

Nov. 8, 1938.

L. A. BACHOR

2,135,784

DECK LID SUPPORT

Filed Dec. 14, 1936

2 Sheets-Sheet 1

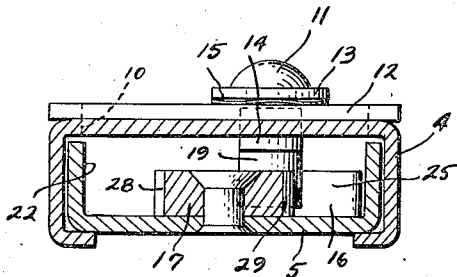
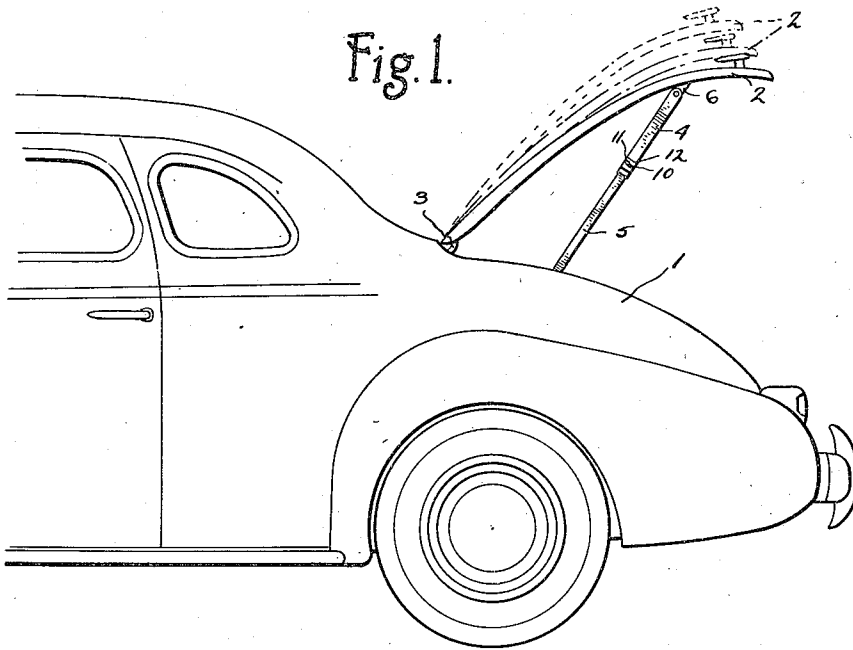


Fig. 4.

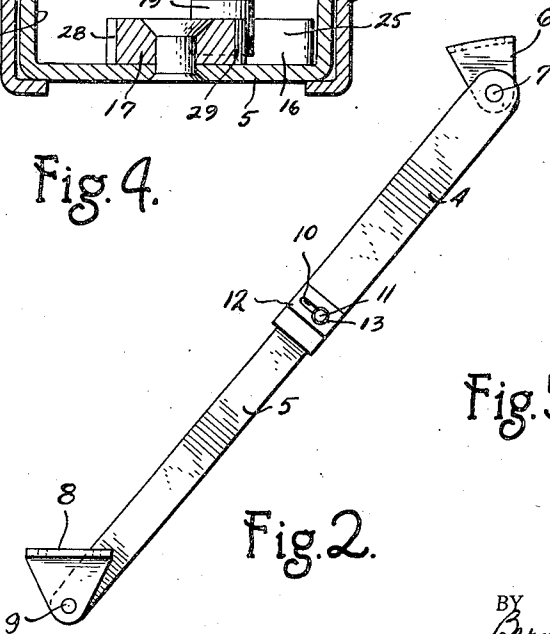


Fig. 2.

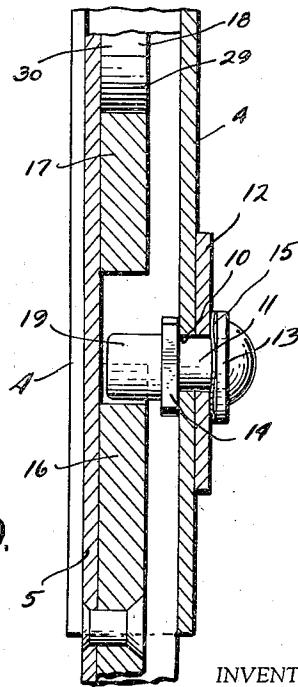


Fig. 5.

