P. F. KING.

AUTOMOBILE COVER.

APPLICATION FILED DEC. 28, 1918.

1,390,137.

Patented Sept. 6, 1921.

4 SHEETS—SHEET 1.

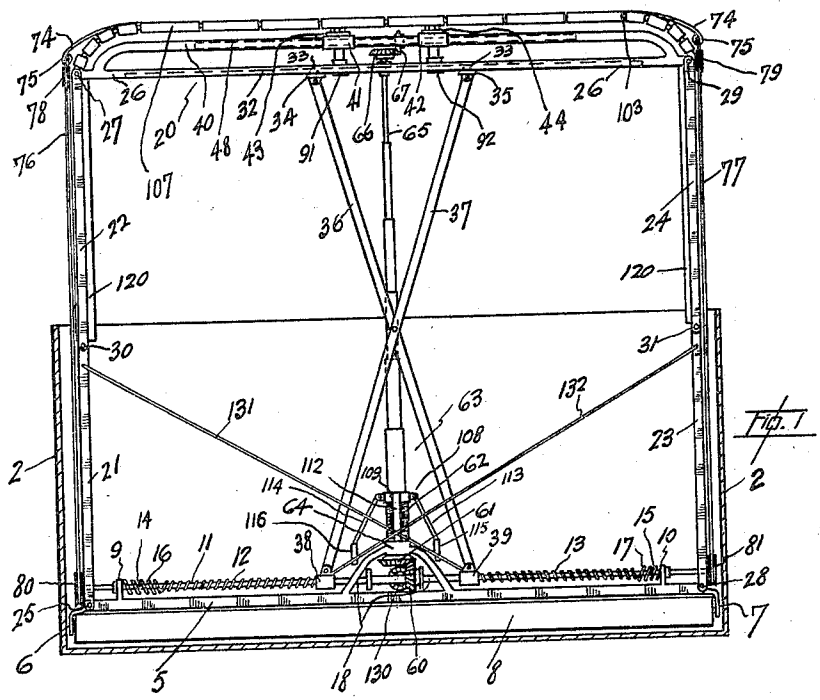


FIG. 1

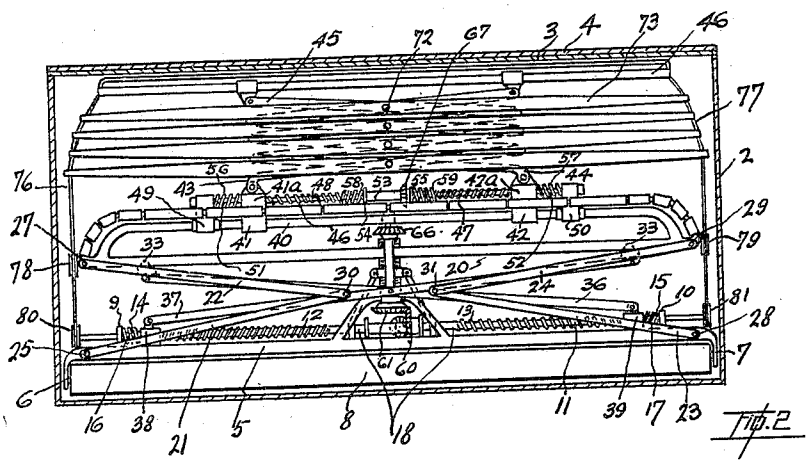


FIG. 2

INVENTOR

Percival Faulkner King.

BY Fisher Stanley & Frey.

ATTYS.

P. F. KING.

AUTOMOBILE COVER.

APPLICATION FILED DEC. 28, 1918.

1,390,137.

Patented Sept. 6, 1921.

