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PATENTED APR. 9, 1907.

D. L. MINIER.
RAILWAY CAR.
APPLICATION FILED NOV. 7, 1906.

2 SHEETS—SHEET 2.

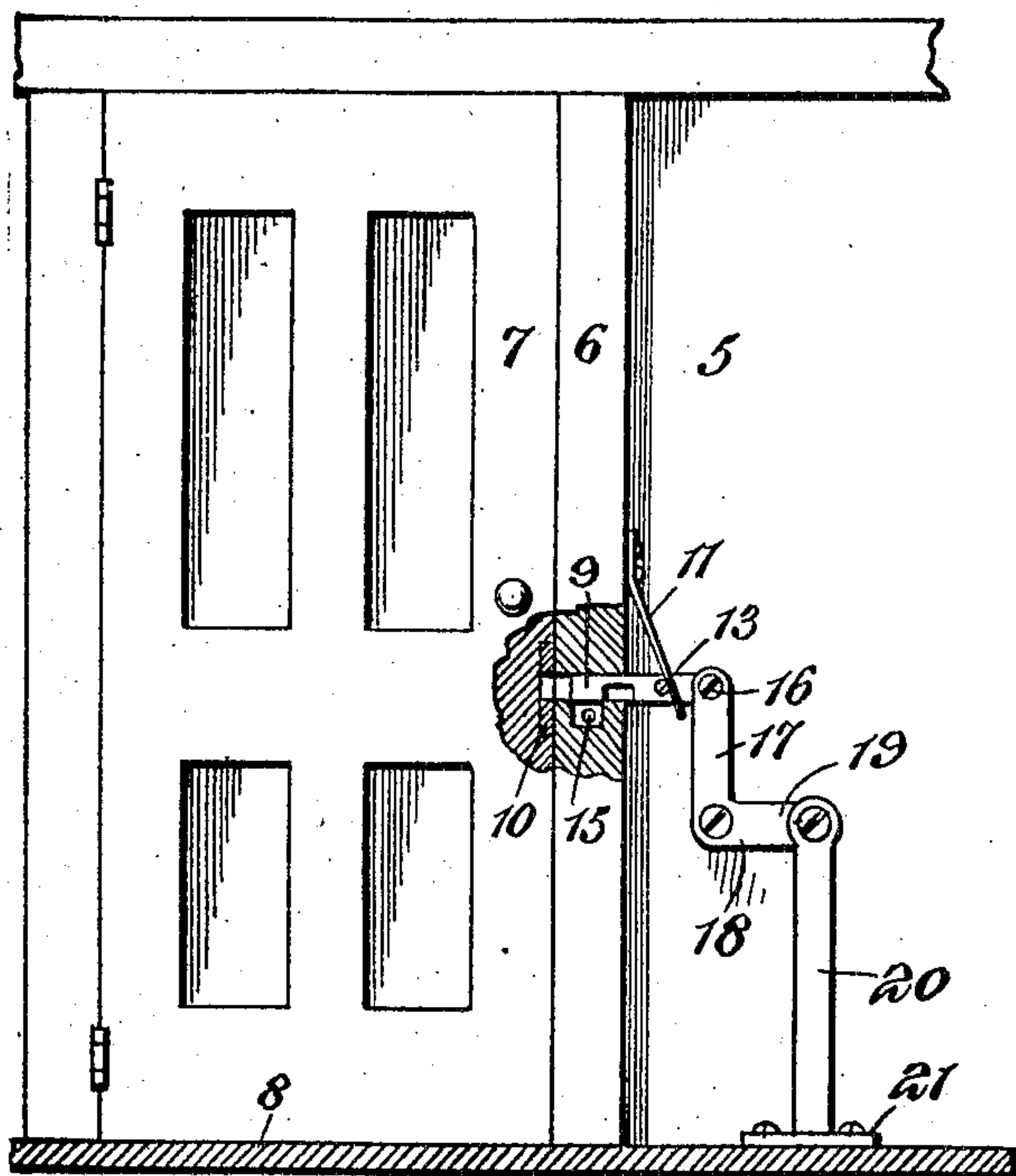


Fig. 3.

