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(54) **Door latch system with primary latch and secondary latch openable by primary latch**

Türverriegelungssystem mit einer ersten Falle und einer zweiten, mittels der ersten Falle zu öffnenden Falle

Système de verrouillage de porte avec un pêne principal et un pêne secondaire pouvant être ouvert par le pêne principal

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**EP-A1- 0 022 604 EP-A2- 1 953 317
DE-A1- 10 359 737**

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Description**FIELD OF THE INVENTION**

[0001] The present invention relates to closure latches for vehicle doors, and more particularly to closure latches for tall or wide vehicle doors, such as cargo doors on certain types of vans.

BACKGROUND OF THE INVENTION

[0002] A typical vehicle door has a closure latch that includes a ratchet that captures a striker on the vehicle body during closure of the door so as to hold the door in a closed position. Certain types of vehicle door however, are relatively tall or wide. While the door edge immediately adjacent the ratchet and striker is securely closed against the vehicle body, the portions of the door edge that are relatively far from the ratchet and striker are not as securely closed, and can be compromised either by sufficient force outwards by a load carried inside the vehicle, or by a vehicle thief from outside the vehicle.

[0003] EP 1 953 317 A2 discloses a double latch assembly for a motor vehicle having two pivotably mounted closure members, in which a sequencing lever is used to release first and second pawls used to hold first and second rotatable claws in respective latched positions. A single actuator is used to release both of the pawls but because of the use of a disengageable coupling between the sequencing lever and the second pawl it is ensured that the first pawl is always released before the second pawl. Only a single actuator is required to release both pawls and no sensors are required to control the sequencing of the pawls.

[0004] EP 0 022 604 A1 discloses a dual latching mechanism for latching two spaced locations of a flexible lid to a pair of similarly spaced anchors of a compartment to which the flexible lid is movably mounted. The latching mechanism has two latches mounted on the lid by housings each including a pawl pivotally mounted which is spring biased for movement, when released, to an anchor release position and a blocking dog which is spring biased to a pawl blocking position for locking the pawl to its respective anchor. The latches are interconnected by a latch control which includes two rigid links each link having its outer end connected pivotally to a blocking dog and each having its inner end connected by way of an actuator pin to a key operated lock cylinder which is mounted on the flexible lid. The rigid links are connected so as to maintain axial rigidity for operating the two latches concurrently while having the required flexibility necessary to operate two latches on a flexible lid.

[0005] DE 103 59 737 A1 discloses a motor vehicle locking device with an additional lock including a rotating trap that retraces swivel path of closing link of additional lock and is locked with link when main lock is released.

[0006] It would be beneficial to provide an alternative closure latch system that more securely closes tall and/or

wide vehicle doors, such as cargo doors on vans.

SUMMARY OF THE INVENTION

[0007] Accordingly, the invention is directed to a closure latch system for a vehicle door that is closable against two spaced apart strikers. Closing the door against the two spaced apart strikers permits a vehicle door that is relatively tall or relatively wide to more securely be closed. The closure latch system includes two spaced apart ratchets which are mechanically connected and controlled via a single point. Both ratchets may be opened via a single outside door handle (if provided), or a single inside door handle (if provided), and are lockable and unlockable together (if locking is provided). However, each ratchet is openable and closable independent of the opening/closing state of the other ratchet so that there does not need to be precise timing or synchronization between the opening and closing of the two ratchets relative to each other.

[0008] In particular, the invention is directed to a closure latch system for a vehicle door including a first ratchet, a first pawl, a second ratchet, a second pawl and a common actuator. The first ratchet is movable between a closed position wherein the first ratchet is positioned to retain a first striker and an open position wherein the first ratchet is positioned to permit release of the first striker. The first ratchet is biased towards the open position. The first pawl is movable between a ratchet locking position wherein the first pawl holds the first ratchet in the closed position and a ratchet release position wherein the first pawl permits the first ratchet to move to the open position. The first pawl is biased towards the ratchet locking position. The second ratchet is movable between a closed position wherein the second ratchet is positioned to retain a second striker and an open position wherein the second ratchet is positioned to permit release of the second striker. The second ratchet is biased towards the open position. The second pawl is movable between a ratchet locking position wherein the second pawl holds the second ratchet in the closed position and a ratchet release position wherein the second pawl permits the second ratchet to move to the open position. The second pawl is biased towards the ratchet locking position. The common actuator is movable between a rest position and an actuating position. In the rest position the common actuator permits each of the first pawl and second pawls to move between the ratchet locking and ratchet release positions independent of the other of the first and second pawls. In the actuating position the common actuator drives the first pawl to the ratchet release position and drives the second pawl to the ratchet release position. According to the invention, the common actuator and the first pawl are rotatable about a common axis.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The present invention will now be described by

way of example only with reference to the attached drawings, in which:

Figure 1 is a perspective view of a vehicle with a closure latch system in accordance with an aspect of the invention;

Figure 2a is a perspective view of one side of the closure latch system shown in Figure 1;

Figure 2b is a perspective view of another side of the closure latch system shown in Figure 1;

Figure 2c is a magnified perspective view of a portion of the closure latch system as shown in Figure 2b;

Figures 3a-3d are plan views of the closure latch system shown in Figure 1, illustrating the opening of a first ratchet that is part of the system;

Figures 4a-4d are plan views of the closure latch system shown in Figure 1, illustrating the opening of a second ratchet that is part of the system; and

Figure 5 is a perspective view of the closure latch system shown in Figure 1 with additional components used in its operation.

DETAILED DESCRIPTION OF THE INVENTION

[0010] Reference is made to Figure 1, which shows a closure latch system 10 for a vehicle door 12 of a vehicle 16, in accordance with an embodiment of the present invention. In the embodiment shown in Figure 1 the vehicle door 12 is a cargo door of a van.

[0011] The closure latch system 10 permits the vehicle door 12 to close by engagement of a first ratchet 18 with a first striker 19, and by engagement of a second ratchet 22 with a second striker 23. By providing a closure latch system with first and second ratchets 18 and 22 which are at selected vertical positions on the vehicle door, provides more secure closure of the vehicle door 12. Referring to Figure 2a, the first and second ratchets 18 and 22 are connected by a mechanical linkage that further makes up part of the closure latch system 10 including a first pawl 20, a second pawl 24, a common actuator 26, an outside door release lever 28, an inside door release lever 30 (Figure 5) and a door locking member 32.

[0012] The first ratchet 18 is movable between a closed position (Figure 3a) and an open position (Figure 3d). In the closed position, the first ratchet 18 retains the first striker 19. In the open position (Figure 3d) the first ratchet 18 is unengaged with the first striker 19. A first ratchet biasing member 38 such as a suitable spring may be provided to bias the first ratchet 18 towards the open position.

[0013] The first pawl 20 is movable between a ratchet locking position (Figure 3a) and a ratchet release position

(Figures 3b and 3c). In the ratchet locking position the first pawl 20 holds the first ratchet 18 in the closed position. In the ratchet release position the first pawl 20 permits the first ratchet 18 to move to the open position. A first pawl biasing member 40 (Figure 2a) such as a suitable spring may be provided to bias the pawl 20 towards the ratchet locking position.

[0014] The second ratchet 22 may be similar to the first ratchet 18. The second ratchet 22 is movable between a closed position (Figure 4a) and an open position (Figure 4d). In the closed position, the second ratchet 22 retains the second striker 23. In the open position (Figure 4d) the second ratchet 22 is unengaged with the second striker 23. A second ratchet biasing member 44 such as a suitable spring may be provided to bias the second ratchet 22 towards the open position.

[0015] The second pawl 24 is movable between a ratchet locking position (Figure 4a) and a ratchet release position (Figures 4b and 4c). In the ratchet locking position the second pawl 24 holds the second ratchet 22 in the closed position. In the ratchet release position the second pawl 24 permits the second ratchet 22 to move to the open position. A second pawl biasing member 46 such as a suitable spring may be provided to bias the second pawl 24 towards the ratchet locking position.

[0016] Referring to Figure 2a, the common actuator 26 is operatively connected to both the first and second pawls 20 and 24 to move them to their respective ratchet release positions. In the embodiment shown, the common actuator 26 is a lever that is rotatable about a common actuator axis 48, and is movable between a rest position (Figures 3a, 3d, 4a and 4d), and an actuating position (Figures 3b, 3c, 4b and 4c). A common actuator biasing member 50 such as a suitable spring biases the common actuator 26 towards the rest position.

[0017] As shown most clearly in Figures 2c and 3a, the common actuator 26 contains a pair of slots 52 each of which are oriented about the common actuator axis 48. Each slot 52 is defined by a slot wall 54. The first pawl 20 rotates about the same axis 48 as the common actuator 26, and so the common actuator axis 48 may also be referred to as a common axis, and as a first pawl axis. The first pawl 20 has a pair of slot travelers 56 that are moveable in the slots 52, permitting the first pawl 20 to rotate from the ratchet locking position to the ratchet release position while the common actuator 26 remains in the rest position. It will be understood that, while two slots 52 are preferable, the common actuator 26 could alternatively be provided with one slot 52 and the first pawl 20 could be provided with one slot traveler 56 instead of two. Alternatively, some other number of slots 52 and slot travelers 56 could be provided. The engagement of the slot-travelers 56 and the slots 52 is discussed further below.