4 SHEETS—SHEET 2.

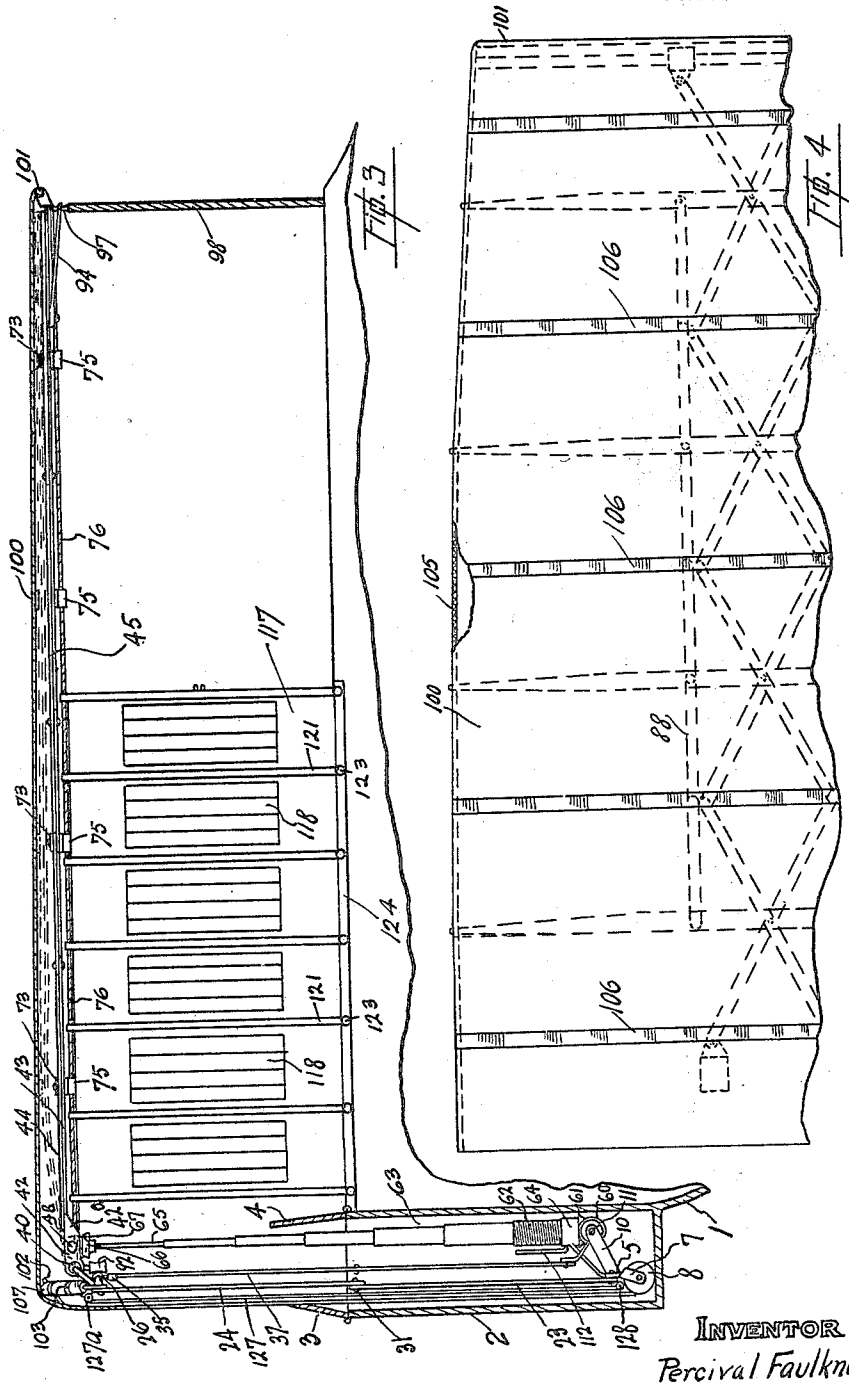


Fig. 3

Fig. 4

INVENTOR

Percival Faulkner King.

BY Schustershaup & Co.

ATTYS

P. F. KING.

AUTOMOBILE COVER.

APPLICATION FILED DEC. 28, 1918.

1,390,137.

Patented Sept. 6, 1921.

4 SHEETS—SHEET 3.

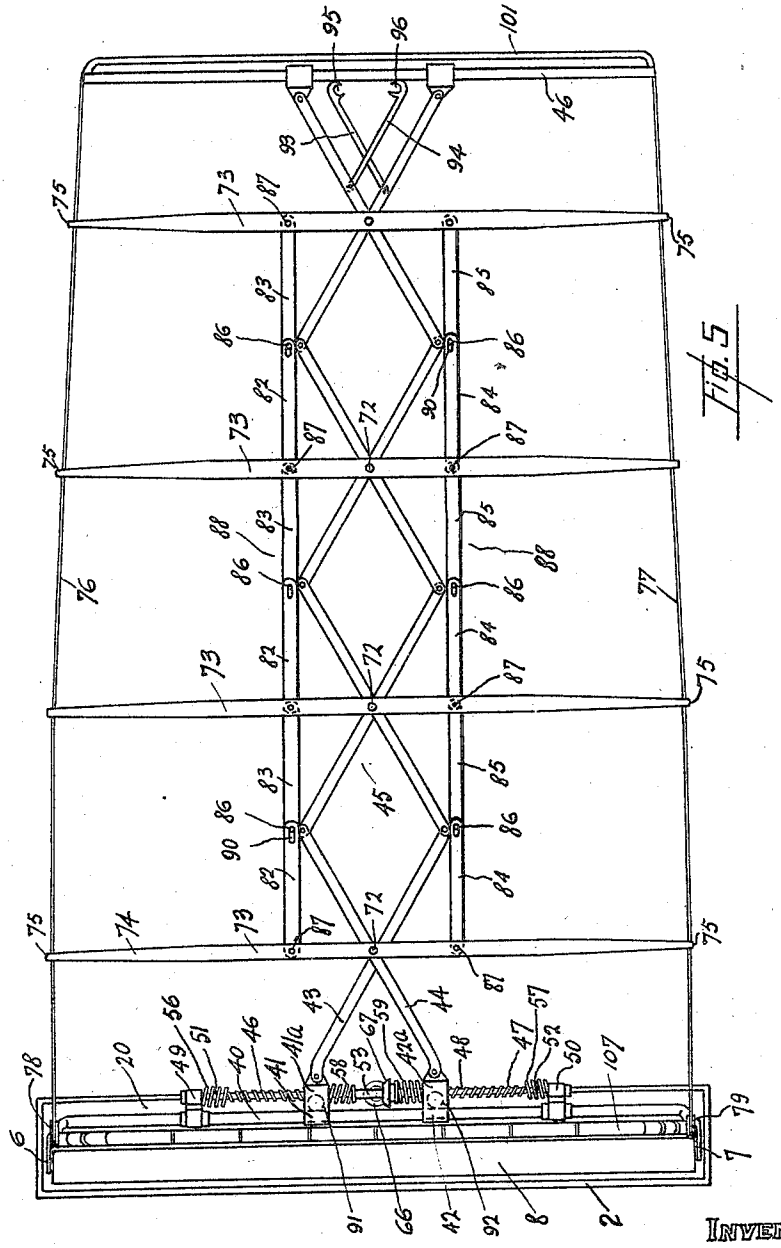


Fig. 5

INVENTOR

Percival Faulkner King.