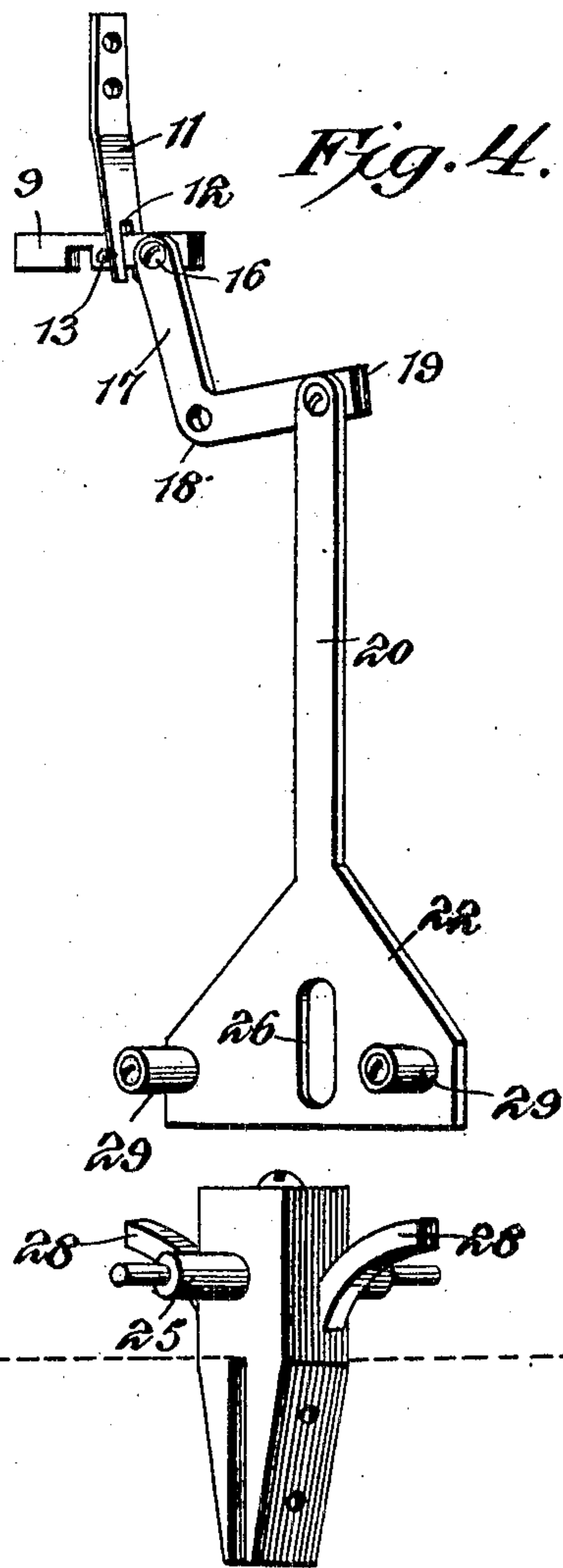


Fig. 4.

Witnesses
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RAILWAY-CAR.

No. 849,411.

Specification of Letters Patent.

Patented April 9, 1907.

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To all whom it may concern:

Be it known that I, DAVID L. MINIER, a citizen of the United States, residing at Ithaca, in the county of Tompkins and State of New York, have invented a new and useful Railway-Car, of which the following is a specification.

It is the usual custom to lock the doors of toilet-rooms when the trains approach stations and to unlock them after leaving the same; but this is often overlooked by the members of the train crew.

One of the principal objects is to provide automatic means of a simple, novel, and practical nature that will lock said doors while the cars are at a standstill and will automatically maintain the same unlocked while the cars are in motion.

While the invention is particularly applicable to railway-cars, it will be evident that it may be employed wherever found convenient or desirable on vehicles of other types.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a section through a portion of a car, showing a door and the novel locking means applied thereto. Fig. 2 is a sectional view at right angles to Fig. 1. Fig. 3 is a view similar to Fig. 1, but showing the door unlocked. Fig. 4 is a detail perspective view of portions of the mechanism with the parts partially disassociated.

Similar reference-numerals designate corresponding parts in all the figures of the drawings.

In the portion of the car disclosed a wall is provided with a doorway surrounded by a casing 6 and closed by a door 7. The floor of the car is shown at 8. The lock for the door consists of a reciprocatory bolt 9, slidably mounted in the casing, its inner end being received in a socket element 10, located in the edge of the door. The lock is preferably urged to closed position by a spring 11, the lower end of which is bifurcated, as shown at 12, and straddles the bolt, bearing against a pin 13 passing through said bolt. The bolt may be moved to an inoperative position by a key, as 14, the keyhole 15 being placed in the door-casing 6.

The outer end of the bolt 9 is pivoted, as shown at 16, to one arm 17 of a bell-crank lever 18, the other arm 19 of said lever being

connected to the upper end of an upright reciprocatory link 20, said link passing through the floor 8 and preferably guided in a plate 21, secured to said floor. The lower end of this link is in the form of an enlarged head 22, that is arranged between a pair of brackets 23, secured to the under side of the floor and having their lower ends connected by a pivot or pintle 25. An upright slot 26, formed in the head, receives this pivot or pintle and permits the vertical movement of the link, as will be evident.

A swinging vane 27 is carried by the pivot or pintle 25 and is disposed transversely of the car, said vane normally assuming a vertical position and having oppositely-extending curved fingers 28 at its upper end on opposite sides of the pivot or pintle, which fingers are disposed over a pair of rollers 29, carried by the adjacent portion of the head 22 of the link 20.