[0018] When the first pawl 20 is in the ratchet locking position (Figure 3a), the slot travelers 56 are positioned at one end of the slots 52. Movement of the common actuator 26 to the actuating position, causes the slot wall

54 to drive the slot travelers 56, thereby moving the first pawl 20 to the ratchet release position (Figure 3b). This in turn permits the first ratchet 18 to move from the closed position to the open position (Figure 3c), thereby releasing the first striker 19. When the common actuator 26 is released it returns to its rest position (Figure 3d), which permits the first pawl 20 to come to rest against the open first ratchet 18 under the bias of the first pawl biasing member 40 (Figure 2a).

[0019] The common actuator 26 is connected to the second pawl 24 (Figure 2a) by means of a mechanical linkage 68. The mechanical linkage 68 may be made up of any suitable combination of components. In the embodiment shown in the figures, the linkage 68 includes an intermediate release lever 70 and a cable 74 connected between the release lever 70 and the second pawl 24. The intermediate release lever 70 is engaged directly by the common actuator 26. Movement of the common actuator 26 to the actuating position (Figure 4b) drives the intermediate release lever 70 from a rest position to an actuating position, which in turn pulls the cable 74, which in turn pulls the second pawl 24 to the ratchet release position, which permits the second ratchet 22 to move to the open position (Figure 4c), thereby releasing the second striker 23. An intermediate release lever biasing member 76, such as a suitable spring, biases the intermediate release lever 70 towards its rest position permitting the second pawl 24 to return towards its ratchet locking position under the urging of the second pawl biasing member 46.

[0020] When a person opens the vehicle door 12 (eg. by pulling on the door handle 75 (Figure 1)) they may receive a greater amount of tactile feedback relating to the release of the first ratchet 18 than they receive concerning the second ratchet 22. One or more factors may cause this. For example there may be a more direct connection between the outside door handle 75 and the first ratchet 18 than there is between the door handle 75 and the second ratchet 22. Additionally or alternatively, the first ratchet 18 may be positioned relatively close to the door handle 75, whereas the second ratchet 22 may be positioned relatively far away proximate the top of the door 12. As a result of the greater feedback, a person may have a tendency to pull the door 12 open as soon as they sense the release of the first ratchet 18, since they may be accustomed to opening a typical vehicle door, which only has one ratchet. If the second ratchet 22 were not open when the person pulls on the door 12, their force on the door 12 could in some embodiments prevent the second ratchet 22 from opening. To reduce the likelihood of this from occurring, the movement of the common actuator 26 towards its actuating position causes the second pawl 24 to release the second ratchet 22 before the first pawl 20 releases the first ratchet 18.

[0021] As shown in Figures 2a, 2b and 5, the outside release lever 28 has a pivot connection with an outside link 58, through which it is removably engageable with the common actuator 26. Similarly, the inside release lever

30 (Figure 5) has a pivot connection with an inside link 78, through which it is removably engageable with the common actuator 26. The positions of the outside link 58 and the inside link 30 are controlled by a locking member 80 that passes through them. A first cam portion 82 on the locking member 80 controls the position of the outside link 58. A second cam portion 84 on the locking member 80 controls the position of the inside link 78. When the locking member 80 is in an unlocking position (Figures 2a, 2b and 5), the outside release lever 28 is engageable with the common actuator 26 through the outside link 58 and the inside release lever 30 is engageable with the common actuator 26 through the inside link 78. When the locking member 80 is rotated to a outside locking position, the first cam portion 82 moves the outside link 58 to a disengaged position, which disengages the outside release lever 28 from the common actuator 26. The inside link 64 is unmoved however and thus the inside release lever 30 remains engaged with the common actuator 26. When the locking member 80 is rotated to a double locking position, it the first and second cam portions 82 and 84 move both the outside link 58 and the inside link 64 to disengaged positions, so that both the outside and inside release levers 28 and 30 are disengaged from the common actuator 26. The position of the locking member 80 may be controlled by an electric motor (not shown) or by some other means.

[0022] The outside release lever 28 is movable between a rest position (Figure 3a) and an actuating position (Figure 3b). In the rest position, the outside release lever 28 permits the common actuator 26 to be in its rest position. When the locking member 80 is in the unlocked position, movement of the outside release lever 28 from the rest position to the actuating position drives the common actuator 26 from the rest position (Figure 3a and 4a) to its actuating position (Figures 3b, 3c, 4b and 4c), releasing the first striker 19 from the first ratchet 18 (Figure 3c) and releasing the second striker 23 from the second ratchet 22 (Figure 4c), thereby opening the vehicle door 12. An outside first release lever biasing member 60 (Figure 2a), such as a suitable spring, biases the outside release lever 28 to its rest position. The outside release lever 28 is itself actuatable by the outside door handle 75 (through any suitable direct or indirect connection). When the locking member 80 is in the outside locking or double locking positions (not shown), the movement of the outside release lever 28 to its actuating position does not move the common actuator 26 from its rest position.

[0023] The operation of the inside release lever 30 (Figure 5) may be similar to the operation of the outside release lever 28, although the inside release lever 30 continues to be able to move the common actuator 26 to the actuating position when the locking member 80 is in the outside locking position.

[0024] When the vehicle door 12 is open, the first ratchet 18, the first pawl 20 and the common actuator 26 are in the positions shown in Figure 3d and the second ratchet

et 22, and the second pawl 24 are in the positions shown in Figure 4d. It will be noted that the slot travelers 56 are positioned away from the ends of the slots 52. Closing the vehicle door 12 causes the first and second strikers 19 and 23 to drive the first and second ratchets 22 to their closed positions, not necessarily at precisely the same instant. With the closure latch system 10, closing of either of the first and second ratchets 18 and 22 can take place independent of the position of the other of the first and second ratchets 18 and 22. Moreover, one or both of the first and second ratchets 18 and 22 can be in a secondary closed position (ie. not fully closed) without affecting the position of the other.

[0025] Movement of the first ratchet 18 to and past its closed position by the first striker 19 permits the first pawl 20 to fall into place into its ratchet locking position (Figure 3a). The slots 52 in the common actuator 26 accommodate the movement of the first pawl 20 and so the common actuator 26 remains stationary in its rest position while the first pawl 20 moves to its ratchet locking position. Thus movement of the first ratchet 18 to its closed position does not generate movement of the common actuator 26 away from its rest position.

[0026] When the second ratchet 22 is in the open position, there is some slack in the cable 74 connecting the intermediate release lever 70 and the second pawl 24. Movement of the second ratchet 22 to and past its closed position by the second striker 19 permits the second pawl 24 to fall into place into its ratchet locking position (Figure 4a), which removes the slack in the cable 74 but does not move the intermediate release lever 70 significantly in the embodiment shown. Regardless of whether elimination of slack in the cable 74 causes the intermediate release lever 70 to move or not, however, it does not generate movement in the common actuator 26 away from its rest position. Accordingly, movement of the second ratchet 22 to its closed position does not generate movement of the common actuator away from its rest position. As a result, the first and second ratchets 18 and 22 may individually be closed independent of the position of the other of the first and second ratchets 18 and 22.

[0027] While the above description constitutes a plurality of embodiments of the present invention, it will be appreciated that the present invention is susceptible to further modification and change without departing from the scope of the invention as defined by the accompanying claims.

Claims

1. A closure latch system (10) for a vehicle door (12), comprising:

a first ratchet (18) movable between a closed position wherein the first ratchet (18) is positioned to retain a first striker (19) and an open position wherein the first ratchet (18) is posi-

tioned to permit release of the first striker (19), wherein the first ratchet (18) is biased towards the open position;

a first pawl (20) movable between a ratchet locking position wherein the first pawl (20) holds the first ratchet (18) in the closed position and a ratchet release position wherein the first pawl (20) permits the first ratchet (18) to move to the open position, and wherein the first pawl (20) is biased towards the ratchet locking position;

a second ratchet (22) movable between a closed position wherein the second ratchet (22) is positioned to retain a second striker (23) and an open position wherein the second ratchet (22) is positioned to permit release of the second striker (23), wherein the second ratchet (22) is biased towards the open position;

a second pawl (24) movable between a ratchet locking position wherein the second pawl (24) holds the second ratchet (22) in the closed position and a ratchet release position wherein the second pawl (24) permits the second ratchet (22) to move to the open position, and wherein the second pawl (24) is biased towards the ratchet locking position; and

a common actuator (26) movable between a rest position and an actuating position, wherein in the rest position the common actuator (26) permits each of the first pawl (20) and second pawls (24) to move between the ratchet locking and ratchet release positions independent of the other of the first and second pawls (20, 24), and wherein in the actuating position the common actuator (26) drives the first pawl (20) to the ratchet release position and drives the second pawl (24) to the ratchet release position, **characterised in that** the common actuator (26) and the first pawl (20) are rotatable about a common axis (48).

2. The closure latch system (10) as claimed in claim 1, wherein movement of the common actuator (26) to the actuating position drives the second pawl (24) to the ratchet release position prior to driving the first pawl (20) to the ratchet release position.
3. The closure latch system (10) as claimed in claim 1, wherein the common actuator (26) has a slot (52) that is oriented about the common axis (48) and that is defined by a slot wall (54), and wherein the first pawl (20) has a slot-traveler (56) moveable in the slot (52) between the ratchet locking and ratchet release positions, and wherein the slot (52) traveler is drivable by the slot wall (54) to the ratchet release position during movement of the common actuator (26) to the actuating position.
4. The closure latch system (10) as claimed in claim 3,

further comprising a release lever (28) positionable in a rest position and an actuating position, wherein when the release lever (28) is in the rest position the common actuator (26) is permitted to be in the rest position and when the release lever (28) is in the actuating position the common actuator (26) is driven to the actuating position.

