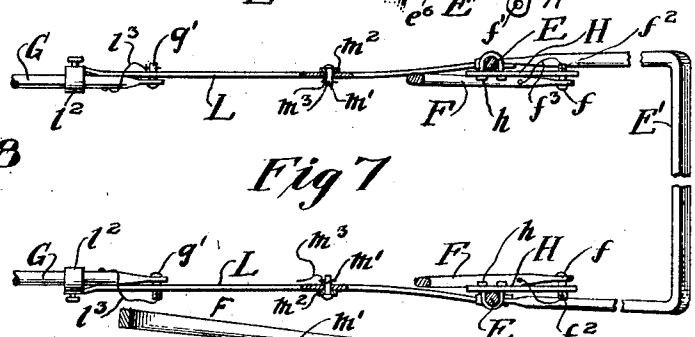


Fig. 7

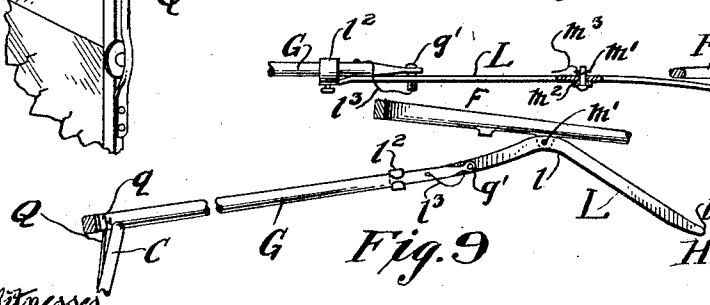


Fig. 9

Witnesses

Inventor

H. W. Stewart

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UNITED STATES PATENT OFFICE.

HENRY W. STEWART, OF EL PASO, TEXAS.

AUTOMOBILE-TOP.

1,332,418. Specification of Letters Patent. Patented Mar. 2, 1920.

Application filed February 10, 1919. Serial No. 276,047.

To all whom it may concern:

Be it known that I, HENRY W. STEWART, a citizen of the United States, residing at El Paso, in the county of El Paso and State of Texas, have invented certain new and useful Improvements in Automobile-Tops, of which the following is a specification.

This invention relates to vehicle tops, and more specially to the tops of automobiles having two or more seats wherein the cover is supported by a plurality of collapsible bows.

In automobile tops of the Ford type of the collapsible cover is supported by four bows, two of which are pivotally connected to the body on opposite sides of the rear seat, one of said bows being upright or vertical and the other inclined upwardly and rearwardly. Another bow, which is arranged vertically is pivotally connected to the opposite sides of the front seat, and a fourth bow, which is pivotally connected with the bow last mentioned, extends forward and upward therefrom, and is attached to the front end of the cover.

As is well known by those familiar with the Ford car and cars of that type, it requires the services of two persons to detach the front bows, connect them with the rear bows, and fold all the bows and the cover into a compact space in rear of the hind seat. One of the principal objects of my invention is to change an automobile top of the Ford type into what is known as a "one-man top" without discarding or mutilating any of the customary parts used in the construction of such tops, and in this connection I provide means for holding both of the forward bows in an elevated position so as to leave a clear space on each side of the front seat. Inasmuch as by my invention I can convert a Ford top into a one-man top without discarding or materially changing any of the parts usually employed in such tops, it is obvious that a top made in accordance with my invention may, if desired, be changed back to a Ford top, with great facility.

In carrying out my invention, I employ two rearward bows of the same kind as those used in the Ford touring car, and I support these on opposite sides of the rear seat in the usual way. The next bow in the series, *i. e.*, the one usually supported on opposite sides of the front seat, is swung upward to an approximately horizontal position, the front portion or arch of the bow being employed to support the cover intermediate its front end, and the part supported by the upright rear bow. This horizontally arranged bow is connected at its rear end to brackets secured to the upright rear bow and each arm of this horizontally arranged bow is supported by a horizontally arranged bent bar, one end of which is connected to the upright rear bow and the opposite end of which serves to support the rear end of one arm of the front bow or outrigger bow. The details of construction will be hereinafter more fully explained.

In the accompanying drawing—

Figure 1 is a view partly in side elevation and partly in section, illustrating by full lines an automobile top constructed in accordance with my invention, and the drawings indicate by dotted lines the usual Ford construction which may be changed to conform to my improved construction or my construction may be changed in the manner indicated by dotted lines to the Ford construction.

Fig. 2 is a perspective view of one of the supporting bars which I add to the Ford construction to support the two forward bows in a horizontal position.

