June 16, 1936. A. W. EASLEY 2,044,066

AUTOMOBILE DOOR LOCKING MECHANISM

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Fig 1

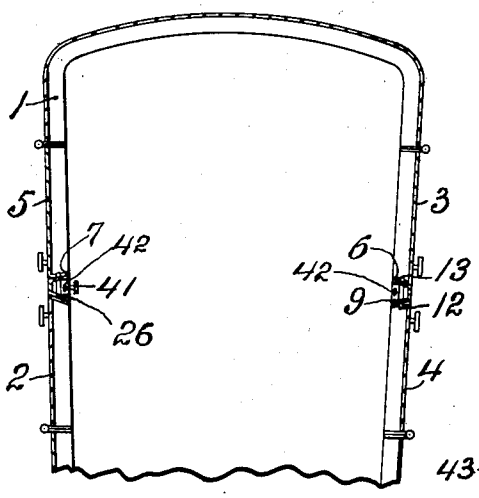


Fig 2

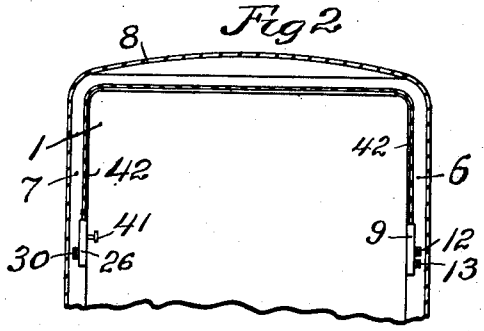


Fig 3

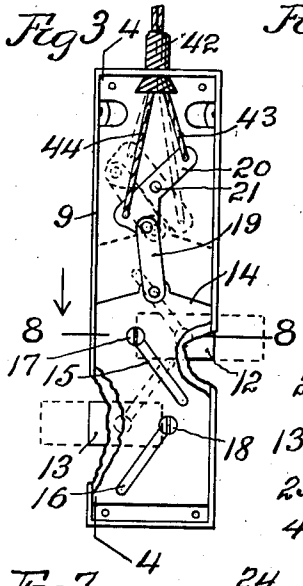


Fig 4

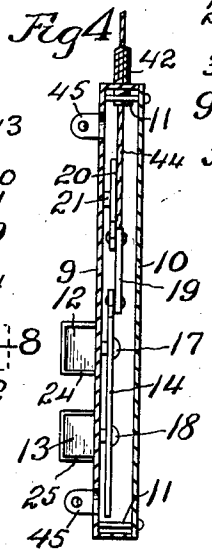


Fig 5

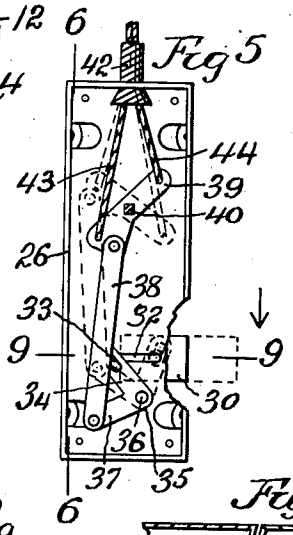


Fig 6

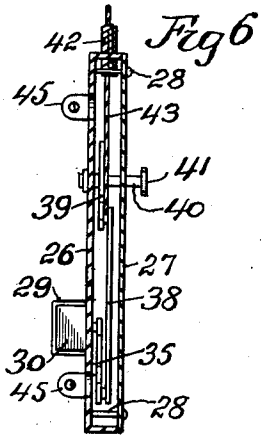


Fig 7

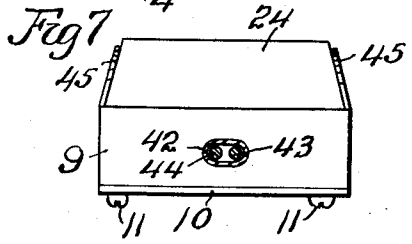


Fig 8

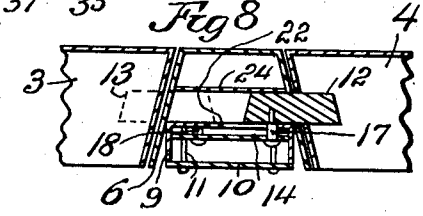
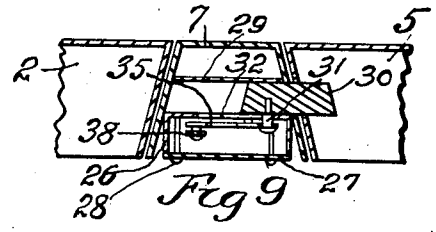


