Feb. 2, 1943. L. M. BAKER 2,309,926

CONTROL SWITCH FOR CONVERTIBLE TOPS

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Fig. 1.

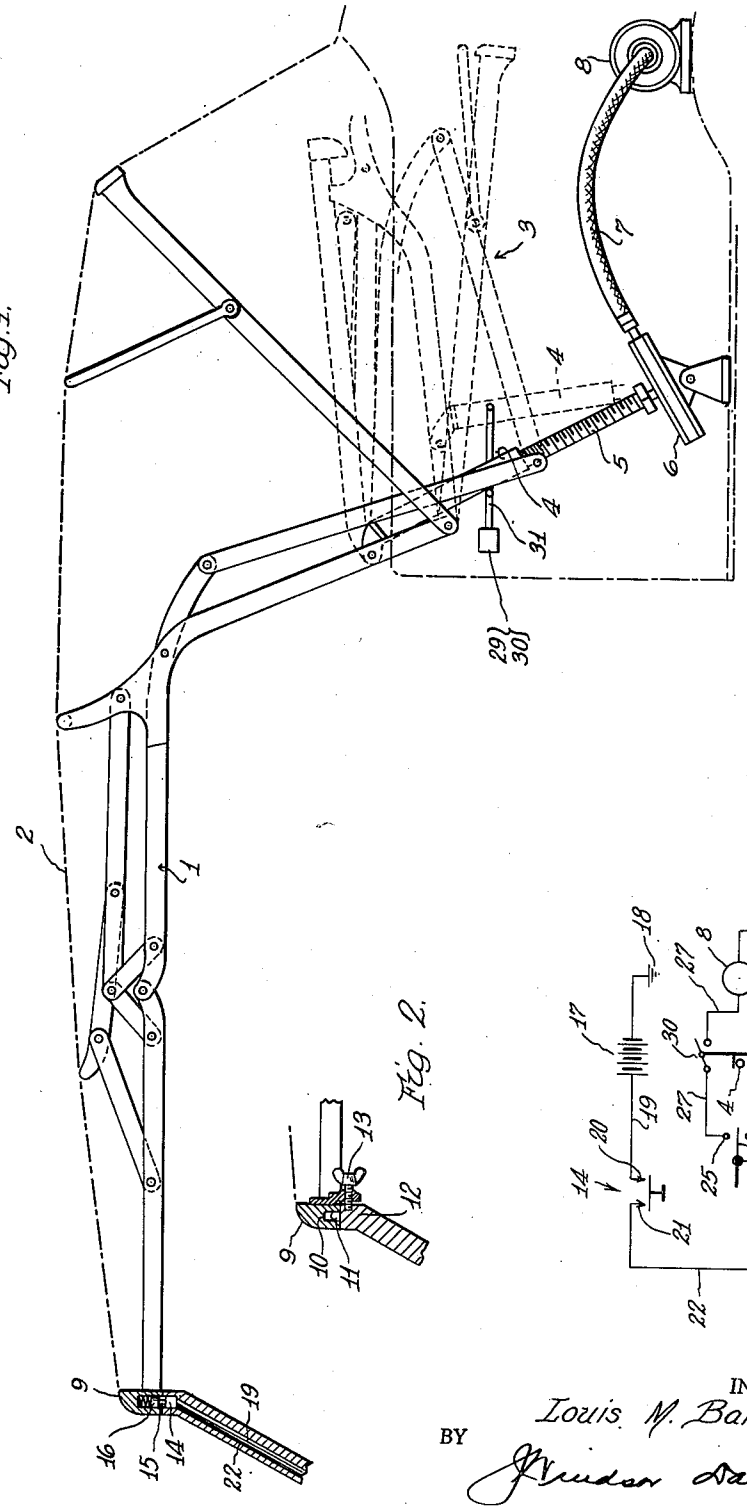


Fig. 2.

Fig. 3.

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CONTROL SWITCH FOR CONVERTIBLE TOPS

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2 Claims. (Cl. 296—117)

This invention relates to converting automobile tops of the type having power operated means for lowering and raising the same and has for its primary object to provide a safety control device for preventing accidental or unauthorized operation of the power means while the top is clamped in its closed position.