BY Schwestahaupt & Co.

ATTYS.

P. F. KING.

AUTOMOBILE COVER.

APPLICATION FILED DEC. 28, 1918.

1,390,137.

Patented Sept. 6, 1921.

4 SHEETS—SHEET 4.

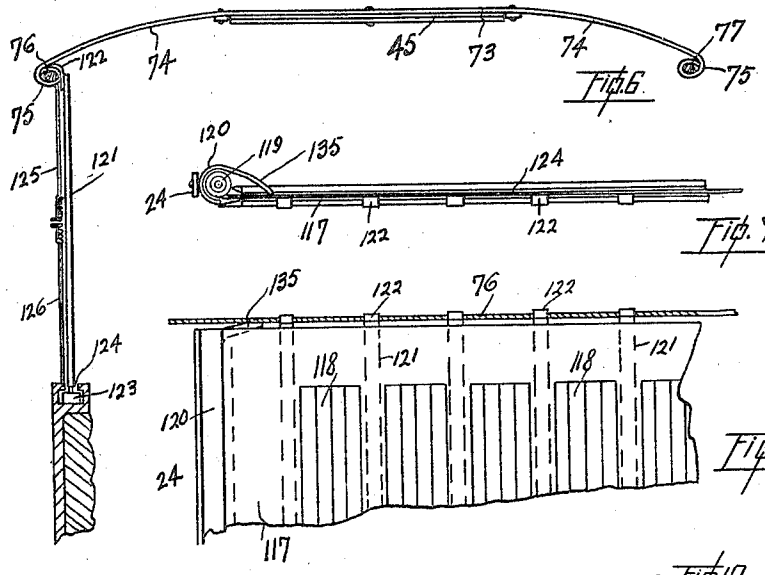


Fig. 6

Fig. 7

Fig. 8

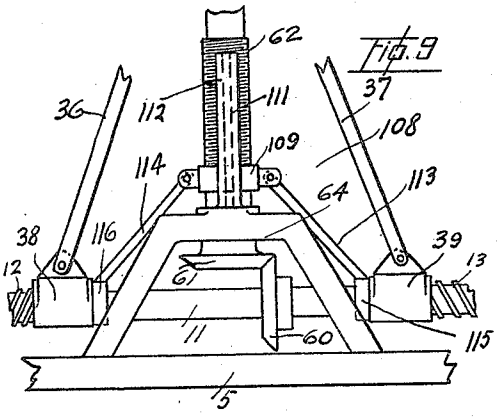


Fig. 9

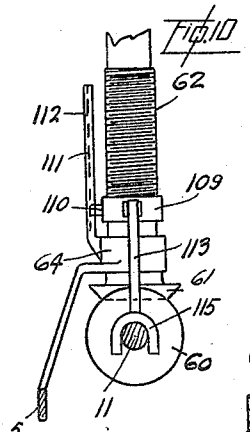


Fig. 10

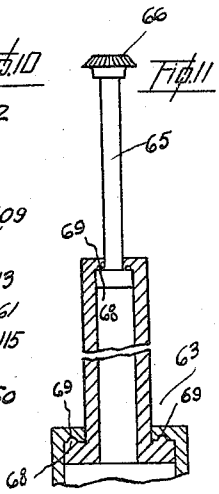


Fig. 11

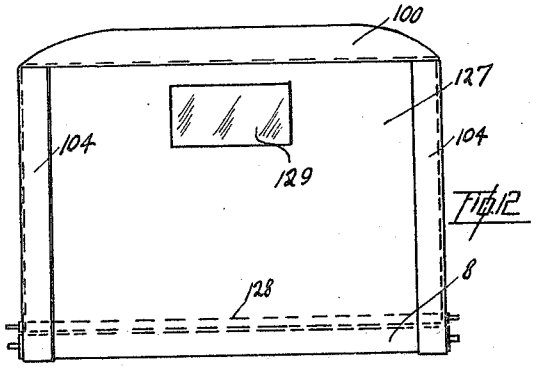


Fig. 12

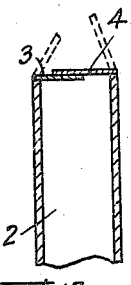


Fig. 13

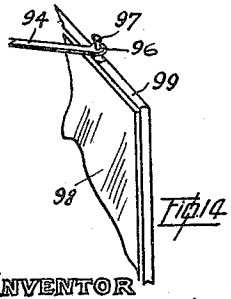


Fig. 14

INVENTOR

Percival Faulkner King.