Fig 9



Arthur W. Easley INVENTOR

BY Warren D. House

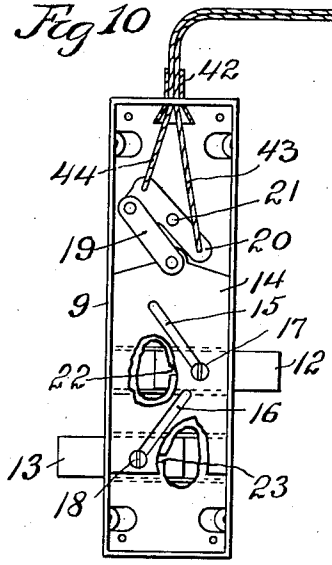
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AUTOMOBILE DOOR LOCKING MECHANISM

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Fig 10



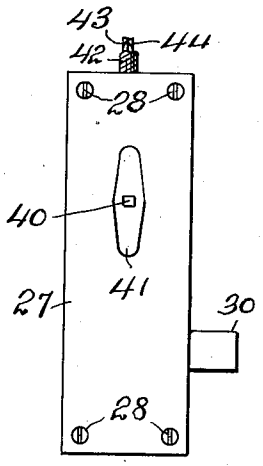
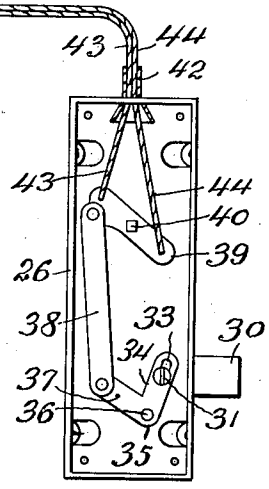


Fig 11



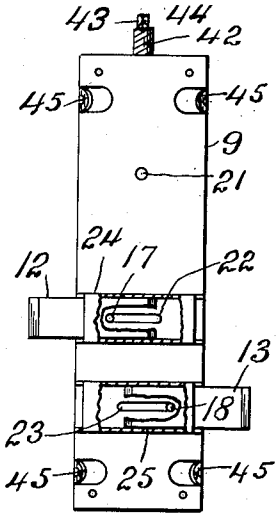


Fig 12

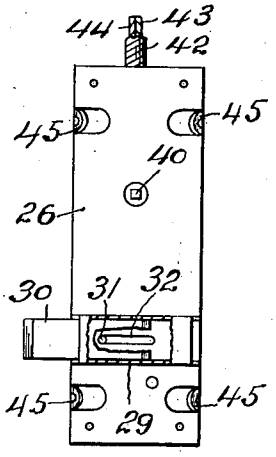


Fig 13

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Patented June 16, 1936 2,044,066

UNITED STATES PATENT OFFICE

2,044,066

AUTOMOBILE DOOR LOCKING MECHANISM

Arthur W. Easley, Independence, Mo.

Application December 5, 1932, Serial No. 645,704

2 Claims. (Cl. 70—14)

My invention relates to improvements in automobile door locking mechanisms. It is particularly well adapted for use on four door sedans.

One of the objects of my invention is to provide a novel door locking mechanism of the kind described with which a person, while in the car, can at one operation simultaneously lock or unlock three doors of the car, using one door of the car for entrance and exit, which latter car door may be locked from the outside with the usual key.

A further object of my invention is to provide a novel door locking mechanism of the kind described, which is simple, cheap, strong, durable, not likely to get out of order, and which is applicable to cars now in use with small modification of their structures.

The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawings, which illustrate the preferred embodiment of my invention,

Fig. 1 is a reduced horizontal section of a portion of a four door sedan car provided with my improved door locking mechanism.

