

Feb. 24, 1953

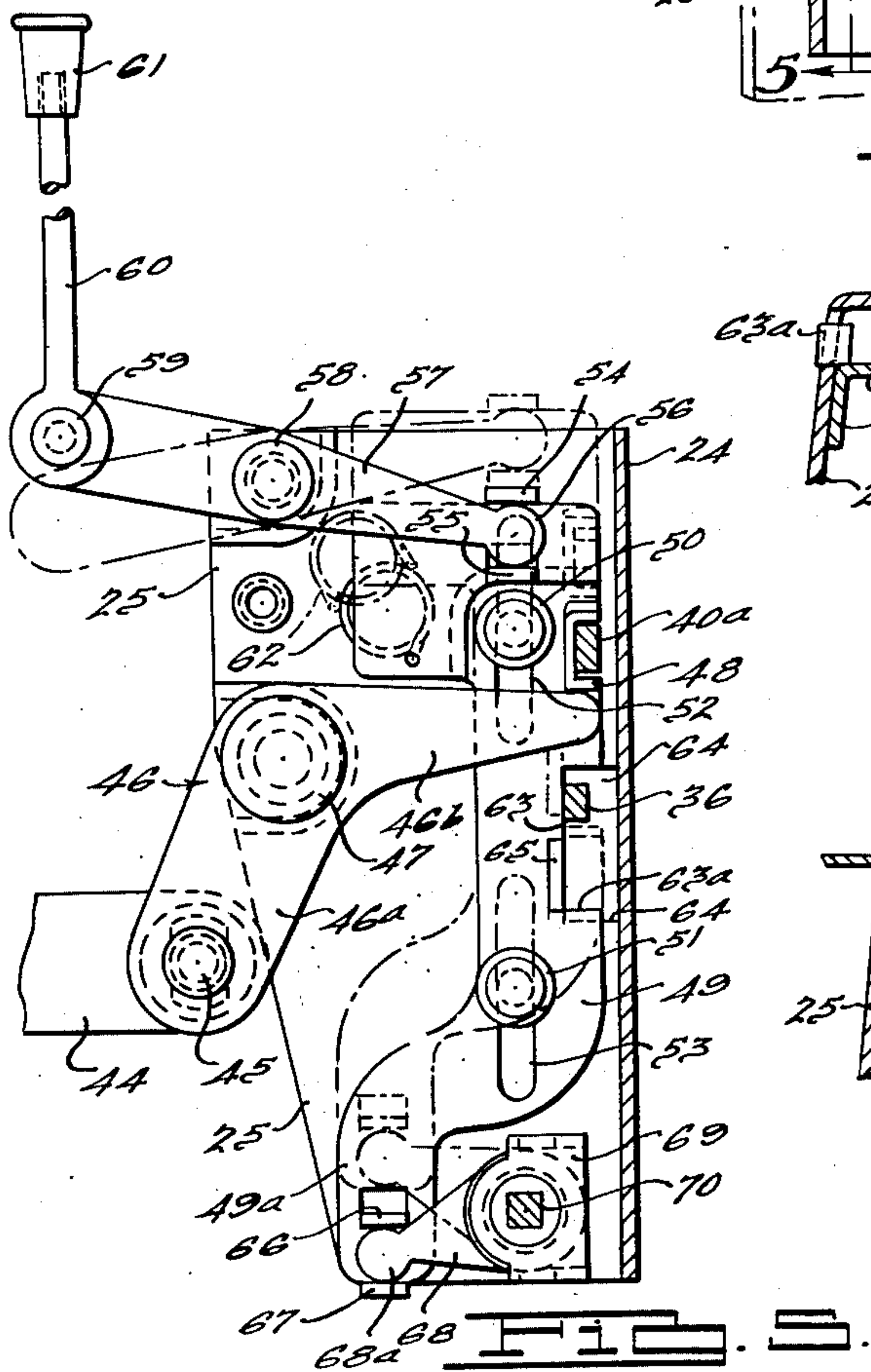