Fig. 3 is a view on an enlarged scale and in section on the line 3—3 of Fig. 1.

Fig. 4 is a detail view on an enlarged scale, and in section, on the line 4—4 of Fig. 1.

Fig. 5 is a view, partly in side elevation and partly in section, illustrating the position of the bows arranged in accordance with my invention and of the supporting bars when they are disconnected from each other and ready to be mounted in folding position.

Fig. 6 is a view in side elevation, showing the position of the bows and the cover in folded position.

Fig. 7 is a view in horizontal section, on the line 7—7 of Fig. 1.

Fig. 8 is a detail perspective view, showing the manner of connecting the front end of the cover with the wind-shield.

Fig. 9 is a detail view, showing how the front bow or outrigger is connected with the wind-shield when the latter is rearwardly inclined.

The automobile body is indicated at A. B indicates the front seat, B′ the rear seat, C the wind-shield and D the cover. The upright, rear bow E is pivotally connected at

e to the opposite sides of the rear seat B′, in the usual way, and the rearwardly inclined rear bow E′ is connected to the lower portion of the bow E at e' also in the usual way and these bows serve to support the rear portion of the cover in the manner indicated. The upright, front bow F and the forwardly and upwardly inclined outrigger bow G, as shown by dotted lines in Fig. 1, are arranged as in the Ford car, and the construction of these bows is the same as in the Ford car. It will be observed that the front end of the bow G is attached to the front end of the cover at g. When the bows are arranged in the manner just described the services of two persons are required to readjust the bows and fold them and the cover to collapsible position in rear of the hind seat, and furthermore the outrigger bow G and the forward bow F obstruct to some extent the spaces on opposite sides of the front seat.

According to my invention the bow F is raised to the position shown by full lines in Fig. 1, and each arm of this bow is supported at its rear end by a bracket H attached in any suitable way at h to the upper portion of the rear, upright bow E. As is usual, in tops of this kind, the outer end of each arm of the bow F is equipped with a laterally projecting pin f which ordinarily engages a bracket b on the front seat B, but in accordance with my invention the two pins f on the two arms of the bow F engage sockets in the rear ends of the brackets H, as indicated most clearly in Fig. 7, one of said sockets being indicated at f' in Fig. 5. Each arm of the bow F is provided with a cotter pin f^2 held by a cord or other suitable flexible device f^3. The cotter pins engage the pins f on the bow F in the usual way to prevent the ends of the bow from being separated from the brackets when the top is raised. The bow F is furthermore supported on each side by a horizontally arranged bar L, shown in perspective in Fig. 2. Each of these bars is bent upwardly in its middle portion, as indicated at l. Its rear, downwardly extending portion is provided with a tapered end l' which enters a socket e^2 in the rear, upright bow E. Each of the bars L is connected at its middle portion to one of the arms of the bow F, this connection being made on each side by a pin m' extending laterally from a bracket m^2 attached to the bow F. These pins m' extend through holes l^4 in the bars L. Cotter pins m^3 hold the pins m' in place when the top is raised. The front bow G is supported on each side by the front end of one of the supporting bars L which at its extreme front portion is provided with a split sleeve or loop l^2 into which the rear portion of each of the arms of the front bow extends. Each arm of the front bow is provided with a laterally projecting pin g' which enters a hole g^2 in one of the bars L. These assist in holding the front bow in place. Cotter pins l^3 lock the pins in position when the top is raised.

The bow G is provided with pins g^4 which enter the sockets f^4 in the bow F when the bows are folded, and the bow F is provided with pins f^5 which enter the sockets e^2 in the bow E when in folded position. In like manner the bow E has pins e^5 which enter sockets e^6 in the bow E′ when the parts are in the position shown in Fig. 6. Cotter pins are employed whenever required, to hold the parts in place in the usual way.

When the top is folded, in the manner indicated in Fig. 6, the bows and cover are supported in racks or brackets P in the usual way.

Ordinarily in the Ford type of cars, straps are employed for holding down the front bow, such straps being attached to the wind-shield, but preferably I attach upright rods Q to opposite sides of the shield, as indicated in Fig. 8, and secure socket pieces q to the bow G into which the rods extend. Set screws q' serve to hold the rods in their sockets when the top is raised and stretched.

In Fig. 9 I have illustrated a slight modification in which the parts are adapted to connect with a rearwardly inclined wind-shield. This, however, does not involve a material alteration of construction. It will be observed by reference to Fig. 3 that the split sleeve or loop l^2 is somewhat larger in diameter than the arm of the bow which extends through it and I provide a set screw w in the loop for the purpose of holding the arm of the bow steady when the top is raised but before lowering the top the set screw is loosened so as to give some play to the parts when they are being disconnected.