BY Fisher Stevenson & Co.

ATTYS.

UNITED STATES PATENT OFFICE.

PERCIVAL FAULKNER KING, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

AUTOMOBILE-COVER.

1,390,137. Specification of Letters Patent. Patented Sept. 6, 1921.

Application filed December 28, 1918. Serial No. 268,729.

To all whom it may concern:

Be it known that I, PERCIVAL FAULKNER KING, a subject of the King of Great Britain, and a resident of the city of Vancouver, in the Province of British Columbia, Canada, have invented certain new and useful Improvements in Automobile-Covers, of which the following is a specification.

My invention relates to improvements in automobile covers, and the object of my invention is to provide a cover adapted to be carried on the machine in a normally collapsed position capable of being automatically extended to the covering position or with equal facility retracted and collapsed to its normal position at the will of the driver, the said cover including not only the canopy for the top of the car but the back curtain as well and having also provision for inclosing the sides.

I attain this object by the construction illustrated in the accompanying drawings in which—

Figure 1 is a back view of the cover raising mechanism, extended.

Fig. 2 is a back view of the raising and extending mechanism, collapsed.

Fig. 3 is a side view of the cover raised and extended.

Fig. 4 is a fragmentary plan view of the cover.

Fig. 5 is a plan view of the canopy supporting ribs and lazy tongs.

Fig. 6 is a detail view of a canopy supporting rib and side curtain support.

Fig. 7 is a partial plan view of the side curtain arrangement.

Fig. 8 is a side view of Fig. 7.

Fig. 9 is a front view of the pressure clutch for the raising lever blocks.

Fig. 10 is a side view of Fig. 9.

Fig. 11 is a view in part section of the two uppermost sections of the telescopic member.

Fig. 12 is a rear view of the back curtain.

Fig. 13 is a fragmentary sectional view of the cover-box.

Fig. 14 is a fragmentary view illustrating the connection of the canopy top and windshield.

Similar figures of reference indicate similar parts throughout the several views.

1 in Fig. 3 indicates the back of an automobile body on which is mounted a box 2 adapted to contain the normally collapsed cover and its raising and extending mechanism, the mouth of the box being provided with overlapping lids 3 and 4 capable of opening upwardly as the mechanism is projected out of the box. Secured within the box adjacent the bottom thereof is a transverse bar 5 the ends of which are formed as bearings 6 and 7 in which is rotatably mounted a spring roller 8 while carried by bearings 9 and 10 also formed on the bar 5 at suitable points is a rotatable shaft 11 provided with right and left hand threads 12 and 13 respectively, the outer extremities of these threads terminating a short distance from the respective bearings 9 and 10 so that plain portions 14 and 15 are provided on which are mounted between the ends of the threads and the bearings springs 16 and 17 respectively, the midlength portion 18 of the shaft being also plain, as shown in Figs. 1 and 2.

20 indicates generally a frame disposed above the bar 5 and connected thereto by collapsing levers formed of the bars 21—22 and 23—24, bar 21 being pivotally connected to bar 5 as at 25 and bar 22 to bar 26 of the frame 20 as at 27, while bars 23 and 24 are pivotally connected respectively to bars 5 and 26 at 28 and 29, each pair of bars 21—22 and 23—24 being pivotally connected together as shown at 30 and 31 in Fig. 2. The bars 26 of frame 20 is provided on its underside with a slot 32, indicated dotted in Fig. 1, so that tongues 33 formed on blocks 34 and 35 pivotally connected to the upper ends of crossed levers 36 and 37 may normally support the bar and yet be capable of lateral movement along the same as the device is operated.

The crossed levers 36 and 37 just referred to are pivoted together at midlength and their lower ends are pivotally connected to blocks 38 and 39 threaded correspondingly to and mounted on the threaded portions 12 and 13 respectively of the shaft 11, from which it will be readily seen that movement of the blocks laterally inward on the threads from the position shown in Fig. 2 will extend the levers 36 and 37 to raise the frame 20 to the position shown in Fig. 1 and that movement of the blocks in the reverse direction, or laterally outward, will collapse the levers and return them and the frame to the normal position shown in Fig. 2, the bars 21—22 and 23—24 also extending and col-

lapsing respectively and concurrently with the extension and collapse of the levers 36 and 37, cords 131—132 being provided for the purpose of breaking the joints of the bars prior to collapse, these cords being connected at one end to blocks 38 and 39 and at the opposite ends to bars 21 and 23 respectively.

40 indicates a bar also forming part of frame 20 arranged above bar 26 and on this bar are slidably and swingably mounted bearings 41 and 42 to which are attached respectively the inner end levers 43 and 44 of a lazy tongs 45, the outer end levers of the lazy tongs being slidably mounted on a cross-bar 46, as shown in Figs. 2 and 5, while the bearings 41 and 42 are provided with internally threaded portions 41^a and 42^a through which are passed respectively right and left hand threaded portions 46 and 47 formed on a shaft 48 rotatably mounted in bearings 49 and 50 swingably mounted on the bar 40, the shaft 48 being formed plain at each end for a short distance between the respective bearings and the threads, as at 51—52 and also for a portion of its midlength as at 53, collars 54 and 55 suitably spaced apart being formed on the plain portion 53, and springs 56—57 being mounted on the plain portions 51—52 and springs 58—59 on the portion 53 between the collars and the inner ends of the threaded portions, as shown in Fig. 2.