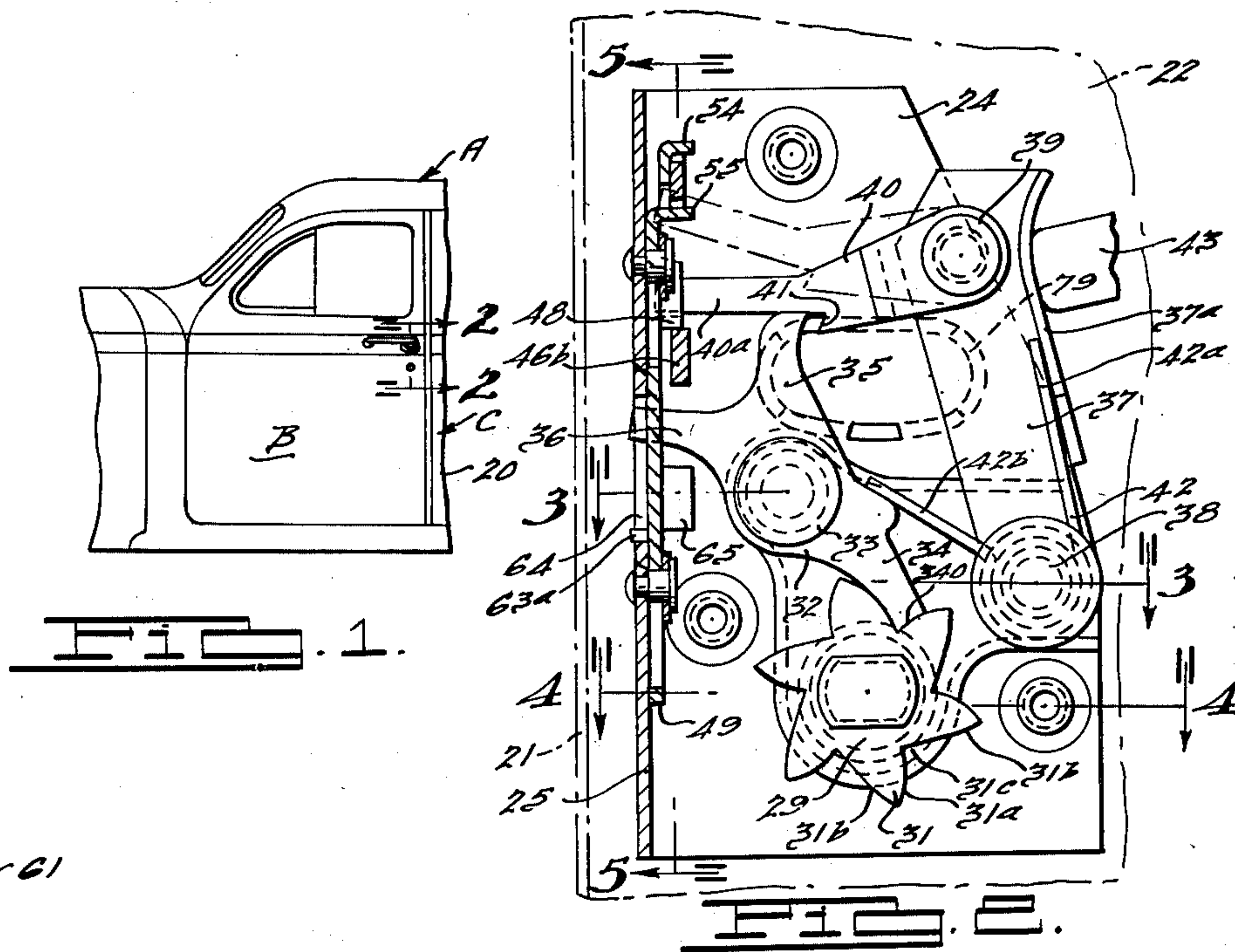
J. H. ROETHEL