When the parts are connected in the manner above described, they are arranged as shown in Fig. 1 and securely hold the cover in extended position. When it is desired to fold the cover its front end is detached from the wind-shield, the cotter pins f^3 are removed and the bow F is sprung inward in the usual way so as to remove the pins f from the brackets H. When this is done the bow F will shift its position in such manner that the pins f will not again reenter the socket f'. The cotter pins m^3 are then removed from the pins m' and the bars L are moved sidewise to separate the pins from them. The ends l' of the bars L may then be removed from the sockets e^2 and then the parts may be lowered to the position shown in Fig. 5. After this, the cotter pins may be removed from the pins g' and the bars L may be detached from the front bow G and may be stored in the vehicle in any convenient place. The bows F may then be pivotally connected to the brackets N at n while the inner ends of the bow G

may be pivotally connected with the bow F at *o*. Then the bows are so connected and supported that they may be turned back to the position shown in Fig. 6. The top may be readily raised and the parts assembled when desired so as to assume the position shown in Fig. 1. When reassembling the parts most of the connections may be made in an obvious manner, but when connecting the bars L with the front bow it is necessary to cause the pins g' to pass through the slots in the loops l^2 before said pins engage the holes g^2. After the connection is made the set screws x may be tightened to prevent rattling. The bars L may be attached to the front bow when the front bow is in the position shown in Fig. 5. Experience has demonstrated that one man can perform the various operations of either lowering the cover or raising it and inasmuch as my improvements are adapted to convert an automobile top of the Ford type from a two-man top to a one-man top it is obvious that they have great utility.

I claim as my invention:—

1. An automobile top, comprising a cover, two rear bows for supporting the rear portion of the cover, two horizontally arranged bows for supporting the front part of the cover, horizontally arranged bars for supporting the two front bows, detachable connections between said horizontally arranged bars and the rear portions of the forward or outrigger bow, detachable connections between the middle portions of said horizontally arranged bars and the middle portions of the other or intermediate front bow, and means for supporting the rear ends of said horizontally arranged bars on one of the rear bows.

2. An automobile top, comprising a cover, two rear bows for supporting the rear portion of the cover, one of which is rearwardly inclined and the other of which is vertically arranged, two horizontally arranged bows for supporting the front part of the cover, one of which is an outrigger bow and is connected to the front end of the cover, and the other of which is an intermediate bow supporting the middle portion of the cover, means for supporting the rear ends of the intermediate bow on the upper portion of the vertically arranged rear bow, horizontally arranged bars for supporting the outrigger bow and the intermediate bow, detachable connections between the rear ends of the outrigger bow and said bar, detachable connections between the middle portions of the horizontally arranged bars and the middle portions of the intermediate bow, and means for supporting the rear ends of said bars on the vertically arranged rear bow.

3. An automobile top, comprising a cover, an upright rear bow for supporting the rear portion of the cover, two horizontally arranged bows for supporting the front part of the cover, one of which is an outrigger bow and is connected with the front end of the cover, and the other of which is an intermediate bow and supports the middle portion of the cover, detachable connections between the rear ends of the intermediate bow and the vertically arranged rear bow, horizontally arranged bars for supporting the outrigger bow and the intermediate bow, detachable connections between the horizontally arranged bars and the rear ends of the outrigger bow, detachable connections between the middle portions of said bars and the intermediate bow, means for supporting the rear ends of said horizontally arranged bars on the rear bow, means adjacent the front seat of the automobile for connecting the ends of the intermediate bow to hold it in a vertical position, means for at times connecting the ends of the intermediate bow to the automobile adjacent the lower ends of the rear bow, and means for connecting the rear ends of the outrigger bow to the intermediate bow.

4. An automobile top, comprising a cover and four supporting bows therefor, one of which is an upright bow for supporting the rear part of the cover and which is pivotally connected with the automobile body on opposite sides of the rear seat and the other of which is a rearwardly inclined bow pivotally connected at its lower end with said upright bow, an intermediate bow adapted to be pivotally connected to the automobile body on opposite sides of the rear seat, means for supporting the ends of said intermediate bow from the upper part of the upright rear bow, a front or outrigger bow adapted to be pivotally connected at its rear ends with the intermediate bow, and bent bars for supporting the front or outrigger bow and the intermediate bow which are detachably connected therewith and which are supported by and detachably connected with the upright rear bow.

In testimony whereof, I have hereunto subscribed my name.

HENRY W. STEWART.