The operation of the structure may be briefly outlined, as follows: As long as the car or vehicle is at a standstill it will be evident that the vane 27 will hang in a perpendicular plane and that the bolt 9 will be engaged with the door, so that said door will be locked against opening. If, however, the car is moved in either direction, the resistance of the air will effect the swinging movement of the vane to a trailing position. Consequently the forward finger 28 will bear down upon the roller 29, disposed beneath it, thus moving the link downwardly, swinging the bell-crank lever, and sliding the bolt 9 to an inoperative position. It will thus be evident that as long as the vehicle or car is in motion the door will be unlocked, and, furthermore, it will be clear that when the car comes to a standstill the parts will reassume their former position, or, in other words, the door 7 will be locked. Novel means of a simple nature are thus provided for locking and unlocking the door during the stoppage and movement of the train, respectively, and, moreover, these movements are obtained without regard to the direction of movement of the car.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, pro-

portion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

5 — Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a vehicle, of a door mounted on the vehicle, a reciprocatory bolt for locking the door, a bell-crank lever
10 having one arm connected to the bolt, a swinging vane, and a reciprocatory link operated by the swinging vane and having a pivotal connection with the other arm of the
15 bell-crank lever.

2. The combination with a vehicle, of a door mounted on the vehicle, a reciprocatory bolt for locking the door, a swinging vane, and connections between the bolt and vane
20 for effecting the reciprocation of the bolt on the swinging of the vane.

3. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, a pivot-support, a link having connections with the lock and having a slot that receives the pivot, and a swinging vane mounted on the pivot and having an engagement with the link.
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4. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, a bracket having a pivot, a link having connections with the lock and having slots that receive the pivot, a swinging vane mounted on the pivot, and a crank-arm carried by the vane and having a movable engagement with the link.
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5. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, an oppositely-movable vane, a single link having connections with the lock, and means operated by the vane to move the link in the same direction upon the movement of the vane in either direction.
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6. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, an oppositely-movable vane, a single reciprocatory link having connections with the lock, and means operated by the vane to move the link in the same direction upon the movement of the vane in either direction.
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7. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, an oppositely-movable vane, a single link connected to the lock, and devices rigidly carried by the vane and engaging the link.
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8. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, an oppositely-swinging vane, a single link connected to the lock, and arms mounted on the vane and engaging the link on opposite sides of its pivot for effecting the movement of the said link in the same direction on the opposite swinging movements of the
60 65 vane.

9. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, a pivot-support, a reciprocatory link having a connection with the lock and having a slidable engagement with the pivot-support, an oppositely-swinging vane mounted on the pivot-support, and oppositely-extending arms carried by the vane and engaging the link on opposite sides of the pivot-axis to effect the movement of the link in the same direction on the oppositeswinging movement of the vane.
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10. The combination with a vehicle, of a door movably mounted on the vehicle, a lock for the door, a swinging vane mounted on the vehicle and operated by the resistance of air during the movement of said vehicle, a pivot-mounting for the vane, and a reciprocatory link having a sliding connection with the pivot, said link being associated with the lock and vane to transmit motion from the latter to the former.
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11. The combination with a vehicle, of a door movably mounted thereon, a sliding bolt for holding the door closed, a bell-crank lever having one arm connected to the bolt, a reciprocatory link connected to the other arm of the bell-crank lever, a bracket-mounting, a pivot carried thereby, said link having a head and a slot in the head that receives the pivot, and a swinging vane mounted on the pivot and having engagement with the head to reciprocate the same.
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12. The combination with a vehicle, of a door located on the vehicle, a lock for the door, a link connected to the lock, and an oppositely-swinging pivoted vane having devices on opposite sides of its pivot that cooperate with the link to move the same on the movement of the vane in either direction.
100 105

13. The combination with a vehicle, of a door mounted on the vehicle, a lock for the door, a link connected to the lock and having spaced projections, and an oppositely-swinging vane pivoted between the projections and having oppositely-extending fingers that engage the projections to move the link upon the swinging movement of the vane.
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14. The combination with a vehicle, of a door, mounted thereon, a sliding bolt movable into and out of engagement with the door, a bell-crank lever connected to the bolt, a bracket secured to the under side of the vehicle-floor and having a pivot, a reciprocatory link connected to the bell-crank lever, and having a head provided with a slot that receives the pivot, rollers mounted on the head on opposite sides of the slot, and a vane mounted on the pivot and having oppositely-extending fingers that cooperate with the roller.
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15. The combination with a vehicle, of a closure mounted thereon, a lock for the closure, automatic means operated by the movement and stoppage of the vehicle to effect the
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movement of the lock between an operative and an inoperative position, and means for moving the lock independently of said automatic means.

5 16. The combination with a vehicle, of a door-frame, and a door mounted on the vehicle, a lock mounted on the frame and movable into and out of engagement with the door for holding the same, a spring engaging
10 the lock to urge it into engagement with the door, and a movable vane mounted on the vehicle and operated by the air resistance

during the movement of said vehicle, said vane having connections with the lock to move it against the action of the spring upon 15 the movement of the vehicle.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DAVID L. MINIER.

Witnesses:

SUSAN MINIER,
MILDRED GROVER.