2,629,618

DOOR LOCK

Filed Aug. 19, 1948

2 SHEETS—SHEET 1



INVENTOR.

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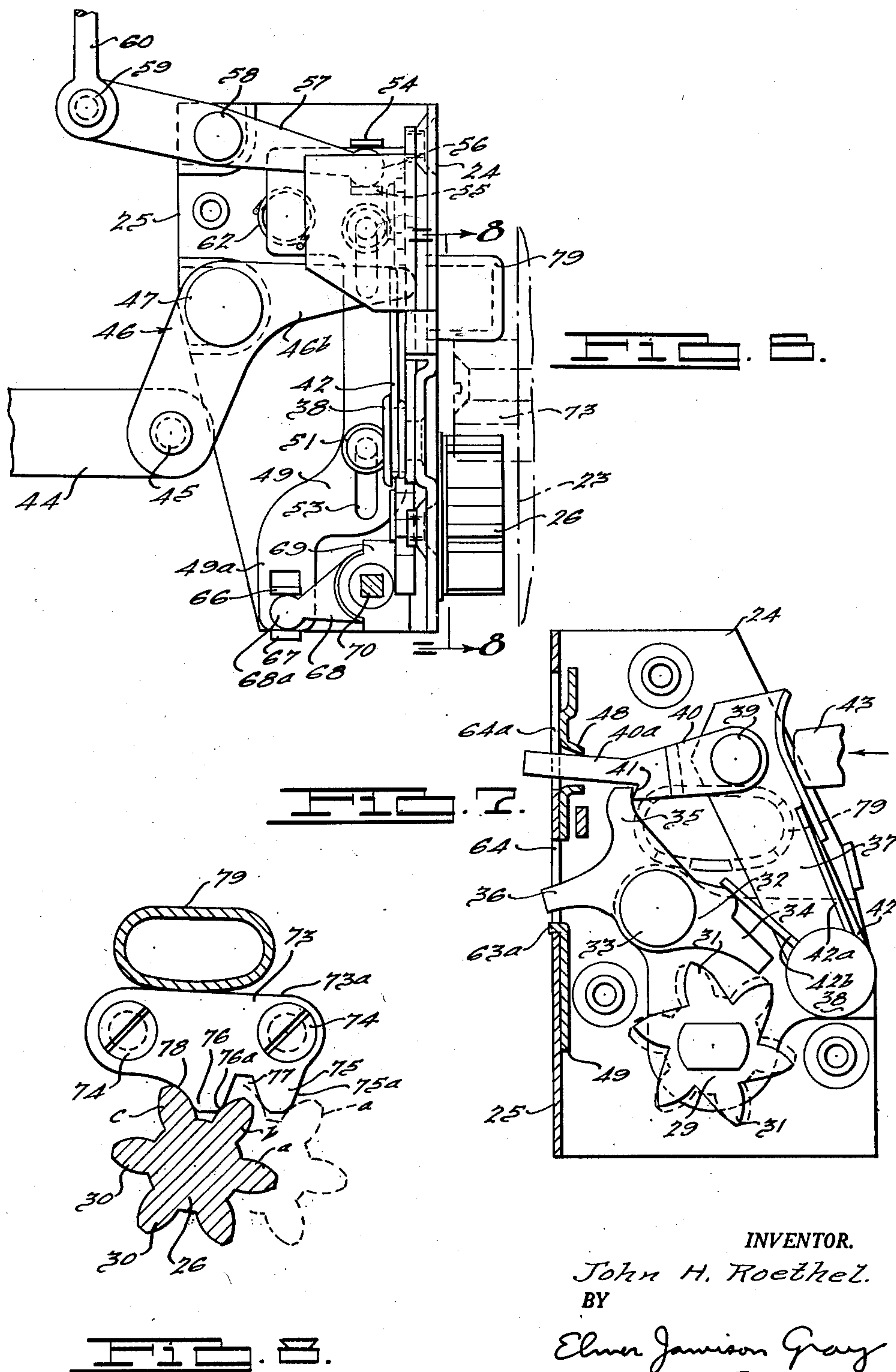
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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE

2,629,618

DOOR LOCK

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Application August 19, 1948, Serial No. 45,043

11 Claims. (Cl. 292—280)

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This invention relates to latch mechanism for the swinging doors of various structures. Although a desirable adaptation of the present invention is in connection with the doors of vehicle bodies, such as automobile bodies, the invention may be applied to other uses.

An object of the invention is to provide a door latch mechanism which is relatively simple and compact in construction, efficient and positive in operation, economical to manufacture in large quantities, extremely quiet in operation when closing the door, and easy to release when opening the door.

Another object of the invention is to provide an improved door latch device embodying a rotatable or pivoted latch or latch controlling member adapted to be held in latching position by means of detent or dogging means, and wherein manually shiftable means is provided for releasing or disengaging the detent or dogging means through the medium of a connection which may be moved out of operative relation to the detent means. In accordance with one aspect of the invention the detent may not be disengaged by operation of the outside door handle, push button or the like when the detent release means is disconnected from the detent, such disconnection being accomplished in various ways, such as by means of an inside shiftable device or by a key operated device. In accordance with a further aspect of the invention the connection between the detent release means and detent as well as the inside shiftable device may be simultaneously moved into their normal positions by operation of the inside door handle or operator to disengage the detent. In accordance with still a further aspect of the invention wherein an inside manually shiftable device is used to effect disconnection of the detent release means and detent, the construction is such that when such disconnection is accomplished the detent may not be disengaged by operation either of the outside or inside door handles, push buttons or the like.

Another object of the invention is to provide means for rendering operative the connection between the detent release means and detent when the door latch is moved to latching position and regardless of the fact that such connection may have been previously moved out of operative relation to the detent when the door is in open position. In accordance with one aspect of the invention the foregoing is accomplished at least in part by movement of the detent when the door latch or latch bolt device is actuated by the striker upon closing the door.