60 indicates a bevel gear secured to shaft 11 meshing with a gear 61 secured to the lower end section 62 of a telescopic shaft indicated generally by the numeral 63, the section 62 being rotatably supported in a suitable bearing 64 formed integrally with or otherwise secured to the bar 5. The uppermost section 65 of the shaft 63 is rotatably connected in any approved manner to the frame 20 and is provided with a bevel gear 66 designed to mesh with a bevel gear 67 mounted on the shaft 48, as indicated in Fig. 1, and as will be hereinafter more fully described. The intermediate sections of the shaft 63 are of course slidable one within the other and as it is intended that the shaft 63 shall not rotate to actuate gear 66 until it is fully extended, and shall cease rotating when it starts to collapse, the lower end of each respective section is provided with rounded projections 68 adapted to fit corresponding cup shaped depressions 69 formed in the upper end of each respective lower section when the respective lower and upper ends are in contact, as shown in Fig. 11, from which it will be seen that, as the lower section 62 normally rotates, on the engagement of the projections 68 with the cups 69, the entire extended shaft will start rotating and that, on disengagement of the projections, it will cease to rotate, such engagement and disengagement being effected concurrently with the complete extension of the levers 36 and 37 and the commencement of the collapse of the same respectively.

The lazy tongs 45 are formed after the usual fashion and to the pivots 72 of each set of crossed levers of the tongs are connected transversely of the levers thin canopy-supporting cross bars 73, these bars being thicker at midlength than at their ends so as to give a flat effect on top when curved toward their opposite ends as at 74 by the arching of the cover and being doubled over at their extremities to form eyes 75 through which are passed flexible cords 76 and 77 the outer ends of which are connected to the front bar 46 already mentioned and as shown in Fig. 5 while their opposite ends are passed over sheaves or rollers 78 and 79 respectively rotatably mounted on the frame 20 at each end thereof and connected to sheaves 80 and 81 secured to the ends of shaft 11, which are extended as shown in Figs. 1 and 2 from which it will be seen that rotation of the sheaves 80 and 81 in one direction will wind the cords 76 and 77 thereon while rotation in the opposite direction will unwind them.

It should be particularly noted here that the length of the cords 76 and 77 is such that when extending the cover, they become taut before the lazy tongs so that the pressure of the extending lazy tongs on the taut cords prior to complete extension of the cover arches the lazy tongs upwardly and produces the well-known "reach back" formation.

82—83 and 84 and 85 indicate pairs of bars pivotally connected to each other at 86 and to the cross bars 73 as at 87 there being two pairs of such bars arranged between each pair of cross bars and designed to form straight longitudinally extending rigid bars, indicated generally by the numeral 88, on each side of the lazy tong levers when the same are extended so as to provide a support for all the cross bars and also to maintain them parallel when extending or retracting so that the eyes 75 of the cross bars will then travel freely along the flexible cords 76 and 77. The openings 90 in which the pivots 86 are seated are made slotted in order to allow of the breaking outwardly of the bars 88 at the commencement of the retraction of the canopy and thus permit collapse of the lazy tongs.

91—92 indicate rollers with which the bearings 41 and 42 are provided adapted to engage the bar 26 of the frame 20 and maintain the lazy tongs in horizontal position when extending, while 93—94 indicate pivoted arms connected to the outermost levers of the lazy tongs, as shown in Fig. 5, provided with jaws 95—96 adapted to engage posts 97 secured to the windshield 98, as indicated in Fig. 14, and thus hold the front

end of the canopy securely in place when extending and it may be here mentioned that while the posts 97 may be secured directly to the windshield, as the same is ordinarily found in automobiles, on the other hand they may be mounted on a frame 99 independent of the windshield, as indicated in Fig. 14, to enable the same to be swung down when the canopy is extended and without altering the position of the posts. These posts 97 are formed of less diameter at their midheight than at their ends which taper toward the midheight as shown so that no matter at what point they are engaged by the jaws 95—96 these will always come to the middle of the posts, being held there by the pressure of the extended tongs and being capable of releasing themselves due to the rounded shape of the jaws when the pull of the retracting tongs comes on them.

The canopy 100 is formed of any suitable material and of such length as to cover the entire top of the automobile when extended. At its outer end it is secured to a bar 101 located in front of bar 46 while at its rear end it is doubled over and stiffened to form a hinged portion 102 adapted to engage a bar 103 forming part of frame 20 so that, in effect, the canopy is stretched between the bar 101 and the bar 103 by the lazy tongs. The hinged portion 102 while being stiff enough to maintain the rear end of the canopy taut is yet capable of folding against the same so as to permit of the rolling up of the cover on the roller 8, which is effected by the spring action of the roller when the device is being returned to its normal collapsed position, the roller operating in the same manner as a window shade roller, as will be well understood without further description, tapes 104 connecting the rear end of the canopy to the roller when the cover is raised, as shown in Figs. 1 and 12. Along each longitudinal edge the canopy is provided with flexible tapes 105 and embodied in the material of the cover at suitable points in its length are thin flexible metallic strips 106, the position of which is such that when the cover is extended they are disposed centrally of the cross supporting bars 73, the purpose of the tapes 105 and the strips 106 being to maintain the close fitting of the cover so that it may not wrinkle or buckle when fully extended.