Fig. 2 is a reduced vertical sectional view of the same.

Fig. 3 is an enlarged inside elevation, partly broken away, and with the cover removed of the lock provided with the two bolts for locking two doors at one side of the car, the bolts being shown in solid lines in the unlocked position, and in dotted lines in the locked position.

Fig. 4 is a section on the plane of the line 4—4 of Fig. 3.

Fig. 5 is an enlarged inside elevation, partly broken away, and with the cover removed of the lock at the opposite side of the car having one bolt for locking one of the doors, the bolt being shown in solid lines retracted, and in dotted lines in the locking position.

Fig. 6 is a section on the plane of the line 6—6 of Fig. 5.

Fig. 7 is a further enlarged top view of the lock shown in Fig. 3, the cables and cable casing being shown in cross section.

Fig. 8 is a horizontal section on the plane of the line 8—8 of Fig. 3, showing the lock installed in the jamb between two doors, the latter being broken away, and the bolts shown in the locked position respectively engaging the two doors.

Fig. 9 is a horizontal section on the plane of the line 9—9 of Fig. 5, showing the lock for the single door installed in the jamb between the two doors at that side of the car, the said two doors being broken away.

Fig. 10 is an inside elevation, enlarged, of the two locks with their covers removed, one lock being partly broken away, and showing the two flexible connecting members attached to the two levers of the locks, the bolts being shown in the locking positions.

Fig. 11 is an enlarged inside elevation of the lock having the single bolt.

Fig. 12 is an enlarged outside elevation, partly broken away, of the two bolt lock.

Fig. 13 is an enlarged outside elevation, partly broken away, of the single bolt lock.

Similar characters of reference designate similar parts in the different views.

1 designates the usual body of a four door sedan car, 2 the right hand front door, 3 the left hand rear door, 4 the left hand front door, and 5 the right hand rear door.

6 designates the jamb between the doors 3 and 4, and 7 the jamb between the doors 2 and 5.

8 designates the roof of the car. Located in the jamb 6 is a lock casing 9 having on its inner side a removable cover 10 fastened to the casing 9 by screws 11, Figs. 1, 2, 4 and 8.

Slidable outwardly in the casing 9 from the unlocked position shown in solid lines in Fig. 3, to the locked position, Fig. 8, are two bolts 12 and 13 adapted to pass to and from the locked positions, respectively engaging the rear door 3 and the front door 4, through holes provided therefor in the side walls of the jamb 6, and in the adjacent edges of the doors 3 and 4.

For sliding the bolts 12 and 13 to and from the unlocked position, there is vertically slidably reciprocative in the casing 9 a flat plate 14 having through it two oppositely inclined slots 15 and 16 in which are respectively slidably mounted two shouldered screws 17 and 18 which are respectively fastened to the bolts 12 and 13. When the plate 14 is moved upwardly from its lowermost position, shown in Fig. 3, to the uppermost position, shown in Fig. 10, it will, through the screws 17 and 18 force outwardly to the locked position, shown in Fig. 10, the bolts 12 and 13, and when the plate 14 is forced downwardly it will retract the bolts 12 and 13 to the unlocked position.

For vertically reciprocating the plate 14, it has pivoted to its upper end portion the lower end of a link 19, which has its upper end pivoted to a lever 20, which is centrally pivoted to the casing 9 by an axis or fulcrum comprising a pin 21, Figs. 3, 4 and 10.

The casing 9 is provided with two horizontal

slots 22 and 23 through which extend the screws 17 and 18, Figs. 8, 10 and 12, and the outer side of the casing 9 is provided with two channel housings 24 and 25 in which are respectively slidable the bolts 12 and 13, Figs. 4, 8 and 12.

In the jamb 7 is mounted a lock casing, 26, having a removable cover 27 fastened by screws 28, Figs. 5, 6, 9, 10, 11 and 13.