INVENTOR.
Ludwig A. Bachor
BY Barnes, Russell, Laughlin & Rowe
ATTORNEYS

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2 Sheets-Sheet 2

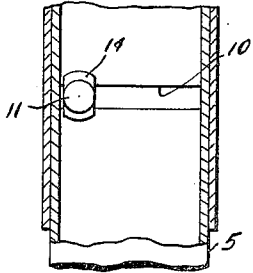
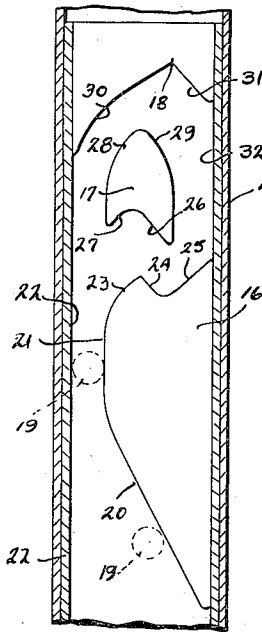


Fig. 6.

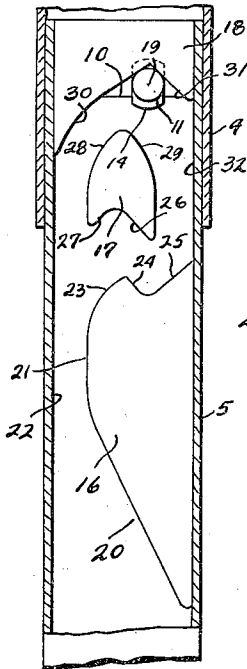
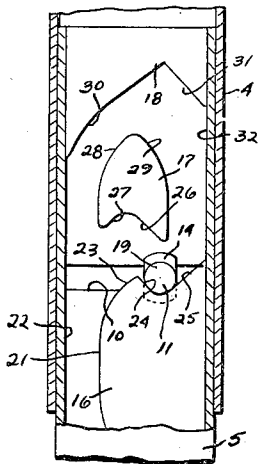


Fig. 7.

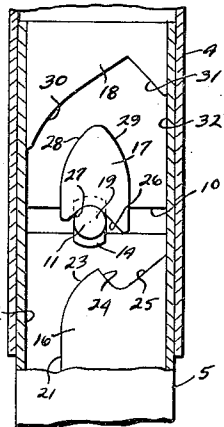


Fig. 8.

Fig. 9.

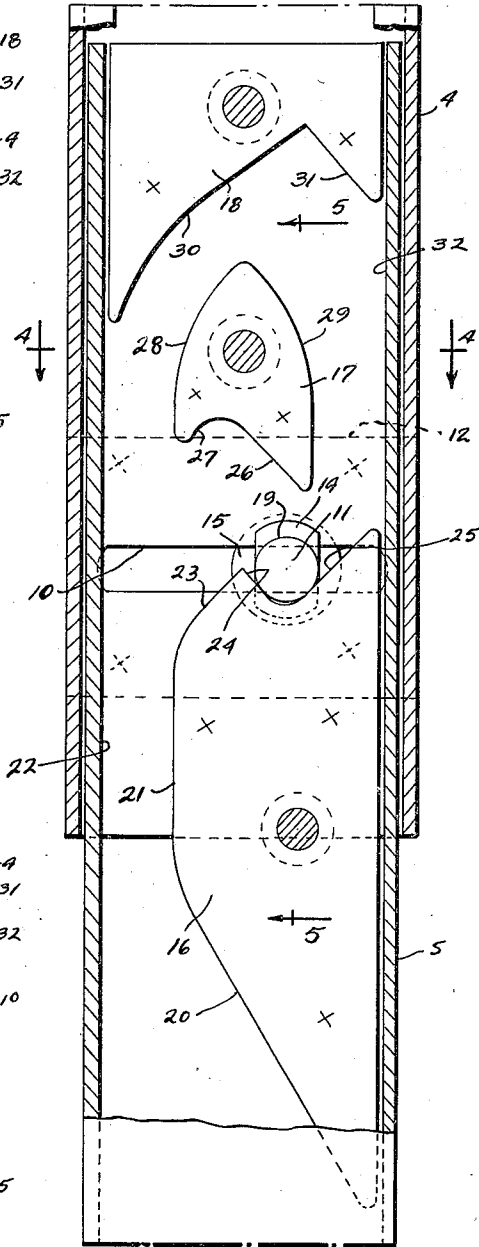


Fig. 3.