5. The closure latch system (10) as claimed in claim 4, wherein the release lever (28) is removably engageable with the common actuator (26) through a link (58), wherein the closure latch system (10) further includes a locking member (80) positionable in an unlocking position and a locking position, wherein in the unlocking position the locking member (80) permits engagement of the release lever (28) through the link (58) and wherein in the locking position the locking member (80) moves the link (58) to disengage the release lever (28) with the common actuator (26).
6. The closure latch system (10) as claimed in claim 5, wherein the locking position is an outside locking position and wherein the release lever (28) is an outside release lever, and wherein the closure latch system (10) further comprises an inside release lever (30) positionable in a rest position and an actuating position, wherein when the inside release lever (30) is in the rest position the common actuator (26) is permitted to be in the rest position and when the inside release lever (30) is in the actuating position the common actuator (26) is driven to the actuating position, and wherein the locking member (80) is further positionable in a double locking position wherein the locking member (80) disengages the outside release lever (28) and the inside release lever (30) from the common actuator (26).
7. The closure latch system (10) as claimed in claim 4, further comprising an intermediate release lever (70) that is engageable by the common actuator (26), and that is connected to the second pawl (24) by a cable (74).

Patentansprüche

1. Schließverriegelungssystem (10) für eine Fahrzeugtür (12), umfassend:

eine erste Ratsche (18), die zwischen einer geschlossenen Position, in der die erste Ratsche (18) so positioniert ist, dass ein erster Schließbolzen (19) zurückgehalten wird, und einer offenen Position bewegbar ist, in der die erste Ratsche (18) so positioniert ist, dass Freigabe des ersten Schließbolzens (19) ermöglicht wird,

wobei die erste Ratsche (18) zu der offenen Position vorgespannt ist;

eine erste Sperrklinke (20), die zwischen einer Ratschensperrposition, in der die erste Sperrklinke (20) die erste Ratsche (18) in der geschlossenen Position hält, und einer Ratschenfreigabeposition bewegbar ist, in der die erste Sperrklinke (20) ermöglicht, dass sich die erste Ratsche (18) in die offene Position bewegt, und wobei die erste Sperrklinke (20) in Richtung der Ratschensperrposition vorgespannt ist;

eine zweite Ratsche (22), die zwischen einer geschlossenen Position, in der die zweite Ratsche (22) so positioniert ist, dass ein zweiter Schließbolzen (23) zurückgehalten wird, und einer offenen Position bewegbar ist, in der die zweite Ratsche (22) so positioniert ist, dass Freigabe des zweiten Schließbolzens (23) ermöglicht wird, wobei die zweite Ratsche (22) zu der offenen Position vorgespannt ist;

eine zweite Sperrklinke (24), die zwischen einer Ratschensperrposition, in der die zweite Sperrklinke (24) die zweite Ratsche (22) in der geschlossenen Position hält, und einer Ratschenfreigabeposition bewegbar ist, in der die zweite Sperrklinke (24) ermöglicht, dass sich die zweite Ratsche (22) in die offene Position bewegt, und wobei die zweite Sperrklinke (24) in Richtung der Ratschensperrposition vorgespannt ist; und einen gemeinsamen Aktor (26), der zwischen einer Ruheposition und einer Betätigungsposition bewegbar ist, wobei der gemeinsame Aktuator (26) in der Ruheposition ermöglicht, dass sich jede von der ersten Sperrklinke (20) und der zweiten Sperrklinke (24) zwischen der Ratschensperrposition und der Ratschenfreigabeposition unabhängig von der anderen der ersten und zweiten Sperrklinken (20, 24) bewegt, und wobei der gemeinsame Aktor (26) in der Betätigungsposition die erste Sperrklinke (20) in die Sperrklinkenfreigabeposition treibt und die zweite Sperrklinke (24) in die Sperrklinkenfreigabeposition treibt,

dadurch gekennzeichnet, dass der gemeinsame Aktor (26) und die erste Sperrklinke (20) um eine gemeinsame Achse (48) rotierbar sind.

2. Schließverriegelungssystem (10) nach Anspruch 1, wobei Bewegung des gemeinsamen Aktors (26) in die Betätigungsposition die zweite Sperrklinke (24) in die Ratschenfreigabeposition treibt, bevor die erste Sperrklinke (20) in die Ratschenfreigabeposition getrieben wird.
3. Schließverriegelungssystem (10) nach Anspruch 1, wobei der gemeinsame Aktor (26) einen Schlitz (52) aufweist, der um die gemeinsame Achse (48) orientiert ist, und der durch eine Schlitzwand (54) definiert

ist, und wobei die erste Sperrklinke (20) eine Schlitzlaufkatze (56) aufweist, die in dem Schlitz (52) zwischen der Ratschensperrposition und der Ratschenfreigabeposition bewegbar ist, und wobei die Schlitzlaufkatze (52) während der Bewegung des gemeinsamen Aktors (26) zu der Betätigungsposition durch die Schlitzwand (54) antreibbar ist.

4. Schließverriegelungssystem (10) nach Anspruch 3, ferner umfassend einen Freigabehebel (28), der in einer Ruheposition und einer Betätigungsposition positionierbar ist, wobei, wenn der Freigabehebel (28) sich in der Ruheposition befindet, zugelassen wird, dass sich der gemeinsame Aktor (26) in der Ruheposition befindet, und wenn der Freigabehebel (28) sich in der Betätigungsposition befindet, der gemeinsame Aktor (26) in die Betätigungsposition getrieben wird.
5. Schließverriegelungssystem (10) nach Anspruch 4, wobei der Freigabehebel (28) mit dem gemeinsamen Aktor (26) über ein Glied (58) entferntbar koppelbar ist, wobei das Schließverriegelungssystem (10) ferner ein Sperrelement (80) einschließt, das in einer Entsperrposition und einer Sperrposition positionierbar ist, wobei das Sperrelement (80) in der Entsperrposition Kopplung des Freigabehebels (28) über das Glied (58) zulässt, und wobei das Sperrelement (80) in der Sperrposition das Glied (58) bewegt, um den Freigabehebel (28) von dem gemeinsamen Aktor (26) zu entkoppeln.
6. Schließverriegelungssystem (10) nach Anspruch 5, wobei die Sperrposition eine Außenseitensperrposition ist, und wobei der Freigabehebel (28) ein Außenseitenfreigabehebel ist, und wobei das Schließverriegelungssystem (10) ferner einen Innenseitenfreigabehebel (30) umfasst, der in einer Ruheposition und einer Betätigungsposition positionierbar ist, wobei, wenn der Innenseitenfreigabehebel (30) sich in der Ruheposition befindet, zugelassen wird, dass der gemeinsame Aktor (26) in der Ruheposition ist, und wenn der Innenseitenfreigabehebel (30) sich in der Betätigungsposition befindet, der gemeinsame Aktor (26) in die Betätigungsposition getrieben wird, und wobei das Sperrelement (80) ferner in einer doppelten Sperrposition positionierbar ist, wobei das Sperrelement (80) den Außenseitenfreigabehebel (28) und den Innenseitenfreigabehebel (30) von dem gemeinsamen Aktor (26) entkoppelt.
7. Schließverriegelungssystem (10) nach Anspruch 4, ferner umfassend einen Zwischenfreigabehebel (70), der mit dem gemeinsamen Aktor (26) koppelbar ist, und der über ein Kabel (74) mit der zweiten Sperrklinke (24) verbunden ist.

Revendications

1. Système de verrouillage de fermeture (10) pour une porte de véhicule (12), comprenant :

un premier cliquet (18) déplaçable entre une position fermée dans laquelle le premier cliquet (18) est positionné pour retenir un premier percuteur (19) et une position ouverte dans laquelle le premier cliquet (18) est positionné pour permettre un relâchement du premier percuteur (19), dans lequel le premier cliquet (18) est sollicité vers la position ouverte ;

un premier loquet (20) déplaçable entre une position de blocage de cliquet dans laquelle le premier loquet (20) retient le premier cliquet (18) dans la position fermée et une position de relâchement de cliquet dans laquelle le premier loquet (20) permet au premier cliquet (18) de se déplacer à la position ouverte, et dans lequel le premier loquet (20) est sollicité vers la position de blocage de cliquet ;

un second cliquet (22) déplaçable entre une position fermée dans laquelle le second cliquet (22) est positionné pour retenir un second percuteur (23) et une position ouverte dans laquelle le second cliquet (22) est positionné pour permettre un relâchement du second percuteur (23), dans lequel le second cliquet (22) est sollicité vers la position ouverte ;

un second loquet (24) déplaçable entre une position de blocage de cliquet dans laquelle le second loquet (24) retient le second cliquet (22) dans la position fermée et une position de relâchement de cliquet dans laquelle le second loquet (24) permet au second cliquet (22) de se déplacer à la position ouverte, et dans lequel le second loquet (24) est sollicité vers la position de blocage de cliquet ; et

un actionneur commun (26) déplaçable entre une position de repos et une position d'actionnement, dans lequel, dans la position de repos, l'actionneur commun (26) permet à chacun du premier loquet (20) et du second loquet (24) de se déplacer entre la position de blocage de cliquet et la position de relâchement de cliquet indépendamment de l'autre du premier et du second loquet (20, 24), et dans lequel, dans la position d'actionnement, l'actionneur commun (26) entraîne le premier loquet (20) à la position de relâchement de cliquet et entraîne le second loquet (24) à la position de relâchement de cliquet,

caractérisé en ce que l'actionneur commun (26) et le premier loquet (20) sont capables de rotation autour d'un axe commun (48).