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In accordance with the embodiments of the invention, herein illustrated by way of example, there is provided a pivoted or rotatable latch device mounted on a support for the latch mechanism. The latch mechanism also comprises detent means pivotally mounted on the support, said detent means comprising a unitary member having a plurality of rigid arms, one arm extending in one direction and engageable with said latch device for holding the same in door latching position, a second arm extending in another direction, and a third arm extending in a third direction. An outer manually operable means is provided for pivotally actuating the detent means and includes a lever pivotally mounted on the support. A link means is pivotally connected to said lever, said link means having a part normally arranged in operative relation to a part of the second detent arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from the latch device. The link means is movable to position its said part out of abutting relation to the second detent arm, such movement being obtained through a control means engageable with the link means and actuatable by inner manually operable means. The latch mechanism is further provided with a manually operable lever pivotally mounted on the support and engageable with the third arm of the detent means and operative upon being pivotally actuated to effect disengagement of said detent means from said latch device and simultaneously shiftable movement of said link means and control means to restore said link means part in abutting relation to said part of the second detent arm.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

Fig. 1 is a fragmentary side elevation of a portion of an automobile body provided with swinging doors upon which latch devices made in accordance with the present invention are installed.

Fig. 2 is an enlarged vertical section taken substantially through lines 2—2 of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a section taken substantially through lines 3—3 of Fig. 2 looking in the direction of the arrows.

Fig. 4 is a section taken substantially through

lines 4—4 of Fig. 2 looking in the direction of the arrows.

Fig. 5 is a section taken substantially through lines 5—5 of Fig. 2 looking in the direction of the arrows.

Fig. 6 is a fragmentary side elevation, in part similar to Fig. 5, illustrating more fully the operating means accessible at the inside of the door.

Fig. 7 is a view, generally similar to Fig. 2, illustrating the disengagement of the detent means.

Fig. 8 is a section taken substantially through lines 8—8 of Fig. 6 looking in the direction of the arrows.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

In the drawings there is illustrated, by way of example, an embodiment of the present invention as applied to the doors and door frame structures of an automobile body. As illustrated in Fig. 1 the automobile body, generally designated at A, is provided with a front door B which is hinged at its front edge so as to swing against a door post or body pillar in accordance with conventional practice. The automobile body of the illustrated type is also provided with a rear swinging door C. Each door comprises an outer metal door panel 20 and an inner metal door panel 21, see Fig. 2. The panel 21 terminates in a transverse jamb edge or portion 22 facing the fixed jamb face or edge 23 (Fig. 6) of the door frame post or body pillar.

Adapted to be secured, as by means of screws, to the inner side of the jamb portion 22 of the door is a case plate 24 having a flange 25 facing the inner door panel 21. The present latch device is preferably provided with a rotatable toothed latch or bolt 26 positioned at the outer face of the case plate 24, see Fig. 4, this latch or bolt having an integral projecting stud shaft or pivot 27 extending through an aperture in the case plate and having a bearing in the annular flanged edge 28 of this aperture. The inner reduced end 27a of the stud or shank 27 of the bolt is flattened and extended through a correspondingly shaped aperture in a rotatable detent or dog engaging member 29, the inner end of the flattened portion 27a being riveted over this member so as to rigidly anchor the same to the bolt. The member 29 is formed from flat stock and has bearing engagement against an annular embossment 24a on the case plate. The rotatable latch 26, as shown in Fig. 8, is formed with a number of radially projecting tooth-like projections 30, such as six, which are spaced equally entirely around the periphery of the latch so as to provide in effect a gear type latch. The detent engaging plate or member 29 is formed around its periphery with a number of tooth-like abutments or shoulders 31 which correspond in number to the number of tooth-like projections 30. Thus, in the illustrated embodiment the latch 26 has, for example, six tooth-like projections 30 and the detent engaging plate 29 has six equally spaced detent engaging tooth-like projections or abutments 31. Each tooth 31 of the member 29 is formed at one side with a relatively short outwardly curved edge 31a and at the opposite side

with a relatively long curved camming edge 31b. A detent receiving space 31c is formed between the edges 31a and 31b of each adjacent pair of teeth or projections 31 and it will be noted that the edge 31a of each detent receiving space curves outwardly and away from the edge 31b of this space.

Cooperable with the rotatable ratchet or detent engaging member 29 is a swinging detent, pawl or dog 32 pivotally mounted upon the shank of a stud or shoulder rivet 33 secured to the case plate 24. The detent or dog 32 is provided with a detent arm 34 having a curved end 340 correspondingly substantially to the curvature of the edge 31a of each projection 31 when the detent arm 34, as shown in Fig. 2, is fully seated within the toothed space 31c. The detent 32 has an upwardly projecting arm or extension 35 and also an inwardly extending arm or extension 36. The detent is thus provided with three arms 34, 35 and 36 and is preferably formed from a single piece of flat metal stock.