INVENTOR.

Ludwig A. Bachor

BY
Barnes, Kisselle, Laughlin & Paisch
ATTORNEYS

UNITED STATES PATENT OFFICE

2,135,784

DECK LID SUPPORT

Ludwig A. Bachor, Detroit, Mich., assignor to
Ternstedt Manufacturing Company, Detroit,
Mich., a corporation of Michigan

Application December 14, 1936, Serial No. 115,679

5 Claims. (Cl. 217-60)

This invention relates to a deck lid support and more particularly to an automatic latching and unlatching arrangement for a deck lid support of the type comprising two telescoping struts, one pivoted to the deck and the other to the lid.

It is an object of this invention to produce a strong and simple deck lid support provided with an automatic latching arrangement that is both simple and positive in action.

In the drawings:

Fig. 1 is a fragmentary side elevation of an automotive vehicle showing the deck lid support assembled to the deck and deck lid.

Fig. 2 is a side elevation of the support itself.

Fig. 3 is a sectional view showing the position of the latching mechanism when the deck lid is in raised supported position.

Figs. 4 and 5 are sections along the lines 4-4 and 5-5 of Fig. 3.

Figs. 6, 7, 8 and 9, respectively, show the operation of the latching mechanism.

Referring more particularly to the drawings there is shown an automotive vehicle having a deck 1 and a lid 2 hinged to the deck as at 3.

The support for holding the lid in raised position comprises struts 4 and 5 of channel section, Fig. 4. The strut 4 is hinged to the bracket 6 by the pin 7 and the strut 5 is hinged to the bracket 8 by the pin 9. The bracket 6 is fixed to the lid 2 and bracket 8 is fixed to the deck 1. The strut 5 is arranged for sliding telescopic engagement with the strut 4.

It is desirable in the fabrication of lid supports of this type to provide a fool-proof latching arrangement of the type such that upon complete raising of the lid, followed by a slight lowering, the latch will interengage the support in raised position whereupon a further raising of the lid and lowering of the same disengages the latch and permits lowering of the lid. To accomplish this type of latching and unlatching, the strut 4 is provided with a slot 10 extending laterally of, and preferably normal to, the longitudinal axis of the strut 4. The slot 10 serves as a guideway for, and is provided with, a pin 11.

The strut 4 is provided with a reinforcing plate 12 which is welded thereto and surrounds the slot 10. The pin 11 carries spaced washers 13 and 14, one positioned on the inside of the strut 4 and the other positioned on the outside of the plate 12 for holding the pin in, and guiding the same along, the slot 10. A crinkled spring washer 15 is positioned between the washer 13 and the plate 12 to

yieldably and frictionally hold the pin 11 in any position along the slot 10.

The strut 5 has riveted to its inside face stops in the form of blocks 16, 17 and 18 which are positioned to provide a trackway and act as stops for the inner end 19 of the pin 11 in the latching and unlatching of the struts during the raising and lowering of the lid.

For this purpose the block 16 is provided with a cam edge 20 which extends angularly of the longitudinal axis of the strut 5 where it merges into a straightaway portion 21 which cooperates with the side wall 22 of the strut 5 to form a trackway for the pin end 19. The block 16 is also provided with a cam edge 23 which is inclined to the longitudinal axis of the strut 5 but oppositely to that of the cam edge 20. The end of the block 16 opposite the inclined end 20 is provided with two converging faces 24 and 25 which cooperate to form a notch in which the pin end 19 seats to support the lid in raised position. The block 17, as shown, is provided with the converging edges 26 and 27 and the curved edges 28 and 29. The curved edge 28 cooperates with the curved edge 30 of the block 18 to form a trackway for the pin end 19 and the curved edge 29 cooperates with the inclined edge 31 and side wall 32 of the strut 5 also to form a trackway for the pin. The edge 30 of the block 18 is curved and extends transversely at an angle to the longitudinal axis of the strut 5.

