March 3, 1931. C. J. WUNDERLICH 1,794,938

DOOR

Filed June 20, 1928 2 Sheets-Sheet 1

Fig. 1.

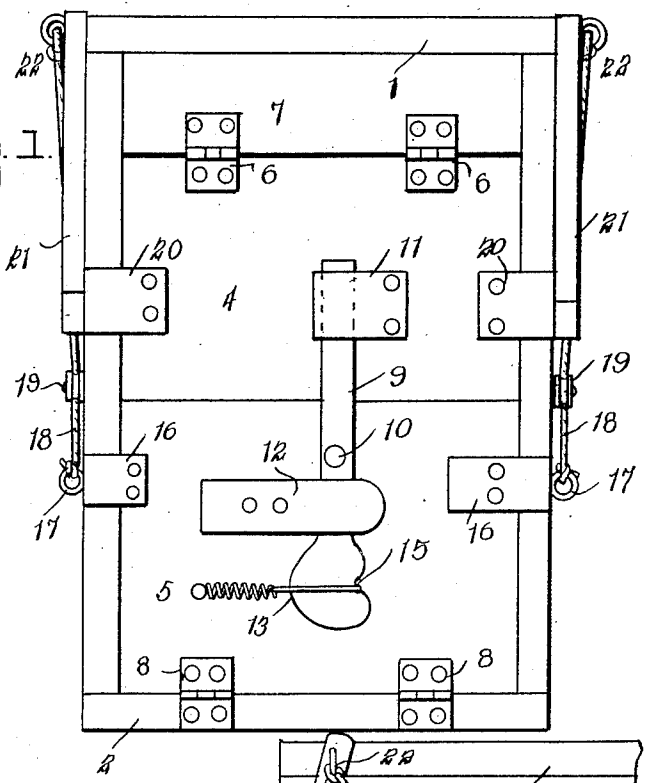
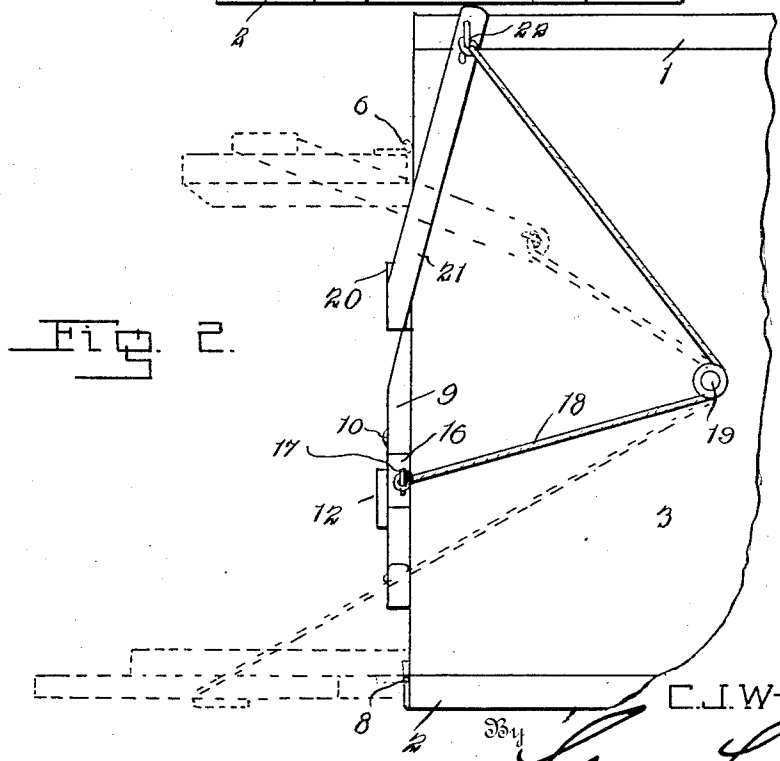


Fig. 2.



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DOOR

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Fig. 3.