Associated with the detent 32 is a detent actuating or release lever 37 which is pivoted at its lower end upon a shoulder rivet 38 secured to the case plate. Pivoted at 39 to the side of the lever 37 near the upper end thereof is a detent operating link 40, this link in the present instance extending inwardly from the lever 37 and overlying the upper end of the detent arm 35, the link 40 thus being mounted so as to swing vertically toward and from the detent arm 35. The link 40 is formed at its lower edge with an abutment or shoulder 41 adapted to engage the upper end of the detent arm 35 when the link 40 is shifted inwardly by means of the lever 37 as shown in Fig. 7. Beyond the abutment 41 the link 40 has an extension 40a for a purpose hereinafter described. The detent release lever 37 is urged outwardly toward its retracted position, as shown in Fig. 2, and the detent 32 is yieldingly urged toward the plate 29 by means of a common spring 42. This spring is coiled around the stud or shoulder rivet 38 and has an upward extension 42a engaging a flange 37a on the lever 37. The spring 42 also has an inward extension 42b engaging the detent arm 34. The flange portion 37a on the lever 37 is widened for engagement by a plunger 43 which may be shifted inwardly to swing the lever 37 by any suitable manually operable means on the outside of the door such, for example, as a handle or by any other preferred means such as a push button associated with the outside door handle.

The latch device constructed in accordance with the present embodiments incorporates a remote control mechanism so constructed as to permit release or disengagement of the detent 32 by operation of an inside door handle or other manually operable means. This remote control mechanism is preferably manually actuated from the inside of the door remote from the case plate 24 by means of a door handle which may be turned in the desired direction. Suitably connected to the inside door handle is a longitudinally extending draft link 44 which is pivoted at 45 to the lower end of one arm 46a of a bell crank lever 46. This lever is pivoted at 47 to the case plate flange 25 and is provided with a projecting arm 46b overlying at its outer end the detent arm 36. Normally when the inside door handle is turned so as to swing the lever arm 46b downwardly the latter by engagement with the detent arm 36 will swing the detent, thus swinging the detent arm 34 upwardly to

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the position shown in Fig. 7 so as to disengage it from the member 29. A similar action occurs when the release lever 37 is swung inwardly by the operation of the outside door handle, push button or the like, the link 40 being shifted inwardly as shown in Fig. 7 and, through its operative connection 41 with the detent arm 35, swinging the detent to its disengaged position.

In the embodiment of Figs. 1 to 7 inclusive means is provided for disconnecting the operating link 40 and release lever 37 from the detent arm 35 and also for effecting the operative connection of these parts, this being accomplished through the medium of a manually operable slide which may be shifted either by hand, or by operation of the inside door handle, or by the detent arm 36, or by a key operated lock. The extension 40a of the operating link 40 projects through a flanged aperture 48 in a vertically shiftable slide bar 49. Thus, an interlocking connection is provided between the link extension 40a and the slide member 49 so that vertical movement in either direction of the slide member will raise the link 40 to disengage it from the detent arm 35 or lower it into operative relation thereto as shown in broken and full lines in Fig. 2. The slide member 49 is guided on the case plate flange 25 by means of upper and lower headed guide studs 50 and 51 extending through vertical guide slots 52 and 53 in the slide. The slide 49 is provided at its upper end with vertically spaced lugs 54 and 55 which receive the round end 56 of a rock arm or lever 57 pivoted at 58 to the case plate flange 25. The end of the lever 57 remote from the rounded portion 56 is pivotally connected at 59 to a vertically shiftable rod or plunger 60 which extends upwardly through the garnish molding at the inner side of the glass panel of the door. This rod carries at its upper end a knob 61 which may be grasped at the inside of the door to shift the plunger vertically in either direction.

From the foregoing construction it will be apparent that by pressing the knob 61 downwardly the lever 57 will be rocked thereby raising the slide 49, and conversely when the rod 60 is pulled upwardly the slide 49 will be shifted downwardly. In the present instance the slide is yieldingly held and urged toward its upper and lower limits of movement by means of a snap-over spring 62 of suitable strength attached at one end to the slide and at the opposite end to the case plate flange 25. As particularly shown in Fig. 5, the slide 49 is cut away or notched at 63 to receive the inner end of the detent arm 36, and the lower edge of the notch is formed with an inturned flange or lug 63a. The depth of the notch 63 is such as to permit the lug 63a to be moved, as shown in dotted lines in Fig. 5, to a position directly underlying the detent arm 36 and in substantial engagement therewith when the slide 49 is shifted upwardly. The case plate flange is provided with an aperture 64 to receive the end of the detent arm 36, see Fig. 7, and permit vertical movement thereof as well as of the lug 63a which projects therethrough. The case plate flange also has an aperture 64a to receive the arm 40a of the operating link 40 when shifted inwardly as shown in Fig. 7. Projecting outwardly from the side edge of the notch 63 in the slide 49 is a flange or lug 65 which is moved upwardly into position to underlie and substantially engage the lever arm 46b when the slide 49 is shifted upwardly.