The operation of the support is as follows: In lowered position the strut 5 is telescoped and housed within the strut 4 and the pin 11 is positioned adjacent the pivoted end of the strut 5. As the lid is raised the strut 4 slides along the strut 5 causing the pin 11 to travel upwardly within the strut 5 along the side wall 22 of the same. However, if the pin is in any other position along the slot 10 it will strike the cam edge 23 and be cammed thereby, as indicated by the dotted line showing in Fig. 6, back into the straightaway trackway between the edge 21 of the block 16 and side wall 22. As the pin travels upwardly it finally strikes cam face 33 which causes it to slide transversely of the slot 10 and clear of cam edge 28 to the position shown in Fig. 7 where it has reached the limit of its upward travel and has thereby arrested further raising of the lid. The uppermost raised position of the lid is shown in the dotted lines, Fig. 1. Upon lowering the lid the end 19 of the pin strikes the cam edge 29 of the block 17 and travels downwardly until it engages the cam edge 25 of the block 16 and is cammed into the notch formed

by the edges 24 and 25 of the block 16. At this point the pin 11 latches the strut 4 against further downwardly sliding telescoping movement along the strut 5 and latches the lid in raised position. This position of the lid is shown in the full lines, Fig. 1.

To lower the lid, the lid is first raised slightly to the dot and dash position, Fig. 1. This causes the pin 11 to travel upwardly, engage the cam edge 26 of the block 17 which shifts the pin to the left, Figs. 3 and 9, where the pin is offset from, and clear of, the cam edge 24. Upon lowering the lid the pin end 19 now strikes the cam edge 23 of block 16 whereby it is cammed further to the left into the straightaway formed by the edge 21 of block 16 and side wall 22 of strut 5, clear of the stop notch in block 16 to permit complete lowering of the lid.

As herein used to describe the slot 10, the word "lateral" is used in its broader sense to denote any slot which extends across the strut at any angle to the longitudinal axis of the strut and regardless whether the slot is of rectilinear or other configuration.

I claim:

1. A support for a lid comprising two telescoped struts arranged to slide one along the other during the raising and lowering of the lid, one of said struts having a trackway and the other strut having a guideway extending laterally of the strut, a pin carried by said latter strut shiftable back and forth in said guideway and extending into and arranged to travel along the trackway of the first-mentioned strut, an island carried by the first-mentioned strut about which said trackway extends and around which the pin travels in the raising and lowering of the lid, a cam along the trackway extending diagonally of the strut adjacent one end of the island, a stop at the end of the cam, said cam being arranged to engage the said pin upon raising of the lid and laterally shift the pin from one side of the island to the other into engagement with said stop to arrest further raising of said lid, a second stop positioned opposite the other end of the island arranged to receive the pin upon slight lowering of the lid to hold the lid in raised supported position, said island having a second cam overhanging the said second stop and extending diagonally of the strut, a third stop at the end of said second cam, said second cam adapted to engage said pin upon raising of the lid to laterally shift the same clear of the second stop and direct the pin into said third stop to arrest raising of said lid whereby upon lowering the lid the pin clears the second stop and the struts are free to slide one relative of the other to permit lowering of the lid.

2. A support for a lid comprising two telescoped struts in the form of opposed channels arranged to slide one along the other during the raising and lowering of the lid, one of said struts having a trackway and the other strut having a guideway extending laterally of the strut, a pin carried by said latter strut shiftable back and forth in said guideway and extending into and arranged to travel along the trackway of the first-mentioned strut, an island carried by the first-mentioned channel strut between the side walls of said channel about which said trackway extends and around which the pin travels in the raising and lowering of the lid, a cam along the trackway extending diagonally of the strut from one side wall of the channel toward the other side wall of the island, a stop at the end of the cam, said cam

being arranged to engage the said pin upon raising of the lid and laterally shift the pin from one side of the island to the other into engagement with said stop to arrest further raising of said lid, a second stop positioned opposite the other end of the island arranged to receive the pin upon slight lowering of the lid to hold the lid in raised supported position, said island having a second cam overhanging the said second stop and extending diagonally of the strut, a third stop at the end of said second cam, said second cam adapted to engage said pin upon raising of the lid to laterally shift the same clear of the second stop and direct the pin into said third stop to arrest raising of said lid whereby upon lowering the lid the pin clears the second stop and the struts are free to slide one relative of the other to permit lowering of the lid.

