

W. H. JORDAN.
 SPRING DOOR.
 APPLICATION FILED AUG. 25, 1910.

1,028,571.

Patented June 4, 1912.

2 SHEETS-SHEET 1.

Fig - 1 -

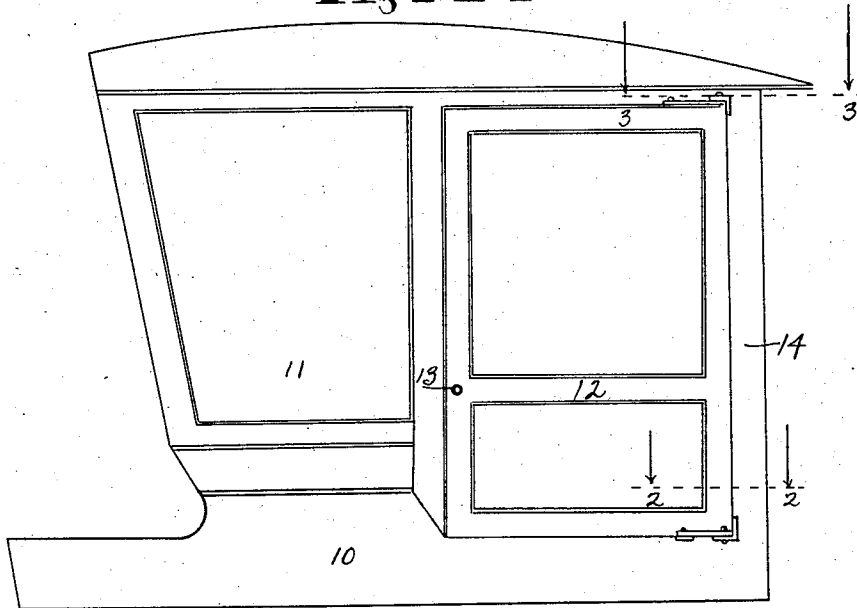
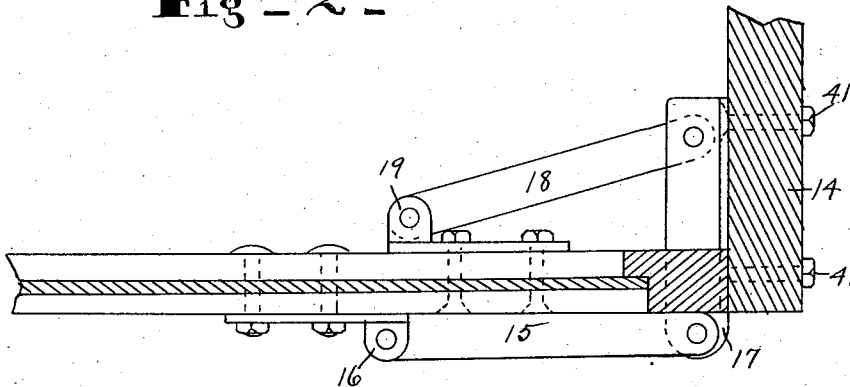