2. Système de verrouillage de fermeture (10) selon la

- revendication 1, dans lequel le mouvement de l'actionneur commun (26) à la position d'actionnement entraîne le second loquet (24) à la position de relâchement de cliquet avant d'entraîner le premier loquet (20) à la position de relâchement de cliquet. 5
3. Système de verrouillage de fermeture (10) selon la revendication 1, dans lequel l'actionneur commun (26) a une fente (52) qui est orientée autour de l'axe commun (48) et qui est définie par une paroi de fente (54), et dans lequel le premier loquet (20) comprend un curseur de fente (56) déplaçable dans la fente (52) entre la position de blocage de cliquet et la position de relâchement de cliquet, et dans lequel le curseur de fente (52) est susceptible d'être entraîné par la paroi de fente (54) à la position de relâchement de cliquet pendant le mouvement de l'actionneur commun (26) à la position d'actionnement. 10 15
4. Système de verrouillage de fermeture (10) selon la revendication 3, comprenant en outre un levier de relâchement (28) susceptible d'être positionné dans une position de repos et dans une position d'actionnement, dans lequel, quand le levier de relâchement (28) est dans la position de repos, l'actionneur commun (26) est autorisé à se trouver dans la position de repos et, quand le levier de relâchement (28) est dans la position d'actionnement, l'actionneur commun (26) est entraîné à la position d'actionnement. 20 25 30
5. Système de verrouillage de fermeture (10) selon la revendication 4, dans lequel le levier de relâchement (28) est susceptible d'être engagé de manière amovible avec l'actionneur commun (26) via un bras de liaison (58), dans lequel le système de verrouillage de fermeture (10) inclut en outre un élément de blocage (80) susceptible d'être positionné dans une position de déblocage et dans une position de blocage, dans lequel, dans la position de déblocage, l'élément de blocage (80) permet l'engagement du levier de relâchement (28) via le bras de liaison (58) et dans lequel, dans la position de blocage, l'élément de blocage (80) déplace le bras de liaison (58) pour dégager le levier de relâchement (28) avec l'actionneur commun (26). 35 40 45
6. Système de verrouillage de fermeture (10) selon la revendication 5, dans lequel la position de blocage est une position de blocage extérieure, et dans lequel le levier de relâchement (28) est un levier de relâchement extérieur, et dans lequel le système de verrouillage de fermeture (10) comprend en outre un levier de relâchement intérieur (30) susceptible d'être positionné dans une position de repos et dans une position d'actionnement, dans lequel, quand le levier de relâchement intérieur (30) est dans la position de repos, l'actionneur commun (26) est autorisé à se trouver dans la position de repos et, quand 50 55
- le levier de relâchement intérieur (30) est dans la position d'actionnement, l'actionneur commun (26) est entraîné à la position d'actionnement, et dans lequel l'élément de blocage (80) est en outre susceptible d'être positionné dans une position de double blocage dans laquelle l'élément de blocage (80) dégage le levier de relâchement extérieur (28) et le levier de relâchement intérieur (30) depuis l'actionneur commun (26).
7. Système de verrouillage de fermeture (10) selon la revendication 4, comprenant en outre un levier de relâchement intermédiaire (70) qui peut être engagé par l'actionneur commun (26), et qui est connecté au second loquet (24) par un câble (74).