Assuming that the link 40 is in its operative

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position with respect to the detent arm 36, as shown in Fig. 2, upward movement of the slide 49 by actuation of the lever 57 will swing the link 40 upwardly by virtue of the connection 48 between the slide and the link, thereby disconnecting the link from the detent arm 35. When this occurs it will be apparent that the release member 37 may be pushed inwardly freely without disengaging the detent 32 from the plate 29, since by this inward motion of the lever 37 the link 40 will be free to move inwardly relative to the detent arm 36 without imparting any disengaging motion thereto.

With the slide 49 in its upper position the lug 63a thereon will be positioned immediately beneath the detent arm 36 and the lug 65 on the slide will be positioned immediately beneath the remote control lever arm 46b. Hence, upon operation of the inside remote control mechanism, including lever 46, so as to swing the lever arm 46b downwardly the slide 49 will be shifted downwardly by coaction of the lever arm 46b with the lug 65 on the slide. As the slide is thus shifted downwardly by the lever arm 46b the latter will engage the detent arm 36, thus swinging the detent to disengaged position. Thus, it will be seen that, even though the outside release lever 37 may be disconnected from the detent 32 by shifting the slide 49 upwardly, the slide will be returned downwardly to its normal position to again connect the release lever with the detent by operation of the inside remote control mechanism accompanied by actuation of the detent to disengage it from the toothed member 29 and permit opening of the door.

In the event the slide 49 is shifted upwardly when the door is in open position, closing of the door will result in the detent arm 36 shifting the slide downwardly. When the door is closed with the slide 49 in its upper position, engagement of the bolt 26 with the striker will rotate the plate 29 and thus swing the detent 32 in a counterclockwise direction, as viewed in Fig. 2. This action will swing the detent arm 36 downwardly and by its engagement with the lug 63a on the slide 49 will shift the slide downwardly. During this downward movement of the slide the snap-over spring 62 will pass over dead center and through its action will aid the detent arm 36 in shifting the slide to its lowermost position, thereby bringing the operating link 40 into operative relation to the detent arm 35 so as to permit the door to be opened from the outside. Although in the present instance the spring 62 assists the detent arm 36 in carrying the slide to its lower limit, it will be understood that the parts may be designed and proportioned and the illustrated range of travel of the slide reduced so that the detent arm 36 will swing downwardly a sufficient distance to carry the slide to its full lower limit. Moreover, lost motion between parts indicating production tolerances may be varied to suit manufacturing requirements.

Where a key controlled device is used with any of the present embodiments the slide 49 is provided with a depending extension 49a having spaced lugs 66 and 67 pivotally receiving a rounded end 68a of a swinging crank arm 68. This arm is pivoted to a bracket 69 on the case plate and provided with a square opening at the locality of its pivot to receive the square portion 70 of a key actuated shaft. This shaft is connected to the cylinder mechanism of any conventional lock having the usual key control. By turning the key in the lock on the outside

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of the door the crank arm 68 may be swung to shift the slide 49 vertically in one direction or the other thereby to shift the detent operating link 40 into or out of engaged relation to the detent arm 35. The key control means for the slide 49 is usually embodied in the front door locks of an automobile body but is usually omitted from the locks used on the rear doors.

When mounting the case plate and latch mechanism carried thereby on the door jamb 22, see Fig. 4, the bolt 26 is passed through a circular hole or aperture 71 in the door jamb thereby positioning it at the outer side of the jamb. Since the diameter of the hole 71 is at least as great as the maximum diameter of the toothed bolt 26, it will be apparent that portions of the hole or aperture 71 will be exposed between the teeth 30 of the bolt. This objectionable condition is overcome in the present instance by providing a flat escutcheon disk or cap 72 which has a central flanged aperture 72a fitting over the annular bearing flange 23 in the case plate. The disk 72, being interposed between the bolt 26 and the case plate 24, as shown in Fig. 4, completely closes the spaces between the teeth 30. The outer edge of the cap or disk 72 is embossed and formed with a laterally extending annular flange 72b which is overlapped by the door jamb 22 around the edge of the aperture 71 therein. Thus, when the case plate 24 is screwed tightly to the inner side of the door jamb the flange 72b of the closure cap 72 will be clamped tightly between the case plate and door jamb.