Fig - 2 -



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Fig - 3 -

Fig - 4 -

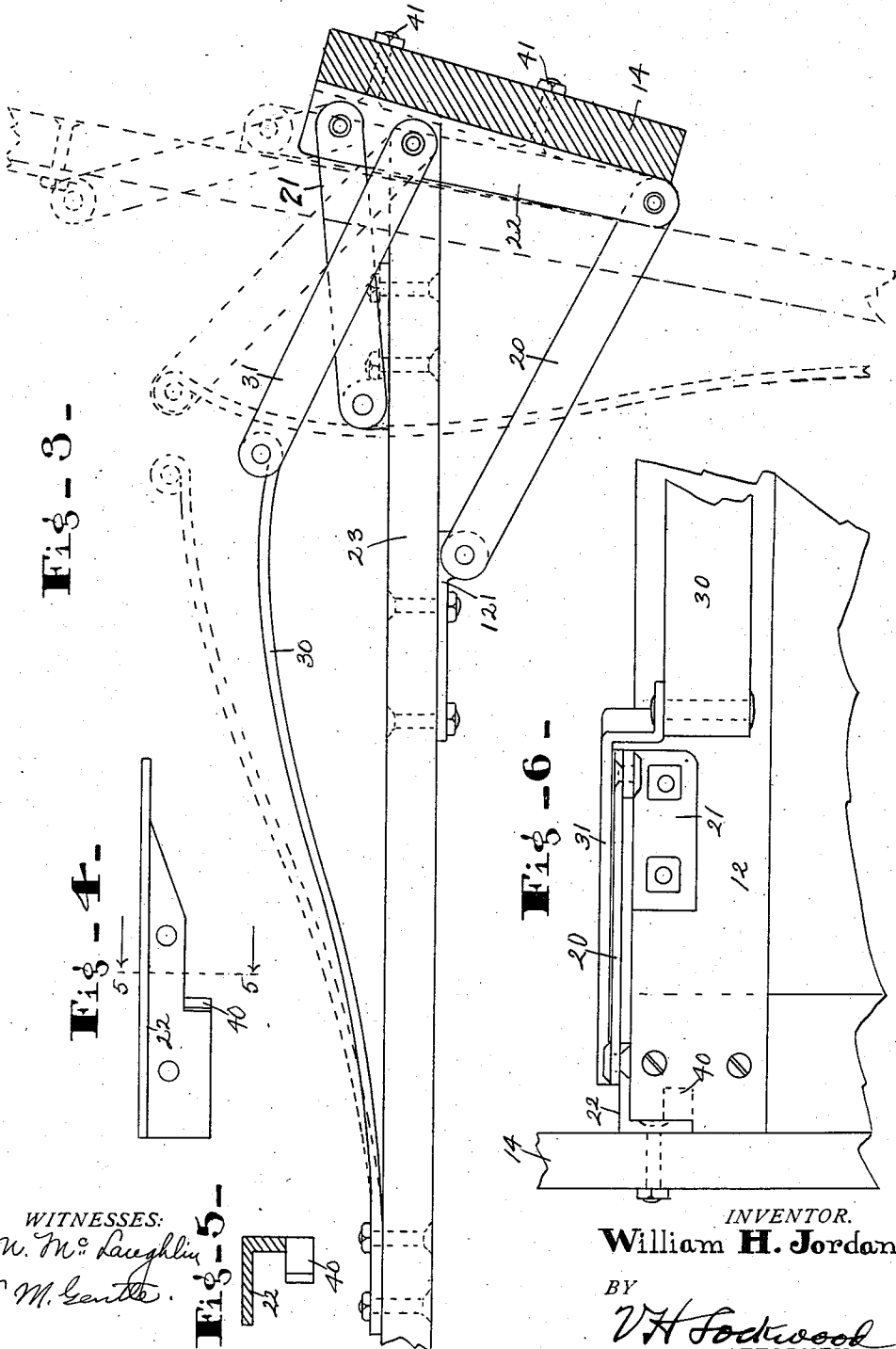
Fig - 5 -

Fig - 6 -

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UNITED STATES PATENT OFFICE.

WILLIAM H. JORDAN, OF KNIGHTSTOWN, INDIANA.

SPRING-DOOR.

1,028,571.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed August 25, 1910. Serial No. 578,962.

To all whom it may concern:

Be it known that I, WILLIAM H. JORDAN, of Knightstown, county of Henry, and State of Indiana, have invented a certain new and useful Spring-Door; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to improve the construction set forth in Letters Patent No. 936,908, and granted to me Oct. 12, 1909.

The improvement relates to the means for operating the upper part of the door, the lower part remaining the same as shown in said patent.

The chief feature of the invention consists in dispensing with the track rod 38 and the roller riding thereon, as shown in my former patent, and employing instead a bar pivoted at one end to the door and at the other end to the door frame or casing. This furnishes a positive mounting means and enforces positive action of the parts and avoids the play or loose operation characteristic of the former construction.

Another feature consists in providing an angle bar connected with means for securing the bars to the door casing, which serves also as a stop when the door is opened.

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Figure 1 is a side elevation of the vehicle body and top equipped with said door. Fig. 2 is a section on the line 2—2 showing the mounting of the lower end of the door. Fig. 3 is a horizontal section on the line 3—3 of Fig. 1 showing the mounting of the upper end of the door, the closed position being shown by full lines and the open position by dotted lines. Fig. 4 is an elevation of the means for fastening the pivotal bars to the lower frame or casing. Fig. 5 is a section on the line 5—5 of Fig. 4. Fig. 6 is a side elevation of one corner of the upper end of the door and associated parts, the door casing and means for mounting the upper end, parts being broken away.