3. A support for a lid comprising two telescoped struts arranged to slide one along the other during the raising and lowering of the lid, one of said struts having a trackway and the other strut having a lateral slot extending laterally of the strut, a pin carried by said latter strut shiftable back and forth in said lateral slot and extending into and arranged to travel along the trackway of the first-mentioned strut, an island carried by the first-mentioned strut about which said trackway extends and around which the pin travels in the raising and lowering of the lid, a cam along the trackway extending diagonally of the strut adjacent one end of the island, a stop at the end of the cam in the form of a downwardly opening notch, said cam being arranged to engage the said pin upon raising of the lid and laterally shift the pin from one side of the island to the other into engagement with said stop to arrest further raising of said lid, a second stop in the form of an upwardly opening notch positioned opposite the other end of the island arranged to receive the pin upon slight lowering of the lid to hold the lid in raised supported position, said island having a second cam overhanging the said second stop and extending diagonally of the strut, a third stop in the form of a downwardly opening notch at the end of said second cam, said second cam adapted to engage said pin upon raising of the lid to laterally shift the same clear of the second stop and direct the pin into said third stop to arrest raising of said lid whereby upon lowering the lid the pin clears the second stop and the struts are free to slide one relative of the other to permit lowering of the lid.

4. A support for a lid comprising two telescoped struts arranged to slide one along the other during the raising and lowering of the lid, one of said struts having a trackway and the other strut having a lateral slot extending laterally of the strut, a pin carried by said latter strut shiftable back and forth in said lateral slot and extending into and arranged to travel along the trackway of the first-mentioned strut, an island carried by the first-mentioned strut about which said trackway extends and around which the pin travels in the raising and lowering of the lid, a cam along the trackway extending diagonally of the strut adjacent one end of the island, a stop at the end of the cam in the form of a downwardly opening notch, said cam being arranged to engage the said pin upon raising of the lid and laterally shift the pin from one side of the island to the other into engagement with said stop to arrest further raising of said lid, a second stop in the form of an upwardly opening notch positioned opposite the other end of the

island arranged to receive the pin upon slight lowering of the lid to hold the lid in raised supported position, a third cam extending diagonally downwardly for directing said pin into said second stop, said island having a second cam overhanging the said second stop and extending diagonally of the strut, a third stop in the form of a downwardly opening notch at the end of said second cam, said second cam adapted to engage said pin upon raising of the lid to laterally shift the same clear of the second stop and direct the pin into said third stop to arrest raising of said lid whereby upon lowering the lid the pin clears the second stop and the struts are free to slide one relative of the other to permit lowering of the lid.

5. A support for a lid comprising two telescoped struts in the form of opposed channels arranged to slide one along the other during the raising and lowering of the lid, one of said struts having a trackway and the other strut having a guideway in the form of a slot extending laterally of the strut, a pin carried by said latter strut shiftable back and forth in said lateral slot and extending into and arranged to travel along the trackway of the first-mentioned strut, an island carried by the first-mentioned channel strut between the side walls of said channel about which said trackway extends and around which the pin

travels in the raising and lowering of the lid, a cam along the trackway extending diagonally of the strut from one side wall of the channel toward the other side wall of the channel to a point adjacent one end of the island, a stop at the end of the cam, said cam being arranged to engage the said pin upon raising of the lid and laterally shift the pin from one side of the island to the other into engagement with said stop to arrest further raising of said lid, a second stop positioned opposite the other end of the island arranged to receive the pin upon slight lowering of the lid to hold the lid in raised supported position, a third cam extending diagonally from the other side wall of the channel to the second stop for directing the said pin into the said second stop, said island having a second cam overhanging the said second stop and extending diagonally of the strut, a third stop in the island at the end of said second cam, said second cam adapted to engage said pin upon raising of the lid to laterally shift the same clear of the second stop and direct the pin into said third stop to arrest raising of said lid whereby upon lowering the lid the pin clears the second stop and the struts are free to slide one relative of the other to permit lowering of the lid.

LUDWIG A. BACHOR.