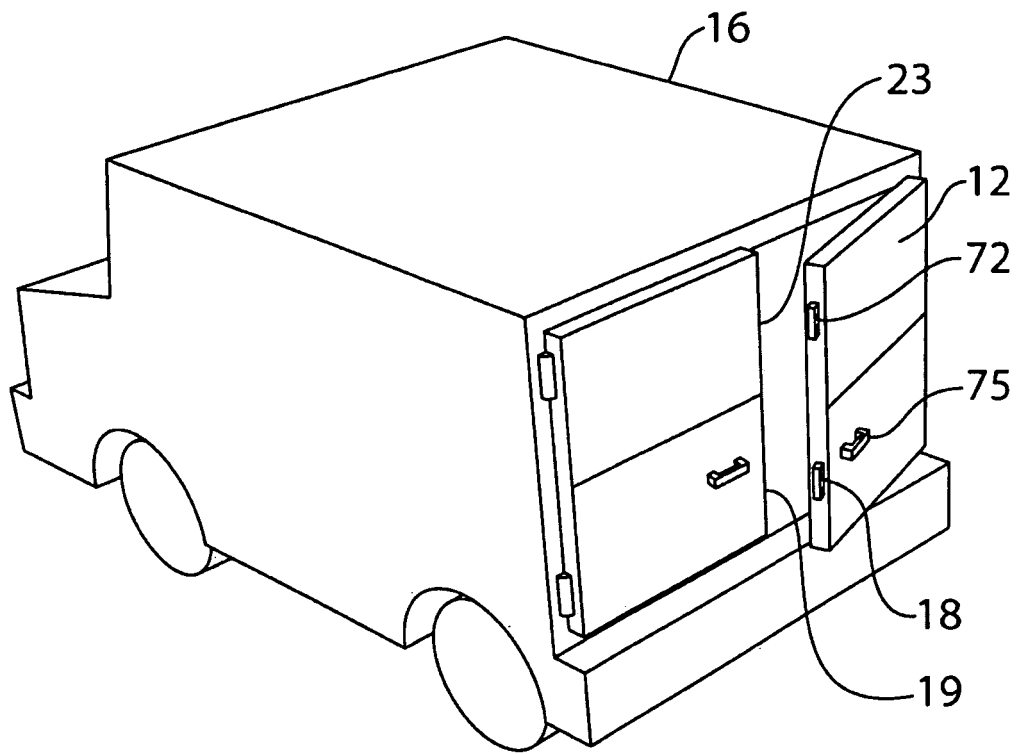


FIG. 1

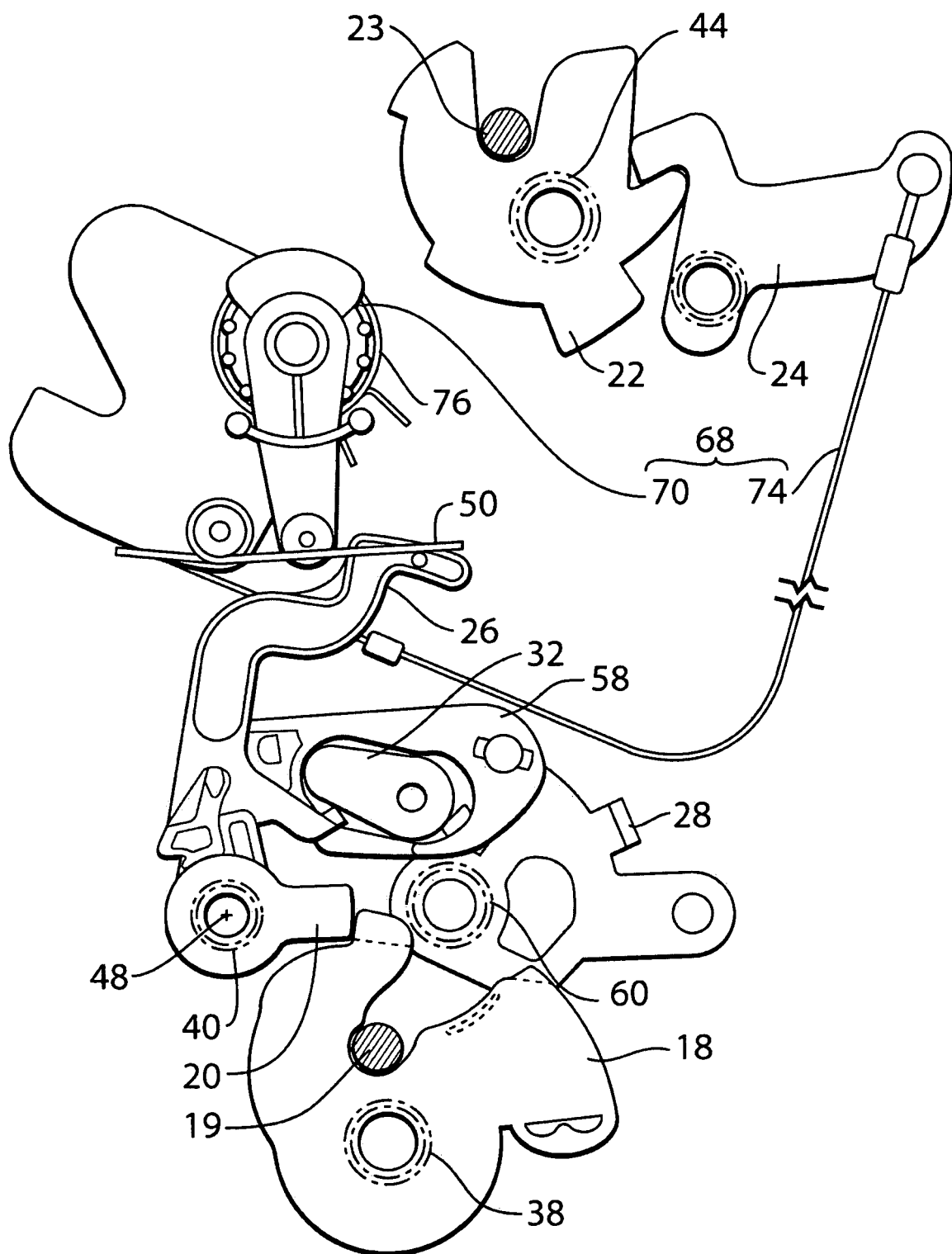


FIG. 2a

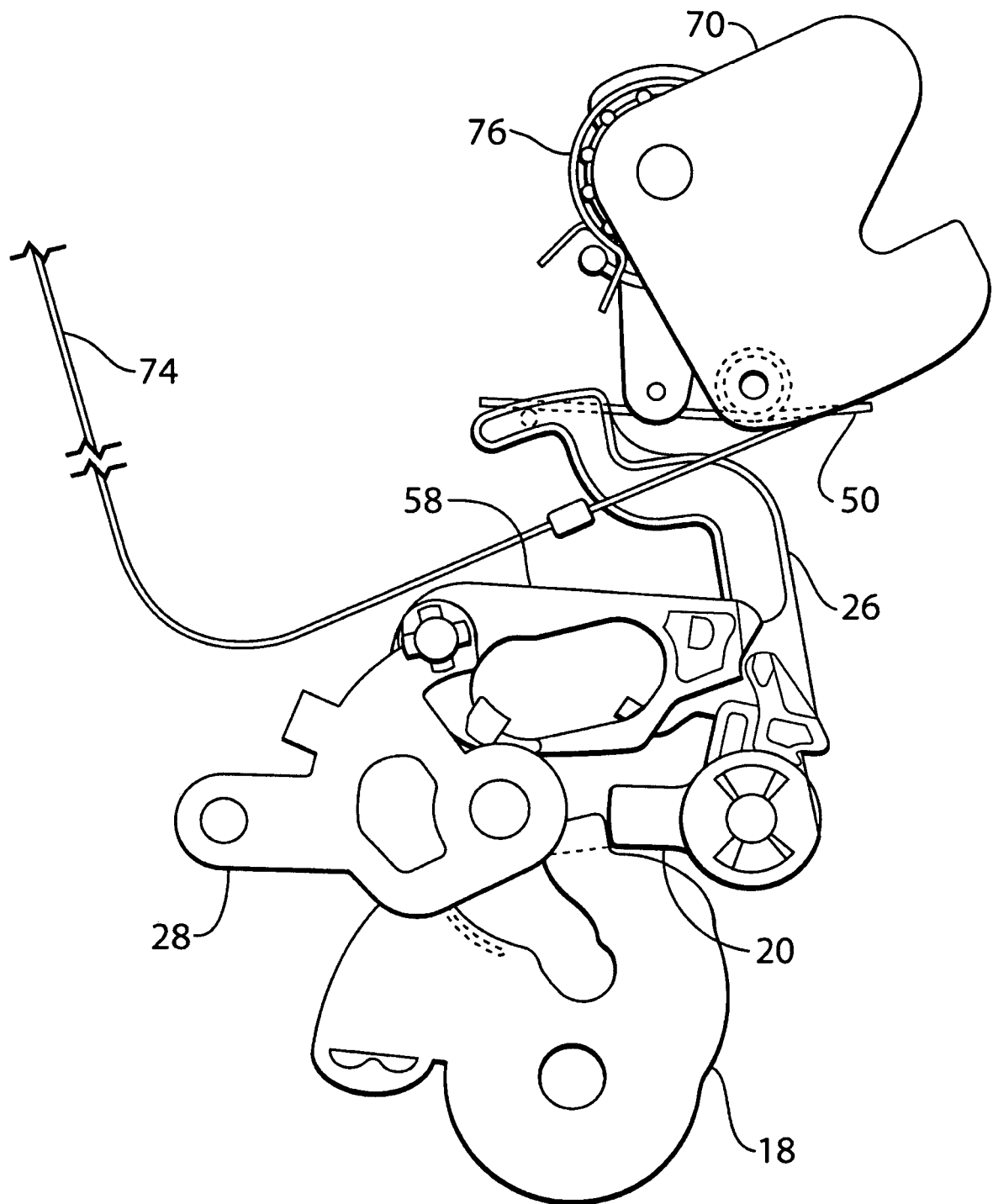


FIG. 2b

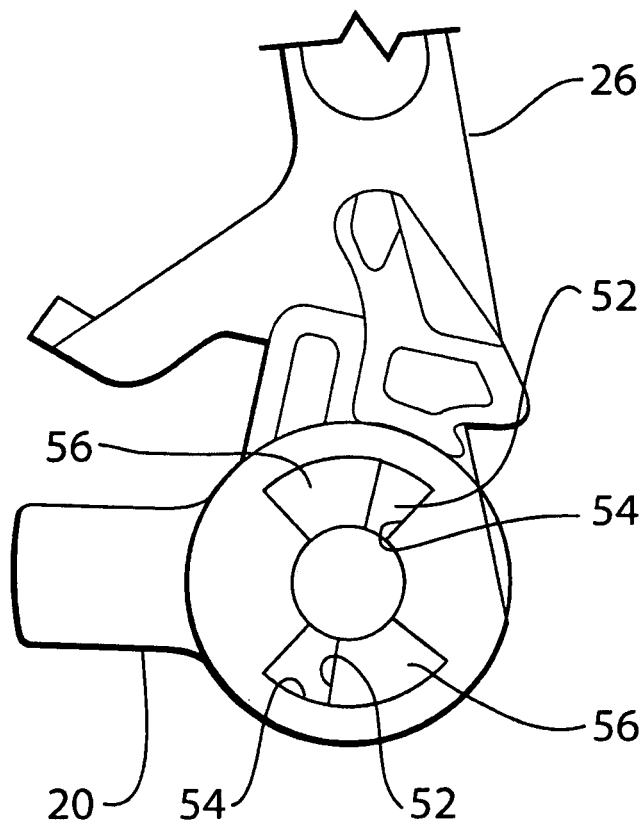