The drawings herein show a body 10 of a vehicle having a top 11, and the side opening thereof closed by a door 12 having a knob 13 mounted in the front edge of the door. At the lower end of the door there is an outer pivotal bar 15 pivoted to the ear 16 on the door and to one end of the angle

iron 17 on the door casing. On the inside of the door there is a bar 18 pivoted at one end to the ear 19 on the door and at the other end to the angle iron 17. When the door is closed the pivotal bar 15 lies parallel with the door or against it and the other pivotal bar 18 extends away from the door at an angle from it, as shown in Fig. 2. At the top of the door there are two pivotal bars 20 and 21 arranged substantially the reverse of the bars 15 and 18 at the bottom of the door. The pivotal bar 20, which is on the same side of the door as the pivotal bar 15, is set at an inclination or angle to the door and is pivoted to the door by means of an iron 121, and to one end of the angle iron 22 which is secured to the casing 14. The bar 21, which is on the same side of the door as the bar 18 below, is pivoted to the door by means of the iron 23 and to the angle iron 22 at the end opposite the end to which the bar 20 is pivoted. These bars 20 and 21 are pivoted so that the door can move under them just as the bars 15 and 18 are pivoted so that the door can move over them when it swings. When the door is opened the bars 15 and 20 oscillate inwardly until they come up against the casing 14 or angle irons 17 and 22, while the bars 18 and 21 extend across the door as it opens. Therefore, there is no connection of any part with the portion of the door frame above the door as in my former construction.

The door is spring-held by the flat spring 30, which is fastened to the forward edge of the door on the inside and extends rearwardly, and at the rear end of said spring it is pivoted to the end of the bar 31, the other end of said bar being pivoted to the casing 14, or, as shown in the drawings, to the angle iron 22. While the door is closed the natural tension of the spring would move it to the dotted line position shown in Fig. 3, so it is tensioned by the pull of the bar 31 when it is drawn down to the full-line position. The arrangement is such that the spring tends to hold the door in its open and closed position and to spring it into those positions. Hence the neutral position of the door would be when it is about half open, for then the spring end of the bar 31 is most remote from the door. As the door opens it draws the spring toward the door as it does when the door is closed.

I provide a stop 40 on the lower part of

the upper angle iron 22, see Figs. 4, 5 and 6, in position to be engaged by the door when it is opened and stop the door.

While I have shown herein the pivotal bars connected with the door casing 14 by angle irons 17 and 22, I do not wish to be limited to that construction, as it is merely a means of securing the pivotal bars to the door casing, and they could be pivoted thereto by any other arrangement. There is, however, an advantage in pivoting the two lower pivotal bars to the one angle iron 17 and the upper three bars to the one angle iron 22, for then the whole door and all the attachments can be removed by merely releasing the four nuts 41 on the bolts that extend from the angle irons through the door casing. This makes it easier to remove and replace the door and yet the pivotal bars are pivoted separately to the door casing.

What I claim as my invention and desire to secure by Letters Patents is:

1. The combination with a door casing and a door, of a pair of pivotal bars connecting each end of the door with the casing, one bar of each pair being on each side of the door and pivoted at one end to the casing and at the other end to the side of the door away from its edge, and the inner bar of one pair and the outer bar of the other pair being substantially parallel with the door when closed and the other bars extending from the door at an angle therewith, substantially as set forth.

2. The combination with a door casing and a door, of a pair of pivotal bars connecting each end of the door with the casing, one bar of each pair being on each side of the door and pivoted at one end to the

casing and at the other end to the side of the door away from its edge, and one bar of each pair being substantially parallel with the door when closed and the other one extending therefrom at an angle, a flat spring secured to the inside of the door near its forward edge, and a bar pivoted at one end to the door casing and at the other end to the free end of the spring and arranged to draw said spring toward the door when in the closed and opened positions, substantially as set forth.

3. The combination with a door casing and a door, of plates removably secured transversely of the door to the door casing near the top and bottom of the door, a pair of pivotal bars connecting each end of the door with one of said plates, one bar of each pair being on each side of the door and pivoted at one end to said plate and at the other end to the side of the door away from its edge, and one bar of each pair being substantially parallel with the door when closed and the other one extending therefrom at an angle, a flat spring secured to the inside of the door near its forward edge, a bar pivoted at one end to one of said plates and at the other end to the free end of the spring and arranged to draw said spring toward the door when in the closed and open positions, and a stop extending from said plate for engaging and stopping the door in its opening movement.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

WILLIAM H. JORDAN.

Witnesses:

G. H. BOINK,
J. H. WELLS.