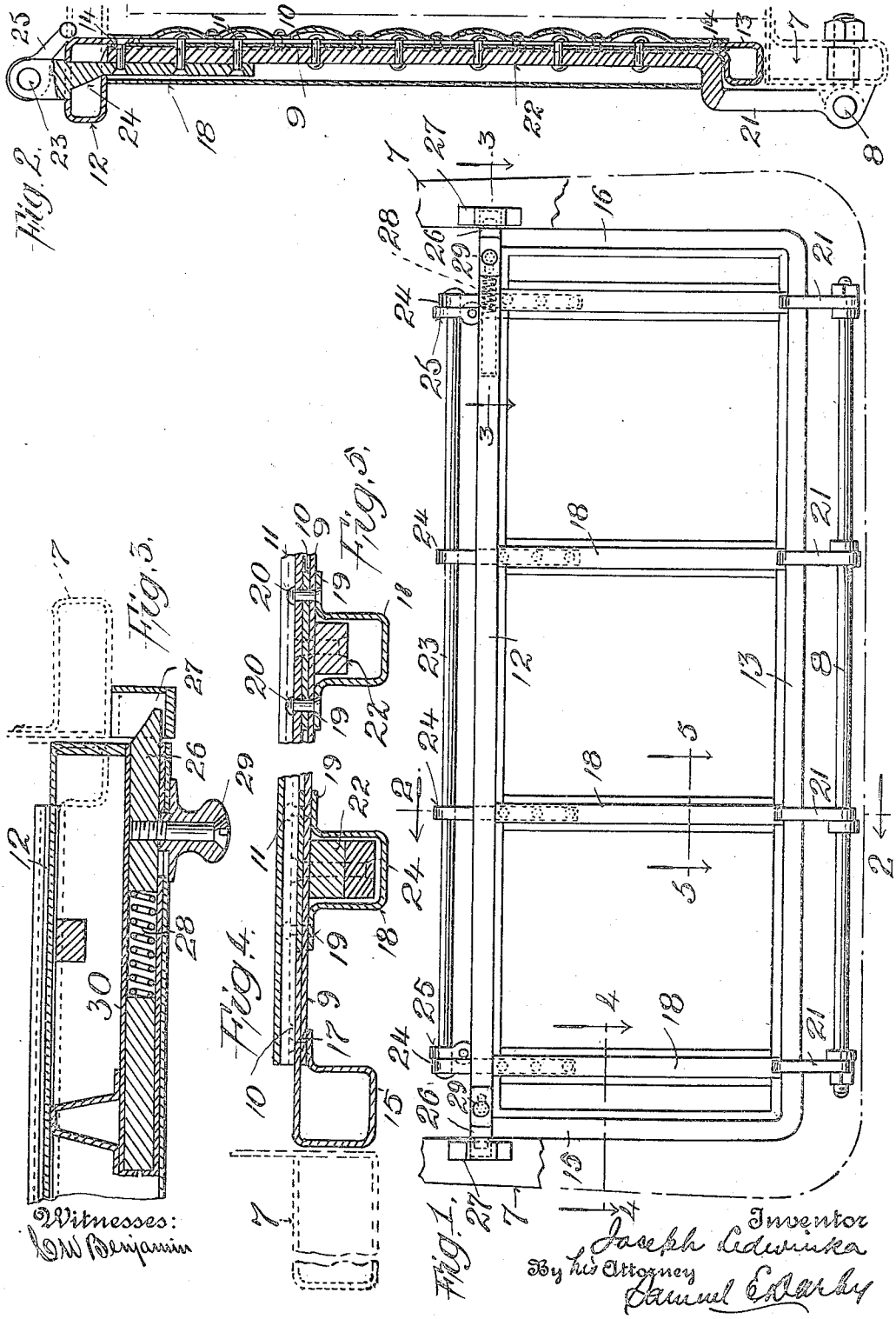
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END DOOR FOR DELIVERY WAGONS.

APPLICATION FILED NOV. 22, 1912.

1,139,458. Patented May 11, 1915.



Witnesses:
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END DOOR FOR DELIVERY-WAGONS.

1,139,458. Specification of Letters Patent. Patented May 11, 1915.

Application filed November 22, 1912. Serial No. 732,836.

To all whom it may concern:

Be it known that I, JOSEPH LEDWINKA, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, have made a certain new and useful invention in End Doors for Delivery-Wagons, of which the following is a specification.

This invention relates to end doors for delivery wagons.

The object of the invention is to provide a door for the rear end of a delivery wagon, or for other purposes, which is simple in construction, economical to manufacture, and strong and durable in use.

Other objects of my invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawing, and finally pointed out in the appended claims.

In the accompanying drawing:—Figure 1 is a view in rear elevation of a door constructed in accordance with my invention showing a portion of a vehicle to which the door is applied. Fig. 2 is a vertical cross section on the line 2, 2, Fig. 1, looking in the direction of the arrows. Figs. 3, 4, and 5, are enlarged broken detail views in section on the lines 3, 3; 4, 4; and 5, 5, respectively.

The same part is designated by the same reference numeral wherever it occurs in the several views.

It is a common expedient to supply delivery and other wagons with hinged rear end doors, which are designed to swing down into substantially horizontal position while the vehicle is being loaded and unloaded, and to swing into vertical position to close the rear end of the vehicle. Since the door is thus used as a loading and unloading platform of the vehicle, so to speak, it is subjected to very heavy and rough usage by depositing thereon and moving thereover the packages, boxes, trunks, or other articles transported by the vehicle. This rough usage rapidly wears out, breaks, bends or otherwise injures the door, and necessitates a specially constructed door in order to withstand the wear. In securing a strong and durable door construction adapted to meet the rough usage referred to, it is desirable to secure lightness in weight without sacrificing anything of strength and rigidity.