In the several embodiments of the invention herein illustrated the rotary toothed latch 23 is actuated when the door is closed by means of a striker or keeper device which, in the present embodiments, is rigidly mounted on the jamb edge 23 of the body pillar or fixed upright member of the door frame. As illustrated in Fig. 3, the striker device comprises a body member 73 which may be in the form of a die casting or, if desired, a stamping, this member being secured to the body pillar by means of screws 74. The striker body 73 is formed at its lower edge with two integral tooth-like projections 75 and 76 forming therebetween a tooth space 77 having downwardly diverging side edges. When the door is moved to closed position, and in any rotated position of the latch 26, one of the teeth 30, such as the tooth indicated at *a*, will engage the outer tapered edge 75a of the striker tooth 75, thereby rotating the latch to move the next succeeding tooth, indicated at *b*, into the tooth space 77 as shown in broken lines in Fig. 8. If the door remains only partially closed with the latch 26 in its broken line position in Fig. 3, the latch will be in its safety locking position and the door will be positively held against opening movement by the tooth 75 on the striker. Continued closing movement of the door will cause the bolt 26 to be rotated further by engagement of the tooth *b* with the outer edge of the tooth 73, thereby bringing the next succeeding tooth, indicated at *c*, into engagement with the inner edge 73 of the tooth 75, this latter edge being shaped in accordance with the curved contour of the tooth on the bolt. When the bolt thus reaches the full line position shown in Fig. 8 it will be in its normal final locking position with the door fully closed. At this time it will be noted that the striker tooth 76 will be straddled or embraced by two of the bolt teeth, such as the teeth indicated at *b* and *c*, with the tooth *b* engaging the lower corner 76a of the tooth 76. This rela-

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tive construction of the bolt and striker is important since in most automobile doors, due to the use of compressible outer rubber weatherstripping, the door when slammed frequently moves inwardly a small distance beyond the normal final locking position of the latch due to compression of the rubber weatherstripping. Since the tooth *b* in Fig. 8 is in positive engagement at point 76a with the tooth 76 of the striker when in normal final locking position, further bodily movement of the bolt 26 to the left in Fig. 8, when the door is slammed against the compressible rubber weatherstripping, will impart some turning motion to the bolt and maintain the tooth *c* in contact with the edge 78 of the striker. It will be evident that the door will be positively locked under these conditions or in the normal position shown in Fig. 8. Thus, considerable tolerance is allowed by virtue of the present construction in the final locking position of the bolt 26 with relation to the striker 73.

Cooperable with the upper inclined surface 73a of the striker body 73 is a guide shoe or so-called dovetail member 79 which is secured to the case plate 24, see Figs. 6 and 8, and which projects through a correspondingly shaped opening in the door jamb edge or portion 22. It will be understood that when the door is closed the shoe 79 engages and slides over the inclined surface 73a of the striker body and cooperates with the latch 26 to clamp or hold the door firmly in position against vertical movement during operation of the vehicle.

I claim:

1. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a rotatable latch device mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and including a unitary member having a plurality of arms, one arm extending downwardly from said axis and engageable with the latch device for holding the same in door latching position and a second arm extending upwardly from said axis, outer manually operable means for pivotally actuating said detent means and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means movably mounted on the support and engageable with said link means, and inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation.

2. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a rotatable latch device mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and including a unitary member having a plurality of arms, one arm extending downwardly from said axis and engageable with said latch device for holding the same in door latching position and a second arm extending upwardly from said axis, outer manually operable means

for pivotally actuating said detent means and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, and a vertically shiftable slide on said flange engageable with said link means for pivotally moving the same in a generally vertical direction to position its said part out of operative relation to the said part of said second arm.

3. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a rotatable latch device mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and including a unitary member having a plurality of arms, one arm extending downwardly from said axis and engageable with said latch device for holding the same in door latching position and a second arm extending upwardly from said axis, outer manually operable means for pivotally actuating said detent means and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion and extending therefrom generally horizontally along the inner side of said plate portion in the direction of said flange, said link means having a part normally arranged in operative relation to a part of said second arm and being shiftable in the direction of said flange upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means movably mounted on the support and engageable with said link means, and inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation.

4. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a rotatable latch device mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and including a unitary member having a plurality of arms, one arm extending downwardly from said axis and engageable with said latch device for holding the same in door latching position, a second arm extending upwardly from said axis, and a third arm extending inwardly toward said flange, outer manually operable means for pivotally actuating said detent means and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, a vertically shiftable slide on said flange connected to said link means, means for shifting said slide upwardly to cause the same to pivotally move said link means in a generally vertical direction

to position its said part out of operative relation to said part of said second arm and to position said slide in a raised position, and a manually operable lever on said flange engageable with a part on said slide when in said raised position for shifting the slide downwardly and also at the same time engageable with said third arm for pivotally actuating said detent means to disengage the same from said latch device.

5. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a rotatable latch device mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and including a unitary member having a plurality of arms, one arm extending downwardly from said axis and engageable with said latch device for holding the same in door latching position, a second arm extending upwardly from said axis, and a third arm extending inwardly toward said flange, outer manually operable means for pivotally actuating said detent means and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means movably mounted on the support and including a member movable up and down and engageable with said link means, inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation, and a manually operable lever on said flange engageable with said third arm for pivotally actuating said detent means to disengage the same from said latch device and also at the same time operative to cause movement of said control means and thereby shift said link means and restore said parts to their operative relation.

6. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a rotatable latch device mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and including a unitary member having a plurality of arms, one arm extending downwardly from said axis and engageable with the latch device for holding the same in door latching position and a second arm extending upwardly from said axis, outer manually operable means for pivotally actuating said detent means and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means movably mounted on the support and engageable with said link means, inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation, and a manually operable lever on said flange operative

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to move said control means to shift said link means and restore said parts to their operative relation and also operative at the same time to pivotally actuate said detent means to disengage the same from said latch device.

7. In a door latch mechanism for a swinging door, a support comprising a plate portion for disposition at the door jamb and having a flange extending from the inner edge thereof, a rotatable latch device mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and including a unitary member having a plurality of arms, one arm extending downwardly from said axis and engageable with said latch device for holding the same in door latching position and a second arm extending upwardly from said axis, outer manually operable means for pivotally actuating said detent means and including a lever pivotally mounted on said plate portion and having a portion movable toward said flange upon swinging said lever, link means pivotally mounted on said lever portion and extending therefrom generally horizontally along the inner side of said plate portion in the direction of said flange, said link means having a part normally arranged in operative relation to a part of said second arm and being shiftable in the direction of said flange upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means movably mounted on the support and engageable with said link means, inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation, and a manually operable swingable lever on said flange for pivotally actuating said detent means to disengage the same from said latch device and also operative at the same time for moving said control means to shift said link means and restore said parts to their operative relation.

8. In a latch mechanism for a swinging door, a support, a latch device pivotally mounted on said support, detent means pivotally mounted on the support to swing about a generally horizontal axis and comprising a unitary member having a plurality of rigid arms, one arm extending in one direction from said axis and engageable with the latch device for holding the same in door latching position, a second arm extending in another direction, and a third arm extending in a substantially opposite direction to said one arm, outer manually operable means for pivotally actuating said detent means and including a pivotally mounted lever on said support, link means pivotally connected to said lever and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means movably mounted on the support and engageable with said link means, inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation, and a manually operable lever on said support engageable with said third arm to disengage said detent means from said latch device and also at the same time engageable with said control means to shift the same to restore said parts in operative relation.

9. In a latch mechanism for a swinging door,

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a support, a latch device pivotally mounted on said support, detent means pivotally mounted on the support to swing about a generally horizontal axis and comprising a unitary member having a plurality of rigid arms, one arm extending in one direction from said axis and engageable with the latch device for holding the same in door latching position, a second arm extending in another direction, and a third arm extending in a third direction, outer manually operable means for pivotally actuating said detent means and including a pivotally mounted lever on said support, link means pivotally connected to said lever and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means movably mounted on the support and engageable with said link means, inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation, and a manually operable lever pivotally mounted on said support and engageable with said third arm and operative upon pivotal actuation thereof to effect disengagement of said detent means from said latch device and simultaneous shiftable movement of said link means and control means to restore said parts in operative relation.

10. In a latch mechanism for a swinging door, a support, a latch device pivotally mounted on said support, detent means pivotally mounted on the support to swing about a generally horizontal axis and comprising a unitary member having a plurality of rigid arms, one arm extending in one direction from said axis and engageable with the latch device for holding the same in door latching position, a second arm extending in another direction, and a third arm extending in a third direction, outer manually operable means for pivotally actuating said detent means and including a pivotally mounted lever on said support, link means pivotally connected to said lever and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means mounted on said support and having an up and down movable interlocking connection with one end of said link means, inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation, and a manually operable lever pivotally mounted on said support and engageable with said third arm and operative upon pivotal actuation thereof to effect disengagement of said detent means from said latch device and simultaneous shiftable movement of said link means and control means to restore said parts in operative relation.

11. In a door latch mechanism for a swinging door, a support for disposition at the door jamb and having a plate portion and a flange extending angularly from said plate portion, a latch device pivotally mounted on said plate portion, detent means pivotally mounted on said plate portion to swing about a generally horizontal axis and comprising a unitary member having a plurality of rigid arms, one arm extending in one direction from said axis and engageable with the latch device for holding the same in door latching position, a second arm extending in an-

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other direction, and a third arm extending in a third direction, outer manually operable means for pivotally actuating said detent means and including a pivotally mounted lever on said support, link means pivotally connected to said lever 5 and having a part normally arranged in operative relation to a part of said second arm and being shiftable upon swinging said lever to cause said parts to abut and shift the detent means thereby to disengage the detent means from said latch device, control means movably mounted 10 on the support and engageable with said link means, inner manually operable means for moving said control means to shift said link means to position said parts out of operative relation, 15 and a manually operable lever pivotally mounted on said support and engageable with said third arm and operative upon pivotal actuation thereof to effect disengagement of said detent means from said latch device and simultaneous shiftable movement of said link means and control 20 means to restore said parts in operative relation.

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