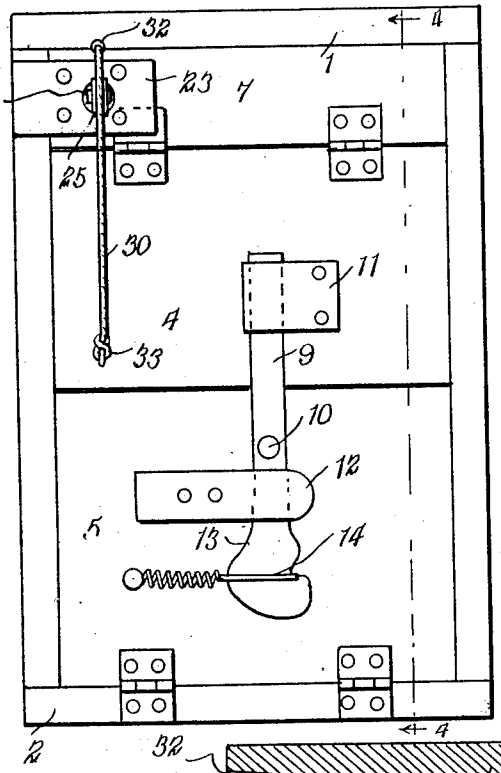
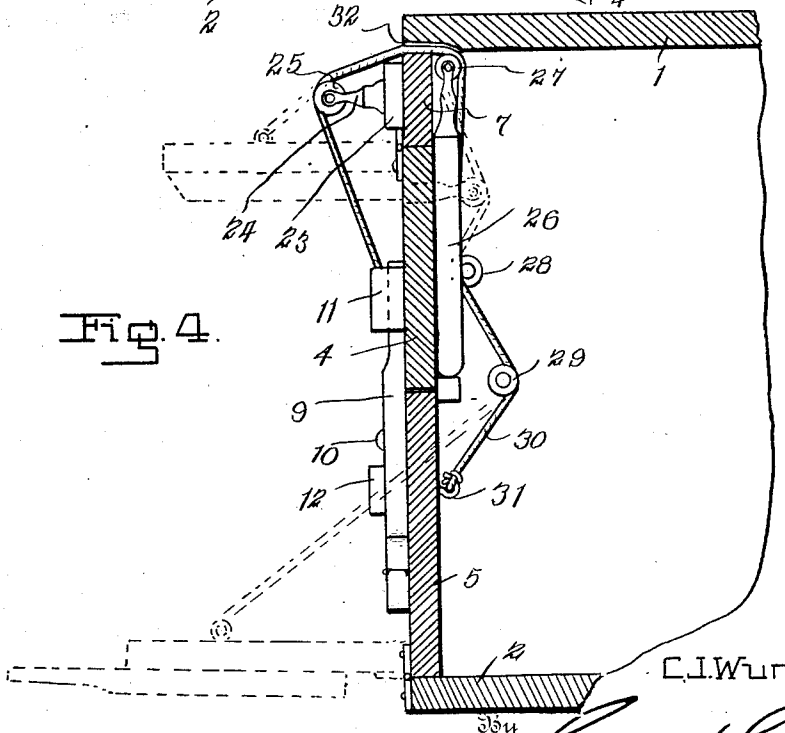


Fig. 4.



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Patented Mar. 3, 1931

1,794,938

UNITED STATES PATENT OFFICE

CHRISTIAN J. WUNDERLICH, OF MITCHELL, SOUTH DAKOTA

DOOR

Application filed June 20, 1928. Serial No. 286,907.

This invention has for its object the provision of doors for closed vans and delivery trucks which will effectually close the truck or van and may be very easily operated to open the door when access to the van is necessary. The invention also provides novel means whereby the doors are arranged to open in two sections, one section swinging upwardly and the other downwardly and may be firmly held in the open position and so connected that movement of either section of the door will cause a corresponding movement of the other section. While the invention is intended primarily for use upon delivery trucks and closed vans and is hereinafter more particularly described as so applied, it is to be understood that doors embodying the invention may be provided upon freight cars or other types of vehicles. The invention is illustrated in the accompanying drawing and will be hereinafter fully described, the novel features being particularly pointed out in the appended claim.

In the drawing:

Figure 1 is an elevation of a door embodying the invention;

Fig. 2 is a side view of the same, the open position of the door being shown by dotted lines;

Fig. 3 is a front elevation showing another embodiment of the invention, and

Fig. 4 is a vertical section on the line 4—4 of Fig. 3.

In the drawing, the reference numeral 1 indicates the top of a truck or van and 2 the floor of the same, while 3 indicates the sides thereof, the door being arranged at the end of the van body. The door comprises an upper section 4 and a lower section 5 of similar form, the upper section being connected by hinges 6 to a rail 7 secured between the sides of the vehicle body immediately adjacent the top thereof, and the lower section being connected by hinges 8 with the floor of the body at the end of the same. The hinges may be of any known or approved construction and are so disposed that the door sections may swing outwardly to any desired extent but their inward movement will be limited by the hinged edges thereof abutting the lower edge of the rail 7 and the upper surface of the floor 2 respectively, as will be understood. This arrangement permits the lower door section to be opened in such a manner that it may be utilized as a skid or unloading platform over which to move the contents of the vehicle when withdrawing the same.