The bar 103 is provided with a series of rollers 107 so that the movement of the canopy over the bar is facilitated, and the bar is raised high enough to support the rear end of the canopy clear of the slidable bearings 41 and 42 when these are in operation.

As it is intended that the threaded blocks 38 and 39 will overrun their respective threads at the termination of their respective inward movements it is necessary to provide means for the automatic reëngagement of these blocks on their threads at the proper times and this is effected by means of a clutch indicated generally by the numeral 108 in Figs. 1 and 2 and shown in detail in Figs. 9 and 10.

This clutch consists of a collar 109 threaded on to the lowest section 62 of the shaft 63, which is threaded correspondingly to receive it and the collar is provided with a projection 110 engaging a slot 111 in a guide member 112 secured rigidly to bearing 64 so that the collar 109 is prevented from rotating but is capable of being raised or lowered on the section 62 by the rotation of the same. Connected to the collar on its transverse axis are levers 113—114 extending outwardly and downwardly and provided on their lower ends respectively with members 115—116 substantially of horse shoe formation adapted to fit over shaft 11 and to engage the inner ends of blocks 38 and 39 as shown in Fig. 9, from which it will be seen that, the device being in the position shown in Figs. 2 and 9, the raising of the collar 109 will also raise the members 115—116 clear of the blocks 38 and 39, as shown in Fig. 1, while on the other hand, the lowering of the collar will lower the members 115—116 to carry them against the blocks 38 and 39 to force them on to the rotating threads 12 and 13, due to the pressure exerted on the levers 113—114 by the downwardly traveling collar 109, which tends to spread the levers.

The side curtains 117 are formed of any suitable material and inserted into the material are celluloid strips 118 designed to form windows and capable of rolling up with the curtains. Each side curtain is secured to a spring roller, indicated by the numeral 119 in Fig. 7, so that it may be extended manually and retracted by the spring of the roller in the same manner as a window shade, and each spring roller is rotatably mounted in a semi-circular trough, indicated by the numeral 120 in Fig. 7, which troughs are secured to the bars 22—24, as shown in Figs. 1, 7 and 8, so as to fold with these bars when the device is collapsing, each trough having an upwardly inclined arm 135 at one side at its upper end adapted to direct the curtain hooks hereinafter mentioned into engagement with the cords 76 and 77 as the curtains are drawn out from the rollers. Secured into the curtains at suitable distances apart are vertical steel ribs 121, indicated in Figs. 6 and 8, the upper ends of which are formed hook-shaped, as at 122 in Figs. 6 and 8, while to their lower ends are attached rollers 123, designed to travel in grooves 124 formed in the upper edge of each side of the car body, as shown in Figs. 6 and 7. The side curtains are locked against inadvertent retraction, when extended, by any well-known means, such as,

for instance, vertical rods 125—126 mounted on each end rib 121 and bearing at their ends respectively on the edge of the car body and the flexible cords 76 and 77 under spring pressure but capable of being withdrawn therefrom by thumb and finger pressure exercised on suitable projections formed on them.

The back curtain 127 is secured at its upper edge to a bar 127ª forming a part of frame 20, while its lower edge is secured to a spring roller 128 mounted on bar 5, from which it will be seen that the raising of frame 20 will extend the back curtain, unwinding it off the roller 128, on to which it will be rewound again as the frame 20 lowers when the device is collapsing. A glass window 129 is inserted in the back curtain, as shown in Fig. 14.

130 indicates a gear adapted to mesh with gear 60 to operate the same, which gear is driven from any suitable power source, such as from the engine flywheel or drive shaft, or as may be arranged, and the connection is made by means of a reverse clutch (not shown) so that the gear 130 may be rotated in either direction or held stationery at the will of the operator.

The manner in which the device operates may be described briefly as follows:—Assuming that the cover and its mechanism are in the normal collapsed position shown in Fig. 2 and that it is desired to raise it. The operator by means of the clutch just mentioned starts gear 130 rotating, thus rotating gear 60 and shaft 11, causing blocks 38 and 39 to travel inwardly on the threads 12 and 13, on to which they are pressed by the springs 16 and 17. The inwardly traveling blocks extend the crossed levers 36 and 37, thus raising the frame 20, and the collapsed lazy tongs 45 out of the box 2, the lids of which are swung upwardly by the rising tongs and as soon as the lazy tongs, which are in a vertical collapsed position while in the box, are clear of the raised lids, they fall over inwardly of their own accord to a horizontal position, assisted however, by the contact of the rollers 91—92 with the lid 4 as they pass it, being maintained there by the bearing of the rollers 91—92 on the bar 26 of the frame 20. The blocks 38 and 39 continue to travel inwardly until they override the threads 12 and 13 at their inner ends, rotating then freely on the plain portion 18 of the shaft 11, when the levers 36 and 37 will be fully extended and the frame 20 will be at its highest point, its outer ends being then supported, as shown in Fig. 1, by the bars 21—22 and 23—24 which, as already mentioned, extend concurrently with the extension of the crossed levers 36 and 37.