It is among the special purposes and objects of my invention to produce a door structure which fulfils these and other requirements, and in carrying out my invention I propose to construct the body of the door out of sheet metal, and to reinforce and strengthen the same by metallic box channel ribs at the edges and along the exterior transverse width thereof, and to employ rigid transverse bars on the exterior surface thereof, the inner sheet metal plates forming the face of the door when rocked down into horizontal position to form a loading or unloading platform being corrugated or fluted.

Referring to the accompanying drawing in which I have shown a door structure embodying my invention, reference sign 7, designates a portion of the rear or end framing of a delivery wagon or other vehicle to which the door is to be applied, said framing having a horizontal rod 8, or other suitable means to form a hinge for the door.

The door itself is formed of sheet steel plates 9, 10, 11, said sheets 9 and 10, being placed flatwise against and suitably secured to each other by welding, riveting or otherwise, while the sheet or plate 11, which forms the upper face or surface of the door when in horizontal position is preferably fluted or corrugated, as shown, and is suitably secured by rivets or otherwise to the plates 9, 10. In order to strengthen the door at its upper and lower edges the outer plate 9 has its top and bottom edges formed into box channel ribs 12, 13, respectively, the corresponding edges of the intermediate plate 10, being received between the lips of the channel ribs 12, 13, as more clearly shown at 14, Fig. 2. Similarly, and for a similar purpose the side edges of the intermediate sheet or plate 10, are bent to form the box channel ribs 15, 16, between the lips of which are received the corresponding edges of the plates or sheet 9, as most clearly shown at 17, Fig. 4. The joints between the edges of plates 9, 10, and the channel ribs in which they are respectively received are welded or otherwise suitably secured.

In order to strengthen the body of the door between its edges I apply transversely thereacross channel ribs 18, having lateral flanges 19 for application flatwise against the outer surface of the outermost plate 9 of the door body, and suitably secured thereto

by rivets 20, or otherwise, as may be desired.

It will be observed that the channel ribs 12, 13, 15, 16 and 18, extend or project outwardly from the door when the latter is raised to its vertical or closed position, and hence takes the brunt of impact in case the vehicle or wagon is backed against a post or other obstacle, thereby preventing injury to the door body by reason of such impact while at the same time said ribs secure great strength and rigidity to the door structure.

The door is provided with hinge connections 21, to the pivot rod or axis 8. In the form shown these hinge connections are offset portions at the lower ends of bars 22, which extend transversely across the body of the door and are riveted or otherwise secured to the plates 9, 10, as shown. In practice I prefer to arrange the hinge bars 22 inside the channels of ribs 18. These bars are thus securely attached to the body of the door and aid in rendering the same stronger and more rigid and durable than they otherwise would be.

If desired the door may be provided with a lifting bar 23, at its upper or free edge. This bar may be secured to the door in any suitable or convenient manner. I have shown a simple and efficient arrangement wherein said rod is carried in arms 24, which extend down into the upper ends of the channels of ribs 18, and are riveted or otherwise secured to the bars 22, and plates 9, 10, as shown in Figs. 2 and 4. Links 25, may also be mounted on the ends of rod 23, by means of which, through chains or other means, the outer edge of the door may be supported when let down into horizontal position.

If desired, and in order to lock the door when in its vertical or closed position, the door is provided with locking bolts 26, at its upper corners designed to snap into keepers 27, carried by the wagon frame 7. The bolts are shown as of ordinary form with springs 28, normally tending to press the same outwardly and handles or knobs 29, by which said bolts may be withdrawn. The bolt is carried in a casing 30, which is secured within the channel of rib 12, the handle or knob 29, working through a slot or opening in said channel rib.

From the foregoing description it will be seen that I provide an exceedingly strong and durable door structure for use in connection with delivery or other wagons, and well adapted to withstand the rough usage to which such doors are subjected.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention and desire to secure by Letters Patent is:—

1. An end door for delivery wagons, comprising sheet metal plates assembled flatwise the one upon the other and secured together, the plate forming the upper horizontal wearing surface of the door when in position for delivery purposes being corrugated.

2. An end door for delivery wagons comprising sheet metal plates assembled flatwise the one upon the other and secured together, one of said plates having its edges bent into closed channel shape, the corresponding edges of the other plate being received between the lips of the channel and integrally secured thereto.

3. An end door for delivery wagons comprising sheet metal plates assembled flatwise the one upon the other and secured together, and channel shaped strengthening members laterally flanged at their edges and applied in transverse relation across the door, to the outer plate and secured thereto.

4. An end door for delivery wagons comprising sheet metal plates assembled flatwise the one upon the other and secured together, channel shaped strengthening members laterally flanged at their edges and applied in transverse relation across the door to the outer plate and secured thereto and bars located within said channels and secured to the door plates, the ends of said bars extending beyond the ends of the channels to form hinge connections for the door.

5. A door composed of a sheet metal body having channel ribs extending transversely thereacross, arms extending into the channels of said ribs and secured to the door body, and a lifting rod carried by said arms.

In testimony whereof I have hereunto set my hand in the presence of the subscribing witnesses, on this 29th day of October, A. D. 1912.

JOSEPH LEDWINKA.

Witnesses:
ALLEN M. STEARNE,
B. L. DIEHL.