

E. B. RHODES.
DOOR OPENING DEVICE FOR VEHICLES.
APPLICATION FILED OCT. 25, 1911.

1,022,262.

Patented Apr. 2, 1912

FIG. 1

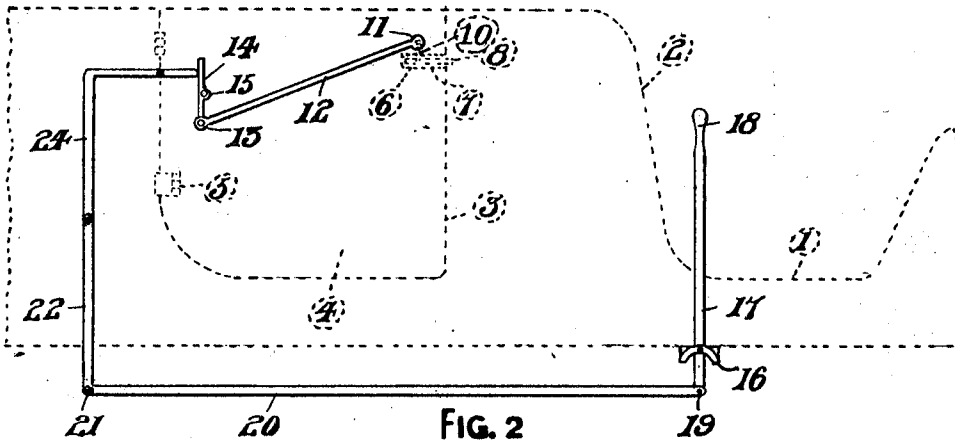


FIG. 2

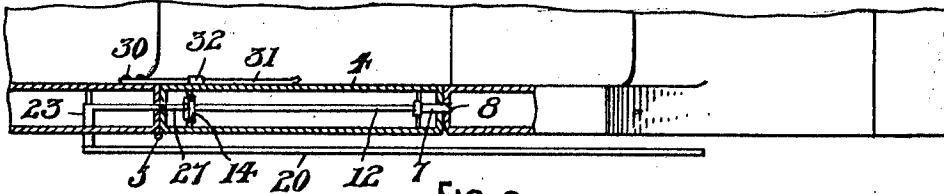


FIG. 3

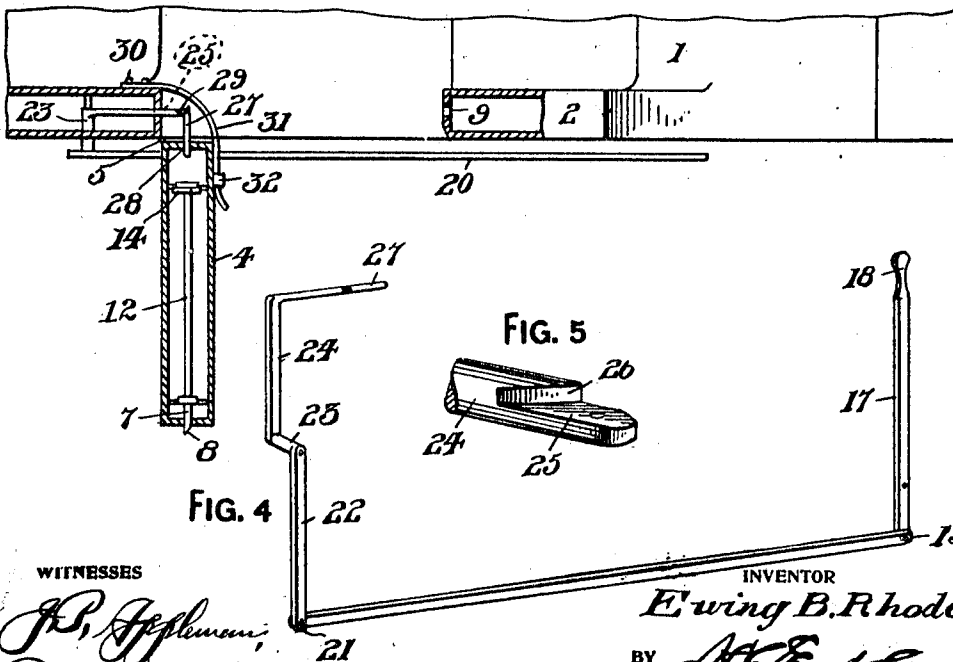
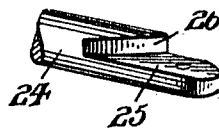


FIG. 5



WITNESSES

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DOOR-OPENING DEVICE FOR VEHICLES.

1,022,262.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EWING B. RHODES, a citizen of the United States of America, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Door-Opening Devices for Vehicles, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a door opening device for vehicles, and more particularly to a mechanism that can be advantageously used in connection with automobiles.

The primary object of my invention is the provision of positive and reliable means, in a manner as will be hereinafter set forth, whereby a chauffeur or operator of the automobile can quickly open the door thereof when the occupants desire to alight.

Another object of this invention is to provide an inclosed door operating mechanism for automobiles that will not impair the general appearance of an automobile, but add to the pleasure and convenience of using the machine.

A further object of this invention is to provide simple and effective means for operating the latch of a spring pressed door, the mechanism being applicable to various types of motor driven vehicles.

A still further object of this invention is to accomplish the above results by a mechanical construction that is simple, durable, easy to manipulate and highly efficient for the purposes for which it is intended.