During this upward movement the back curtain is raised into position, being unwound off its roller 128 by the bar 127ª of frame 20, and the telescopic shaft 63 is also raised to its full height so that the gear 66 will, when the shaft 63 is fully extended, start rotating in the manner hereinbefore described and thus rotate gear 67 and shaft 48, causing the bearings 41ª and 42ª to travel inwardly on the threads 46 and 47 and thus extend the lazy tongs 45, with their cross bars 73 and bars 82—83 and 84—85, the cords 76 and 77 and canopy 100 also extending forwardly at the same time, until, when the bearings 41ª and 42ª override the threads at the outer ends, the lazy tongs and canopy will be fully extended, the cords 76 and 77 having become taut shortly before, with the hinged cover portion 102 engaging tightly bar 103 and the jaws 95—96 engaging the windshield posts 96. If desired, the side curtains may then be drawn out by hand and locked in the manner already described, the hooks 122 riding over the eyes 75 of the ribs 73 and on the cords 76 and 77 and the rollers 123 traveling in the grooves 124.

To return the cover to its normal collapsed position in the box, the side curtains having been first of all returned to their normal position, the gear 130 is rotated in the opposite direction, thus rotating gear 60, shaft 11, the telescopic shaft 63, gears 66 and 67 and shaft 48 also in the opposite direction. The rotation of the shaft 48 causes the bearings 41ª and 42ª to travel outwardly on the threads 46 and 47, being pressed against the same to engage thereon by means of the springs 58 and 59, thus retracting the lazy tongs and collapsing the lazy tong levers, the cross ribs, and the longitudinal bars on each other into the position shown in Fig. 2, the flexible cords 76 and 77 being meanwhile wound on the sheaves 80 and 81 by the rotation of shaft 11 and the canopy 100 rewound on roller 8 by the spring action thereof. During this movement the blocks 38 and 39 rotate freely on the plain portion 18 of shaft 11 but at the same time the collar 109 of the clutch 108 is traveling down on the screw of the section 62 of shaft 63 from the position to which it was lifted on extension of the cover, carrying the horse shoe pieces 115—116 with it, until, when the lazy tong mechanism is fully retracted these pieces bear on the ends of the blocks 38 and 39 to force them on to the revolving threads 12 and 13, causing them to travel outwardly thereon and collapse the crossed levers 36 and 37, and also the bars 21—22 and 23—24 by the tightening of the cords 131—132, the rotation of shaft 48 ceasing as soon as the projections 68 are free of the cups 69, so that when the blocks 38 and 39 have traversed and overridden the threads to come onto contact endwise with the springs 16 and 17, these

levers and bars are in the full collapsed position and, together with the collapsed lazy tongs and its associated mechanism, which are thrown up into the vertical position shown in Fig. 2 by contact with the edge of lid 4 during descent, are deposited in the box 2, the lids 3 and 4 which then close one on the other.

What I claim as my invention is:—

1. An automobile cover comprising a cover member wound on a roller mounted at the rear of the vehicle, a normally collapsed frame also carried at the rear of the vehicle consisting of an upper movable member and a lower stationary member connected together by pivotally connected links connected to said members, said frame being capable of extension into substantially square or rectangular formation, a normally collapsed lazy-tong mechanism swingably connected at one end to said upper movable member capable of horizontal extension when said frame is extended and to the free end of which said cover is attached, a plurality of transverse cover-supporting bars carried by said lazy tongs adapted to be moved into or out of position by the respective extension or retraction of said lazy tongs, said bars being eyed at their opposite ends, flexible cords passed through the eyes of said bars and connected at one end to the front end of said lazy tongs, their opposite ends being connected to suitably operated sheaves whereby said cords may be wound thereon or unwound therefrom concurrently with the retraction or extension of the lazy tongs and frame, the length of said cords being such that their limit of extension is reached prior to the limit of extension of the lazy tongs, and mechanism for operating said frame and said tongs.

2. An automobile cover comprising a cover member wound on a roller amounted at the rear of the vehicle, a normally collapsed frame also carried at the rear of the vehicle consisting of an upper movable member having a transverse bar provided with a longitudinal slot in its lower side and a lower stationary member, said members being connected together by pivotally connected side links connected to said members, a right and left hand threaded shaft rotably mounted adjacent said lower member provided with unthreaded portions at each end of the threaded portions, blocks threaded on the threads of said shaft adapted for inward and outward movement along the same, a pair of normally collapsed crossed links pivotally connected together at midlength the extension of which raises said movable member and side links into position, said crossed links having their lower ends connected respectively to said blocks and their upper ends adapted for slidable movement in the slot of the said transverse bar, means for operating said shaft, a normally collapsed lazy tong mechanism swingably connected to said movable member capable of horizontal extension, means for operating said lazy tongs operatively connected to the threaded shaft and inoperative until the movable member is raised into position, and means for them rendering said operating means operative.