A latching lever 9 is pivoted between its ends, as at 10, upon the lower door section and is adapted to bridge the meeting ends of the sections whereby to prevent accidental opening movement of the sections, and the upper end of this latching lever is adapted in closed position to engage under a keeper 11 secured upon the upper door section while its lower portion is adapted to engage under a keeper 12 secured upon the lower door section, these keepers being arranged in reverse relation so that, when the latch is swung about its pivot 10, it will simultaneously move into engagement with the two keepers or out of engagement therewith in an obvious manner. If desired, any known form of seal or lock may be provided upon either keeper so as to maintain the latch in engagement with the keepers unless the seal be broken, and tampering with the contents of the vehicle by unauthorized persons will thus be detected. It is also to be noted, as shown most clearly in Fig. 1, that the lower end of the latch member is enlarged, as indicated at 13, whereby it will be overweighted and the latch will constantly tend to assume the vertical position shown in the drawing to bridge the meeting edges of the door sections. In order to assist in maintaining the latch bar in the closed position and prevent vibration of the latch bar with resulting accidental opening of the door, a retractile spring 14 is secured at one end upon the lower door section and has its opposite end engaged in a notch 15 in the lower end of the latch lever, as shown and as will be understood.

A bracket 16 is secured to the lower door section adjacent the edge thereof and projects laterally from said section in position to bear against the end edge of the side wall of the vehicle body or the door frame. This bracket is equipped at its outer end with an eye 17 in which is secured one end of a cable

18 which passes forwardly therefrom and is trained about an idler roller 19 secured on the side of the vehicle body and thence passes upwardly and rearwardly toward the top of the vehicle. A bracket 20 is secured to the upper door section and projects laterally therefrom and to the outer end of this bracket is secured a lever 21 which extends upwardly therefrom and to the free end of which the end of the cable 18 is secured, as shown at 22. If the lower door section be swung outwardly, the pull exerted thereby upon the cable 18 will be transmitted to the upper free end of the lever 21 and said lever will be pulled downwardly at its upper end so that the upper door section will be swung upwardly, as indicated by the dotted lines in Fig. 2. The weight of the lower door section from the vehicle will prevent movement of the said section towards its closed position, and inasmuch as the lever 21 is thus held in a downwardly extending position, as indicated by the dotted lines, the upper door section will be held open. If, however, the lower door section be swung upwardly to permit the same to close, the restraining influence upon the upper door section will be relaxed and said section may simultaneously swing downwardly to its closed position. Of course, if desired, the well-known stay chains may be employed to prevent the lower door dropping too low.

In the form shown in Figs. 3 and 4, a bracket 23 carrying an outwardly projecting post 24 is secured upon the rail 7, the post having an idler roller or pulley 25 mounted in its outer end, and on the inner side of the upper door section is secured a post 26 which in the closed position of the door will extend close to the top of the vehicle body and is there equipped with an idler roller 27, as shown most clearly in Fig. 4. Other idler rollers 28 and 29 are mounted upon the side of the vehicle body within the same and a cable or other flexible element 30 is attached at one end to the lower door section, as by an eye 31, and passes therefrom over the pulleys 29 and 28 to then ride over the idler 27 and pass out through an opening 32 at the top of the vehicle body to ride over the pulley 25 and depend from said pulley. The end of the cable is fastened to the upper door member, as indicated at 33. Assuming the door to be closed, as shown in the drawing, to permit opening of the door, the latch bar 9 is swung out of engagement with the keepers 10 and 11 and caused to assume a position entirely clear of the keepers. The door sections may then be swung respectively upwardly and downwardly by merely pulling down on the lower section, and as the upper section swings upwardly the post 26 will swing therewith so as to assume a substantially horizontal position, whereupon the parts will be held in the positions to which they have been moved. When it is desired to again close the door, it is necessary merely to push the lower section upwardly, the upper section automatically following the movement and closing. This form of the invention is well adapted to use upon freight car doors, and it is to be understood that the mechanism may be provided in duplicate and applied to both sides of the door.

The overbalancing of the latching lever causes it to swing toward the vertical position as the lower door member swings upwardly and the lever may then be very easily engaged with the keepers 10 and 11 and be again secured.

From the foregoing description, taken in connection with the accompanying drawing, it will be seen that I have provided an exceedingly simple door which will completely close the door opening and which, when opened, will provide a platform or skid to facilitate the withdrawal of objects from the vehicle while the upper door section will serve as a roof or canopy to protect the contents of the vehicle from the effects of the weather.

Having thus described the invention, I claim:

The combination with top, bottom and spaced side members defining a door opening, and a door for the opening comprising upper and lower sections hinged to the said top and bottom members respectively, to swing in opposite directions, of brackets carried by the door sections and projecting laterally therefrom across the side members to limit the closing of the door and position the sections, levers extending along the side members in an upward direction and secured at their lower ends to the brackets attached to the upper door section, a flexible connection attached at one end to the upper end of a lever and at its other end to a bracket of the lower door section, and a guide element for each flexible connection disposed some distance from the plane of the door and about opposite the meeting edges of the door sections.

In testimony whereof I affix my signature.

CHRISTIAN J. WUNDERLICH. [L. S.]