With the above and other objects in view, the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein like numerals denote corresponding parts throughout the several views, in which:—

Figure 1 is a side elevation of a door operating mechanism, showing a portion of the body of an automobile in dotted lines, Fig. 2 is a horizontal sectional view of a portion of the automobile showing the door thereof in a closed position, Fig. 3 is a similar view showing the door in an open position, Fig. 4 is a perspective view of the operating levers of the door mechanism, and

Fig. 5 is an enlarged perspective view of a portion of a joint used in connection with the operating mechanism.

The reference numeral 1 denotes a portion of the body of an automobile having a hollow side wall 2 provided with a doorway 3 adapted to be closed by a door 4 hinged, as at 5 to the wall 2 at one side of the doorway 3. The door 4 is hollow and within the free edge of the door there are arranged guides 6 for a latch 7 having a beveled end 8 that permits of the latch 7 easily riding into a keeper opening 9 in the wall 2, when the door 4 is swung to a closed position. The latch 7 has a vertical pin 10 pivotally connected, as at 11 to a rod 12. The opposite end of the rod 12 is pivotally connected, as at 13 to an arm 14 pivotally connected, as at 13 to an arm 14 pivotally mounted upon a transverse pin 15 arranged in the hollow door 4.

The side wall 2, adjacent to the chauffeur or operator's seat of the automobile is provided with a bearing 16 for an operating lever 17 having the upper end thereof provided with a handle 18. The bearing 16 is of the ordinary and well known type that permits of the lever 17 being locked in an adjusted position, similar to the operating levers of an automobile. Pivottally connected to the lower end of the operating lever 17, as at 19 is a reach rod 20 and the rear end of said rod is pivotally connected, as at 21 to the crank 22 of a rock shaft 23, journaled in the hollow wall 2. The shaft 23 has an angle arm 24 within the wall 2, and the upper end of said arm is adapted to extend through an opening 25 provided therefor in the wall of the doorway 3. The end of the arm 24 is cut away, as at 25 to present a shoulder 26. Pivottally connected to the cut away end of the arm 24 is a pin 27 that extends through an opening 28 provided therefor in the hinged edge of the door 4. The pin 27 has a beveled face 29 to engage the shoulder 26 and maintain said pin in longitudinal alinement with the upper end of the angle arm 24, when said arm is actuated. The manner of pivotally connecting the pin 27 to the arm 24 permits of the pin 27 assuming a position at an angle to the arm 24, when the door 4 is opened.

Secured to the inner side of the wall, adjacent to the doorway 3, as at 30 is a flat

spring 31 having the opposite end thereof loosely mounted in a strap 32, carried by the inner side of the door 4. This spring is adapted to retain the door 4 normally closed.

When the handle 18 of the operating lever is pushed forwardly, the shaft 23 is rocked through the medium of the reach rod 20 and the crank 22. The initial movement of the lever 17 causes the upper end of the arm to move into the opening 25 and cause the end of the pin 27 to engage the upper end of the arm 14. This arm, through the medium of the rod 12, withdraws the latch 7 from the keeper opening 9. A further movement of the lever 17 causes the upper end of the arm 24 to swing the door open by reason of the pin 27 always remaining in engagement with the opening 28 of the door. The pin 27 gradually assumes an angle relatively to the arm 24 and said pin retains the door open as long as the lever 17 is locked. Immediately upon the lever 17 being released from a locked position, the spring 31 which has been placed under tension by opening the door 4, restores said door to a closed position.

From the foregoing it will be observed that the greater part of the door operating mechanism is inclosed within the wall 2 and the door 4 of the automobile, and that the operating lever 23 can be associated with the controlling levers of the automobile and easily and quickly manipulated when it is desired to open the door 4.

I reserve the right to duplicate the door mechanism to that extent that the single operating lever 17 can be used for opening the various doors of a large automobile, and that the operating lever 17 can be located at any other point than that shown in connection with an automobile, whereby any of the occupants can easily reach the same without opening one or all of the doors of the automobile.

What I claim is:—

1. In a door operating mechanism for vehicles, the combination with a vehicle body having a hollow wall provided with a doorway and a hinged hollow door, of a rock shaft journaled in the hollow wall of said vehicle, an angle arm carried by said rock shaft within said wall, a pin pivotally connected to the end of the arm and extending into an opening provided therefor in said door, and capable of opening the latter when said shaft is rocked, a latch arranged in said door and adapted to engage in said wall to retain said door in a closed position, means within said door and adapted to be actuated by said pin to release said latch to permit of the opening of the door by the pin, means connected to the inner side of said wall normally tending to maintain the door in a closed position, and means including an operating lever and a reach rod for rocking said shaft.

2. In a door operating mechanism, the combination with a hollow wall having a hollow door hinged thereto, of a rock shaft journaled in said hollow wall, an angle arm carried thereby, a pin carried by the end of said angle arm and extending into said hollow door, means carried by the inner side of said wall and engaging with the door for tending to maintain it in a closed position, means arranged in said door and adapted to normally lock said door in a closed position, and means including an operating lever and a reach rod adapted to actuate said rock shaft and the last mentioned means whereby said door will be released and opened.

In testimony whereof I affix my signature in the presence of two witnesses.

EWING B. RHODES.

Witnesses:

MAX H. SROLOWITZ,
CHRISTINA T. HOOD.