3. An automobile cover comprising a cover member wound on a roller mounted at the rear of the vehicle, a normally collapsed frame also carried at the rear of the vehicle consisting of an upper movable member having a longitudinally slotted transverse bar and a lower stationary member connected together by pivotally connected side links, a right and left hand threaded shaft rotatably mounted adjacent said lower member provided with unthreaded portions at each end of the threaded portions, blocks mounted on the outer unthreaded portions when said frame is collapsed, means for engaging said blocks on said threads when said shaft is started rotating whereby they will traverse the threads inwardly and override them at their inner ends, means for reëngaging said blocks on the threads at a predetermined point in the retracting operation of the cover, means for rotating said shaft, a pair of normally collapsed crossed links pivotally connected together at midlength the extension of which raises said movable member and side links into position, said crossed links having their lower ends connected respectively to said blocks and their upper ends adapted for slidable movement in the slot of said transverse bar, a vertical telescopic shaft rotatably mounted adjacent said crossed links and extensible and collapsible concurrently with the extension and collapse of the same, said shaft being gear-connected with the threaded shaft at its lower end, a normally collapsed lazy tong mechanism swingably connected to said movable member in a vertical position when said frame is collapsed and adapted to drop to a horizontal position, during extension of the same, a normally inoperative gear connection between said lazy tongs and the upper end of said telescopic shaft, said connection being rendered operative by the raising of the movable member and the dropping of the lazy tongs.

4. The combination with a vehicle, of a normally collapsed vertically extensible frame carried at the rear of the vehicle, a normally collapsed horizontally extensible frame carried by said first frame, a power shaft, means for extending said first frame operable from said power shaft, and means for extending said second frame arranged to be operated from said power shaft upon the full extension of said first frame.

5. The combination with a vehicle, of a

normally collapsed vertical extensible frame carried at the rear of the vehicle and a normally collapsed horizontally extensible frame carried by said first frame, a power shaft, means for extending and collapsing the vertically extensible frame including a rotatable shaft geared to the power shaft, and means for extending and collapsing the horizontally extensible frame including a rotatable shaft arranged to be geared with the rotating shaft of the vertical extensible frame upon the full extension of the latter frame.

6. The combination with a vehicle, of a normally collapsed vertically extensible frame carried at the rear of the vehicle and a normally collapsed horizontally extensible frame carried by said first frame, a power shaft, means for extending and collapsing the first frame including a rotatable shaft carried by the frame and geared to the power shaft, means for extending and collapsing the second frame including a rotatable shaft carried by said second frame, and a telescopic shaft carried by the first frame to be extended therewith and adapted when so extended to establish a drive connection between the shafts of the two frames.

7. The combination with a vehicle, of a normally collapsed vertically extensible frame including a lower stationary member and an upper movable member, collapsible connections extending between said members and operable to extend or collapse the frame by raising or lowering the movable member with respect to the stationary member, a horizontally extensible cover frame carried by said first frame, a power shaft, and means operable from the power shaft to extend and collapse said frame, said means including flexible connections extending between the members of said frame.

8. The combination with a vehicle, of a normally collapsed vertically extensible frame including a lower stationary member and an upper movable member, a rotatable shaft carried by said lower member, a pair of crossed members pivotally connected together intermediate their length and connected at their upper ends to the upper member of the frame, the lower ends of the members being so connected to the shaft as to be drawn together to extend the frame when the shaft is rotated in one direction and spaced apart to collapse the frame when the shaft is rotated in the opposite direction, a power shaft geared to said first-mentioned shaft, and a horizontally extensible cover frame carried by said first frame.

9. The combination with a vehicle, of a normally collapsed vertically extensible frame carried at the rear of the vehicle and comprising a lower stationary member, an upper movable member and pivotally connected link members connecting said upper and lower members at each end thereof, a normally collapsed horizontally extensible cover frame carried by the upper member of said first frame, a pair of crossed levers pivotally connected together intermediate their length and slidably attached at their upper ends to the upper member of said first frame, flexible connections extending between said crossed levers and certain of the links connecting the ends of the upper and lower members of said first frame, and power means operable to move the lower ends of said cross levers toward one another to extend said frame or away from one another to collapse said frame.

10. The combination with a vehicle, of a vertically extensible frame carried at the rear of the vehicle, a power shaft, means for extending said frame including a rotatable shaft geared to said power shaft, a horizontally extensible frame carried by the upper portion of said first frame, means for extending the last named frame, including a rotatable shaft carried by said frame, a telescopic shaft carried by said first frame and extensible therewith, the lowermost section of the telescopic shaft being geared to the first mentioned shaft of said first frame and being adapted in the extended position of said shaft to gear with the shaft of the second frame to transmit power thereto.

11. In a device of the character described, the combination with a vertically extensible frame, and means for extending and collapsing said frame including a rotatable shaft carried by the frame and a power shaft geared to said first-mentioned shaft, of a horizontally extensible cover frame including a lazy tong structure, a horizontal shaft supported by the upper end of the first frame and to which the end levers at one end of the lazy tongue structure are attached, said end levers being so connected to the shaft as to be separated to collapse the frame by rotation of the shaft in one direction and drawn together to extend the frame by rotation of the shaft in the opposite direction, and means collapsible with the first frame to establish a drive connection between the shafts of the two frames.

Dated at Vancouver, B. C., this 17th day of December, 1918.

PERCIVAL FAULKNER KING.