FIG. 2c

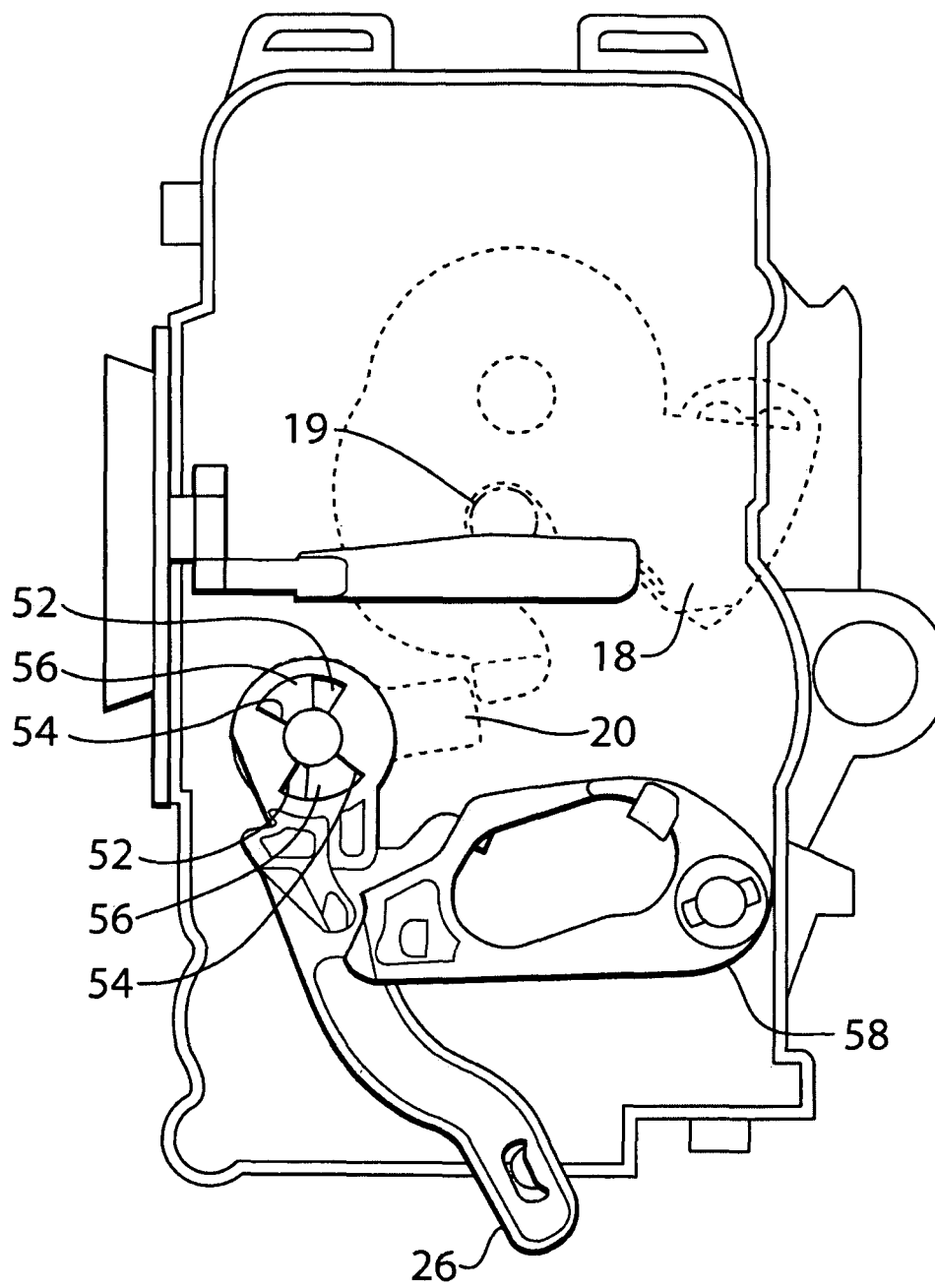


FIG. 3a

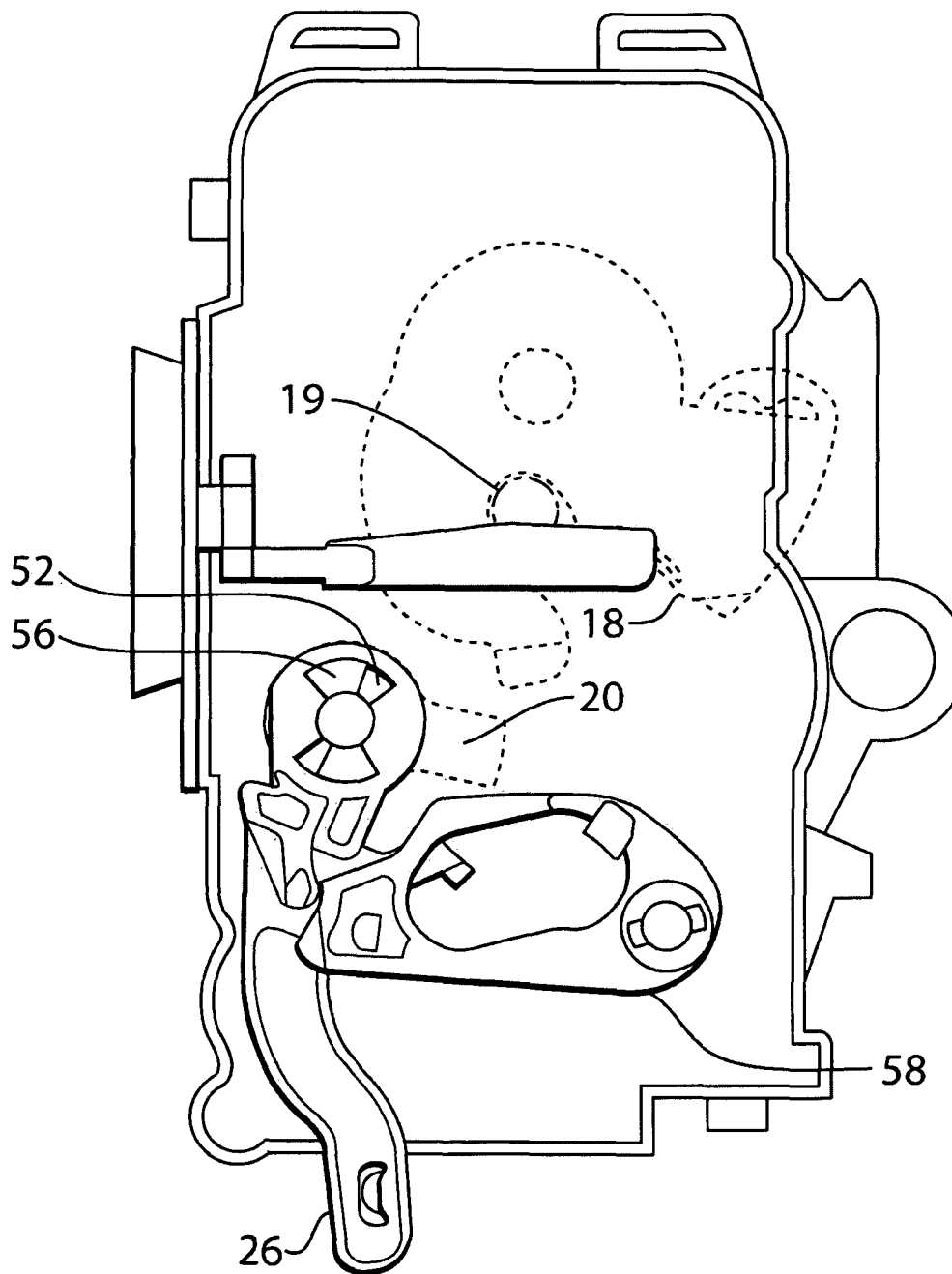


FIG. 3b

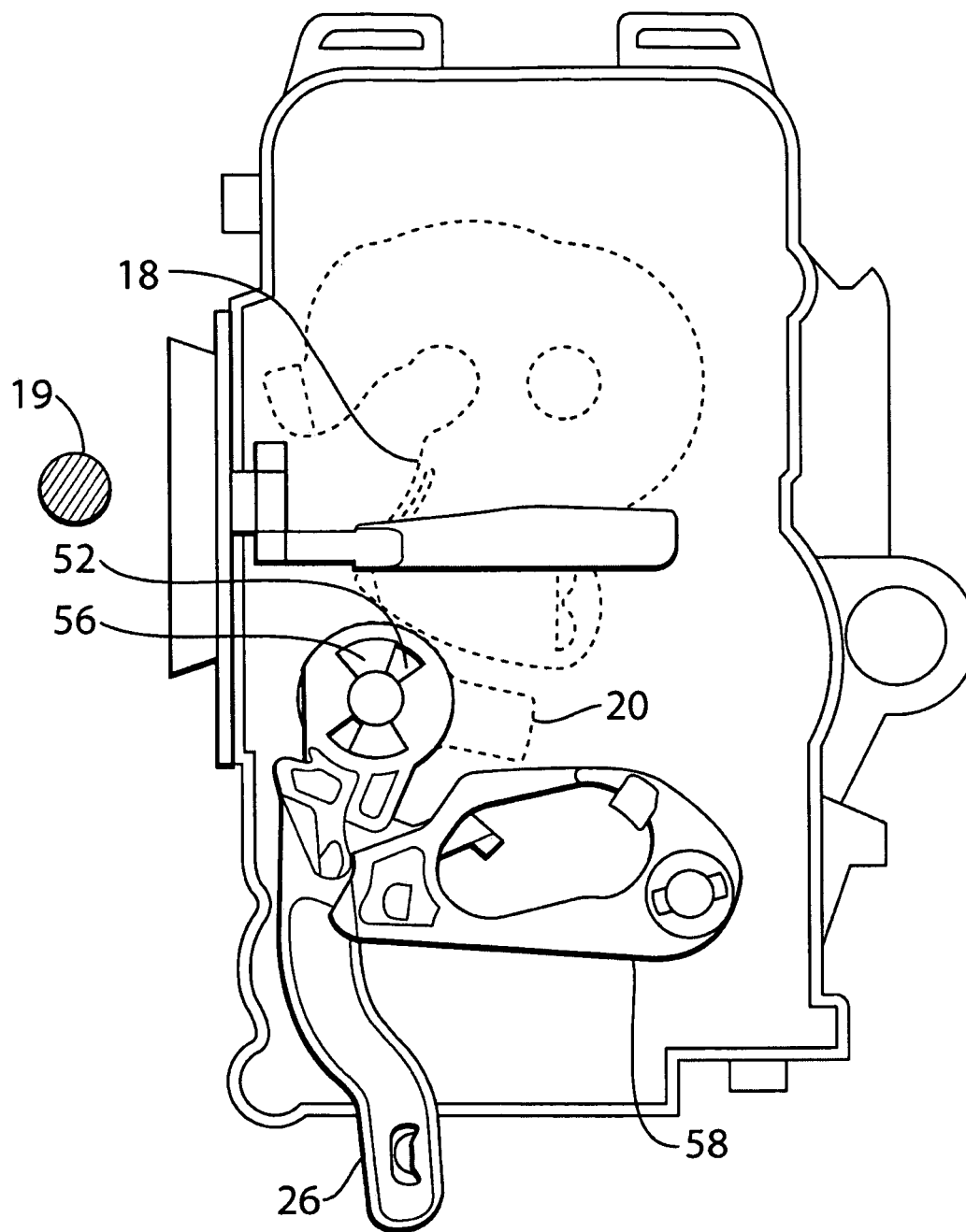


FIG. 3c

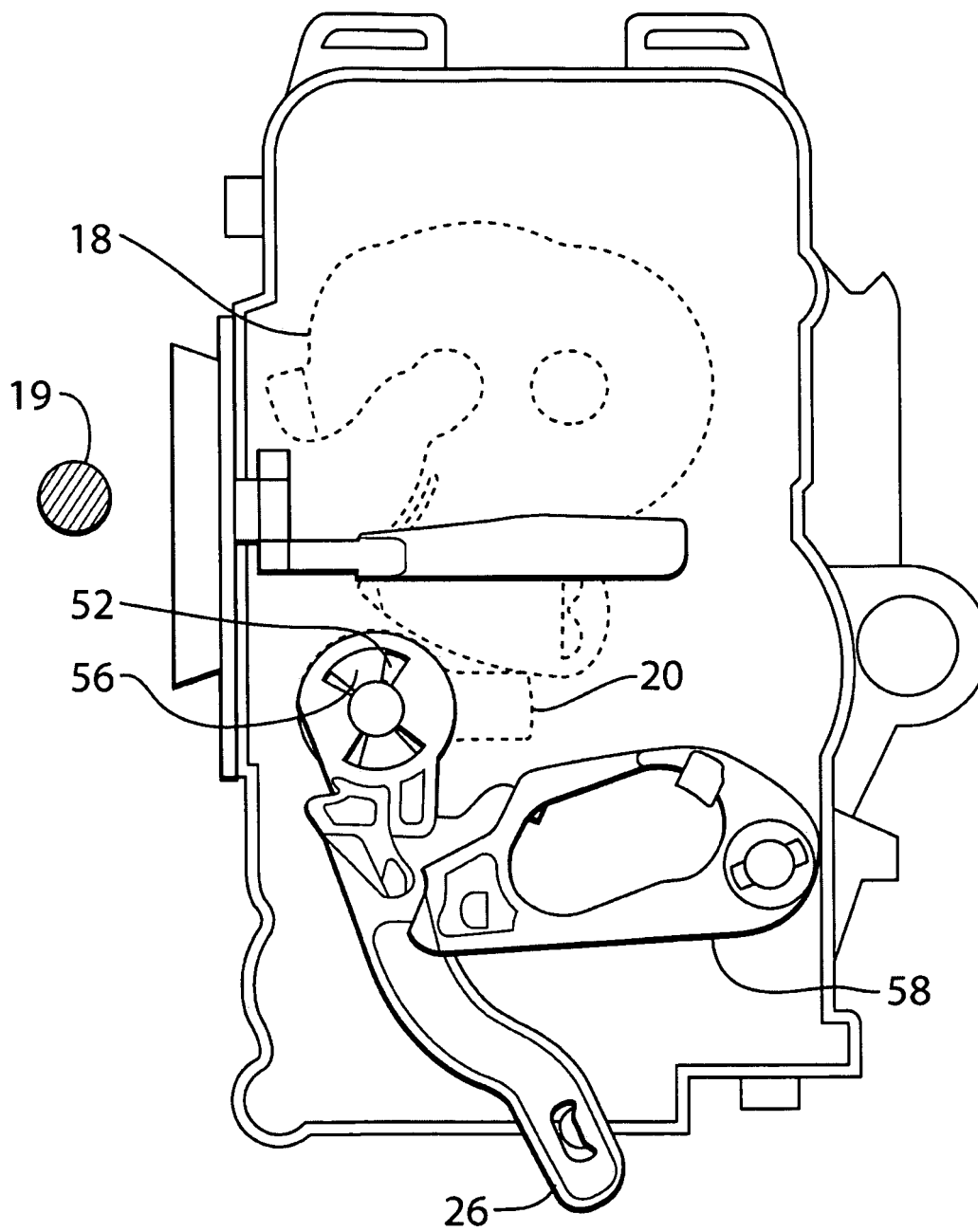