Convertible automobile tops of the type here concerned have electrically operated means for lowering and raising the same and usually are provided with automatic cut-off switch means, operated by a moving part of the mechanism, for stopping the motor as the top reaches its lowered position and when the top reaches its closed position. When the top is closed, however, the motor may be operated by a manual switch in a direction to lower the top, and when the top is open the motor may be operated by the same switch to close the top. Clamping means is provided to secure or hold the top in its closed position and it is possible with the means now used to operate the motor while the top is clamped in its closed position. The object of this invention, more specifically stated, is to provide means for preventing operation of the motor while the top is clamped in its closed position.

In order to insure proper positioning of the top when in its closed position coacting dowel means are provided on the top and on the windshield frame. Before the top can be lowered it is necessary to disengage this dowel means. In some cases the collapsible linkage which supports the top fabric is under tension when clamped and as the clamping means is released the top springs a short distance away from the windshield and thus disengages the dowel means. In other cases it is necessary to release the clamping means and to manually push the top away from the windshield frame. The present invention prevents operation of the motor while the dowel means are interengaged.

Other objects and advantages will become more fully apparent as reference is made to the accompanying drawing, wherein my invention is illustrated, and in which

Fig. 1 is a side elevation of a top raising and lowering means,

Fig. 2 is a fragmental section illustrating a detail, and

Fig. 3 is a circuit diagram.

More specifically, 1 designates a system of links for supporting a top fabric 2. The links are foldable from the position shown in full lines, which is the closed position, to the collapsed position shown in dotted lines at 3. The means for collapsing and raising the linkage comprises an internally threaded sleeve 4 and a screw 5 which telescopes therein. The screw 5 is rotated through gearing in a pivotally mounted housing 6 by a flexible shaft 7 and an electric motor 8.

At the forward end of the top is a header 9 having a multiplicity of dowel holes such as the one shown at 10 in Fig. 2 for receiving a corresponding number of positioning dowels, one of which is shown at 11 in Fig. 2. The dowels are mounted on the upper edge of the windshield frame 12 and the top is held in coacting relation therewith by clamping means 13.

Mounted in the windshield frame 12 is a push button switch 14 having an actuating button 15 adapted to be engaged by a spring pressed plunger 16 mounted in the header 9. When the top is in its closed position and the header is in contact with or close proximity to the windshield frame the plunger 16 will hold the switch 14 open. When the top is spaced from the windshield sufficiently to disengage the dowels the switch 14 becomes closed.

As shown in Fig. 3, the electric circuit includes a battery 17 grounded at 18 and connected at 19 to one terminal 20 of the switch 14. The other terminal 21 of the switch 14 is connected by a wire 22 to a manually operated contact 23 adapted to be manually moved into engagement with either of a pair of contacts 24 and 25. The contact 24 is connected by a wire 26 to one side of the motor 8 and the contact 25 is connected by a wire 27 to the other side of the motor 8. The motor is grounded at 28.

In the wire 26 is a cut-off switch 29 and in the wire 27 is a cut-off switch 30. The two switches 29 and 30 are actuated by means 31 engaged by the member 4. As the member 4 is moved to the position it assumes when the top is closed the switch 30 is opened and the switch 29 is simultaneously closed. When the top is moved to its collapsed position the member 4 actuates the means 31 to open the switch 29 and close the switch 30.

The diagram discloses the circuit in a condition corresponding to the closed position of the top. The switch 14 is open and if the contact 23 is moved into engagement with the contact 24 the motor cannot be energized. If, however, the top is released from the windshield frame the switch 14 will close and when the switch 23 is operated the motor will operate to lower the top.

Although a specific embodiment of the invention has been illustrated and described it will be understood that various changes may be made

within the scope of the appended claims without departing from the spirit of the invention, and such changes are contemplated.

What is claimed is:

1. In combination with a convertible top, power operated means for raising and lowering the top, manual control means for causing selective operation of said power means to raise and lower the top, and means operated by the top during movement to its final opening position for preventing operation of said power means in response to said manual control means in a direction to lower said top until said top has been moved through an initial distance from its fully opened position by forces derived from a source other than said power operated means.

2. In combination with a convertible top, power operated means for raising and lowering the top, manual control means for causing selective operation of said power means to raise and lower the top, automatic cut-off means for stopping the power means as said top reaches either its closed or its open position, and means operated by the top when attaining its fully open position for preventing operation of said power means in response to said manual control means in a direction to lower said top until said top has been moved through an initial distance from its fully open position by forces derived from a source other than said power operated means.

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