On the outside the casing 26 is provided with a horizontal channel member 29 in which is slidably mounted a bolt 30, which is slidable horizontally from the unlocked position, shown in Fig. 5, to the locked position, Figs. 9, 10, 11 and 13, by means of a screw 31 mounted in the bolt and extending through a slot 32 in the casing 26, which screw 31 extends through and is slidable in a slot 33 provided in one arm 34 of a bell crank lever 35, which is pivoted on a pin 36 mounted in the casing 26. The other arm 37 of the bell crank lever 35 is pivoted to the lower end portion of a link 38, the upper end portion of which is pivoted to a lever 39, which is pivoted to the casing 26 by means of the shank 40 of a manually operable member comprising a handle 41, Figs. 5, 6, 10 and 11.

Having its ends extending respectively into the upper ends of the casings 9 and 26 is a tubular flexible housing 42, in which are longitudinally slidable two flexible members comprising cables 43 and 44, one set of ends of which are fastened to the lever 20, at opposite sides respectively of the axis 21 thereof, and the other ends of which cables are fastened to the lever 39 at opposite sides respectively of the axis thereof, comprising the handle shank 40.

When the parts are in the locked position, shown in Figs. 10 and 11, and the handle 41 is turned at right angles from the position shown in Fig. 11, it will also turn the shank 40 and with the latter the lever 39. The lever 39 will be turned from the position shown in dotted lines in Fig. 5 to the position shown in solid lines in said figure, thereby retracting the bolt 30 to the unlocked position, by means of the link 38, lever 35 and screw 31.

When the lever 39 is turned to the position shown in solid lines in Fig. 5, the right end, as viewed in Figs. 5 and 10, of the flexible member 43 will be drawn downwardly, thus swinging the lever 20 from the locking position, shown in Fig. 10, to the position shown in solid lines in Fig. 3, whereby the link 19 will be moved by the lever 20 so as to force downwardly the plate 14, which in turn, through the screws 17 and 18, will force the bolts 12 and 13 to the unlocked position.

When the driver of the car desires to leave the car with the doors locked, he will close the doors 3, 4 and 5 and then will turn the handle 41 to the position shown in Fig. 11, which turning of the handle will swing the lever 39 to the position shown in Fig. 10, thus pulling the right hand end of the flexible member 44 downwardly, which action will swing the lever 20 to the position, shown in Fig. 10, which will cause the link 19 to move upwardly the plate 14, thereby effecting the moving of the bolts 12 and 13 to the locked position, shown in Figs. 8 and 10.

Such swinging of the lever 39 will, through the link 38, lever 35 and screw 31, move the bolt 30 to the locked position, shown in Figs. 9 and 10.

The three doors 3, 4 and 5 being locked, the driver will leave the car by the door 2, which he will lock in the usual manner. Upon reentering the car through the door 2, he may leave the other three doors 3, 4 and 5 locked, if he so desires.

Suitable means may be employed for fastening the casings 9 and 26 to the jambs 6 and 7 respectively. In the drawings, the casings 9 and 26 are shown provided at their outer sides and opposite side edges with outwardly projecting ears 45, which may be welded or fastened by screws, not shown, to the inner sides of the flanges of the channel jambs 6 and 7.

Various modifications of my invention, within the scope of the appended claims, may be made without departing from the spirit of my invention.

What I claim is:—

1. In a door locking mechanism, the combination with two levers, manually operated means for oscillating one of said levers, two longitudinally movable flexible members attached at one set of ends to said one lever at opposite sides of the fulcrum thereof and attached at their other set of ends to the other of said levers at opposite sides of the fulcrum thereof, of two reciprocative locking bolts, a reciprocative member, and a link pivoted to said other lever and to said reciprocative member for reciprocating said reciprocative member, when said levers are oscillated, said reciprocative member having means engaging said bolts for simultaneously reciprocating said bolts in opposite directions.

2. In a door locking mechanism, the combination with two levers, manually operated means for oscillating one of said levers, two longitudinally movable flexible members attached at one set of ends to said one lever at opposite sides of the fulcrum thereof and attached at their other ends to the other of said levers at opposite sides of the fulcrum thereof, of a lock casing, two locking bolts reciprocative in said casing through opposite sides respectively thereof, a reciprocative member in said casing, and a link pivoted to said other lever and to said reciprocative member for reciprocating the latter when said levers are oscillated, said reciprocative member having means engaging said bolts for simultaneously reciprocating said bolts in opposite directions to and from the locking position.

ARTHUR W. EASLEY.