FIG. 3d

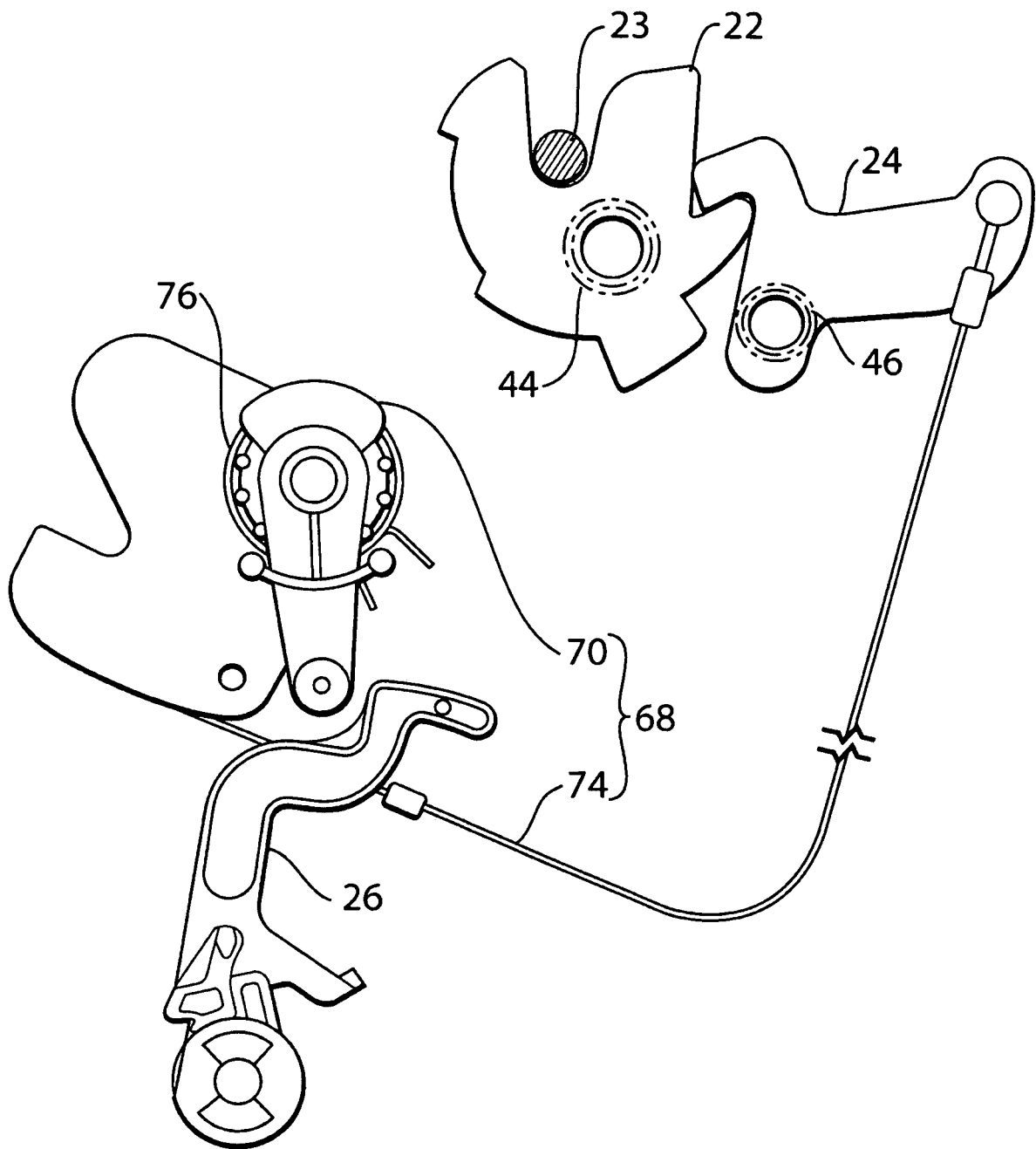


FIG. 4a

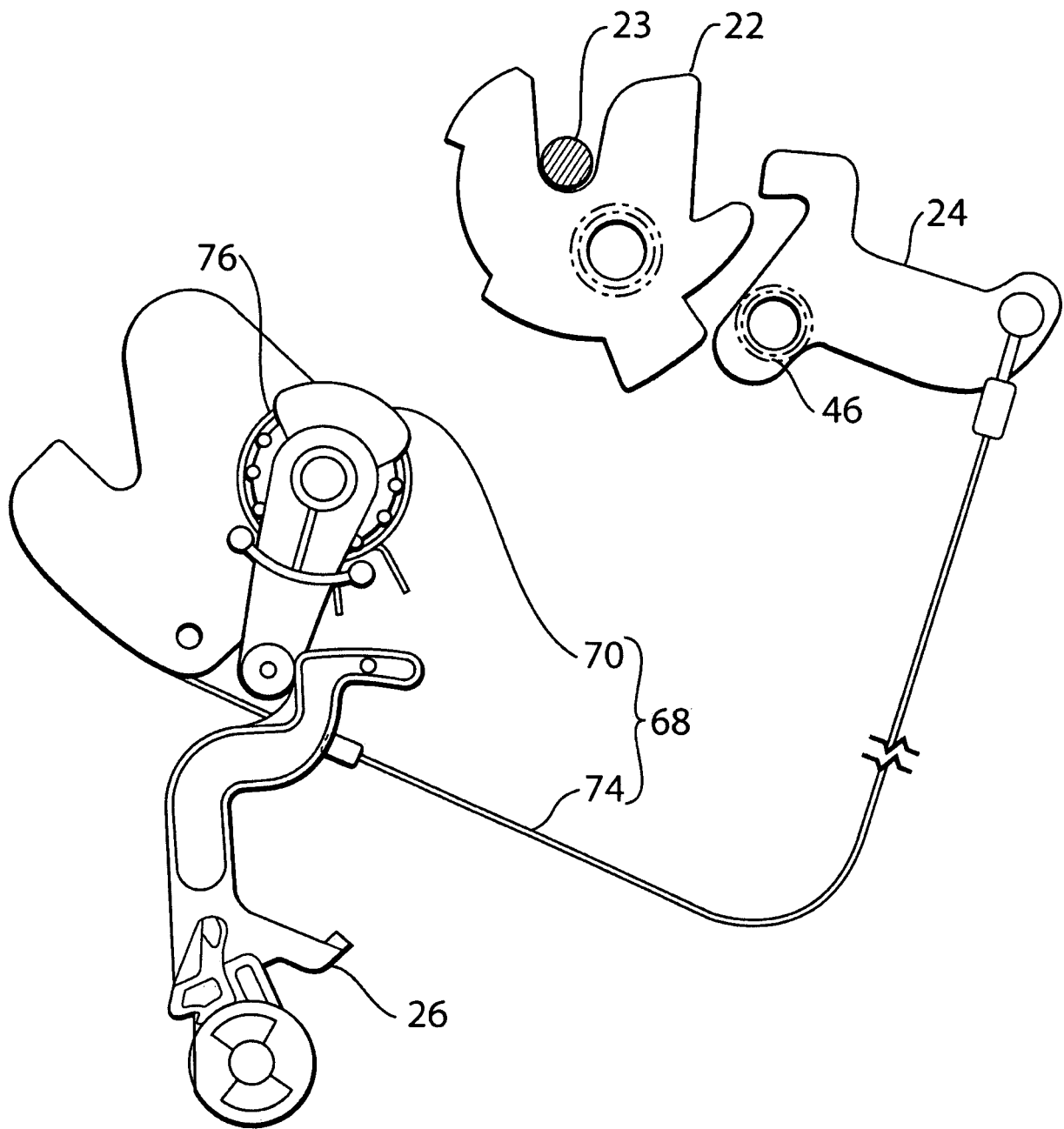


FIG. 4b

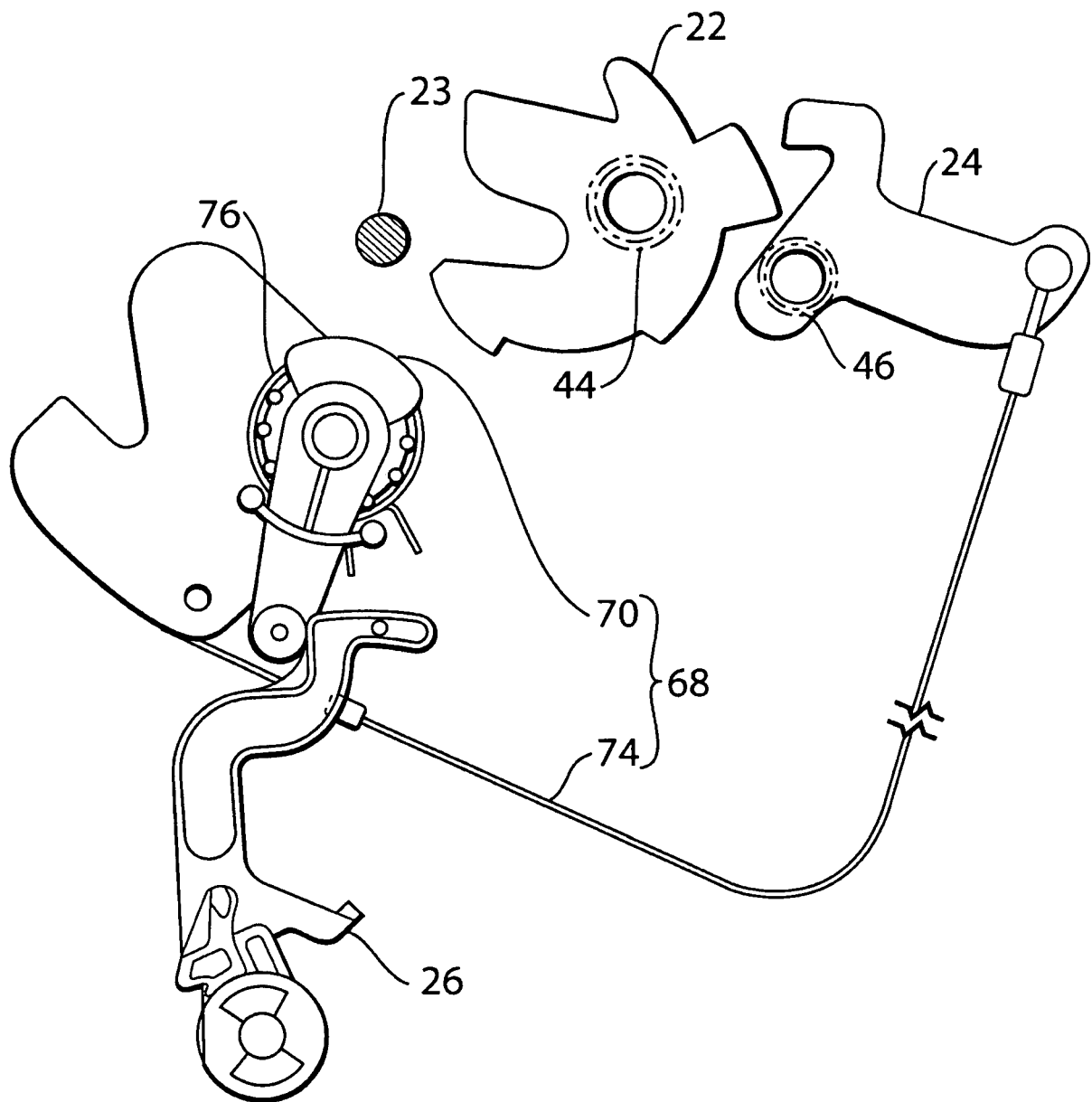


FIG. 4c

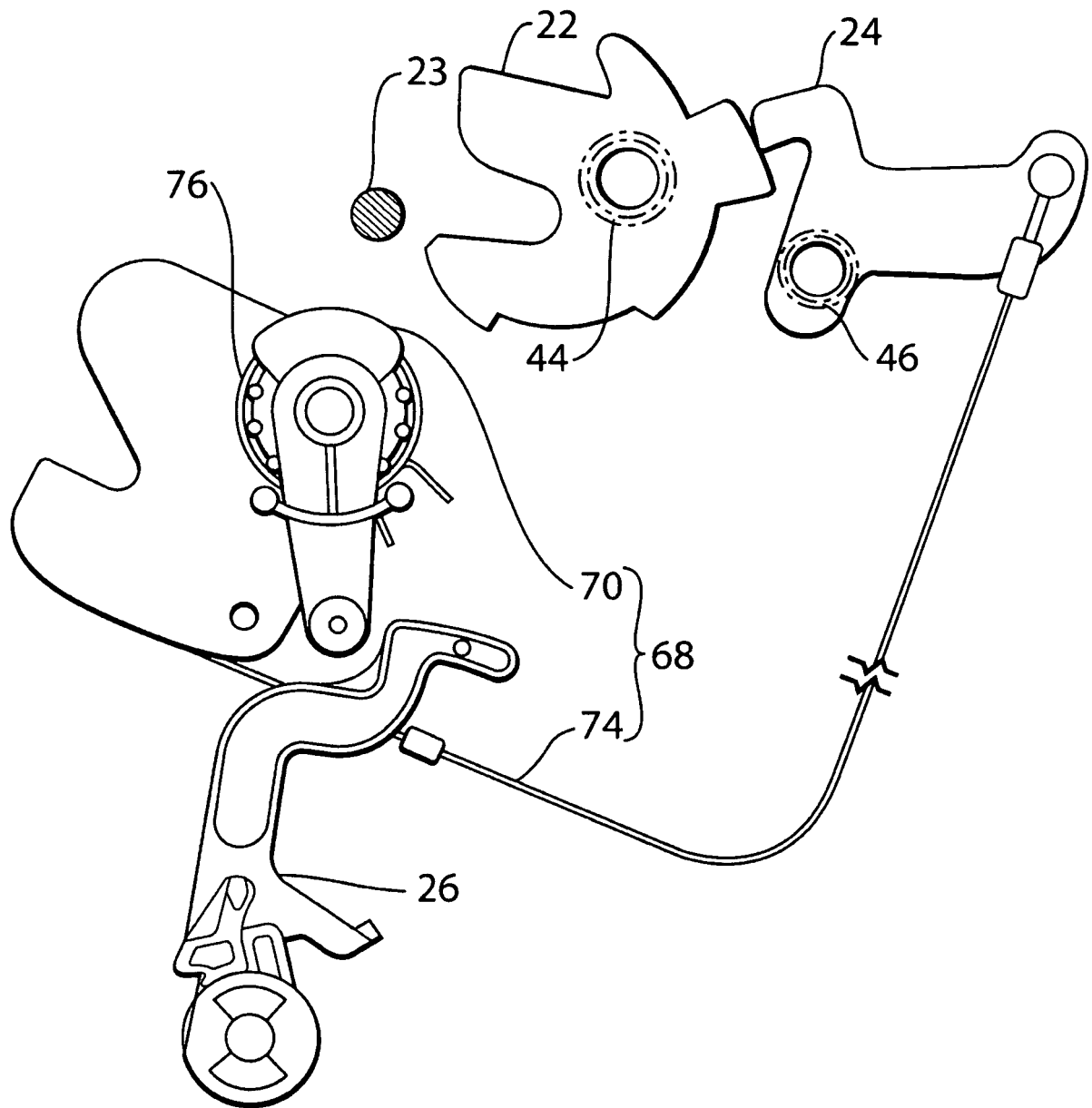


FIG. 4d

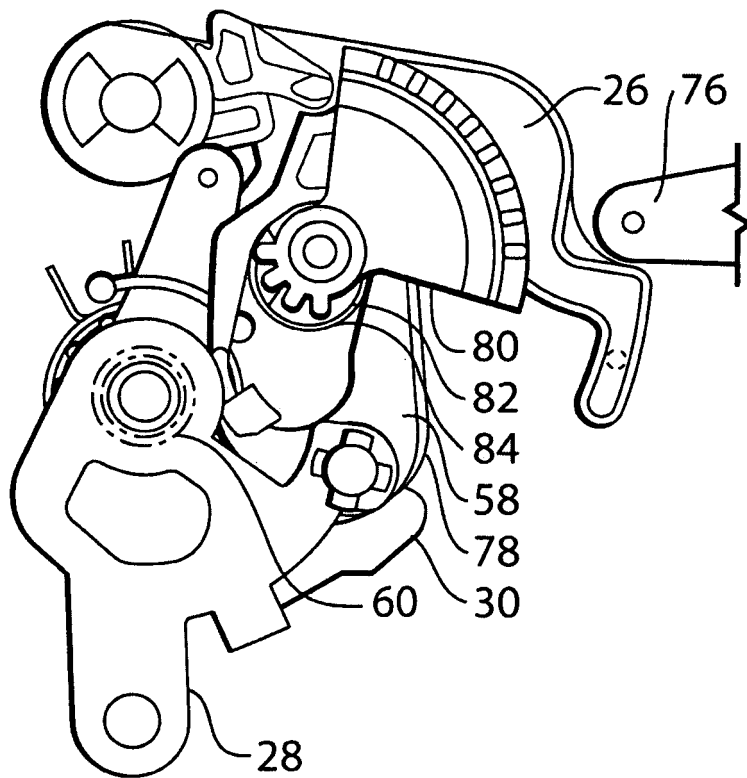


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

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