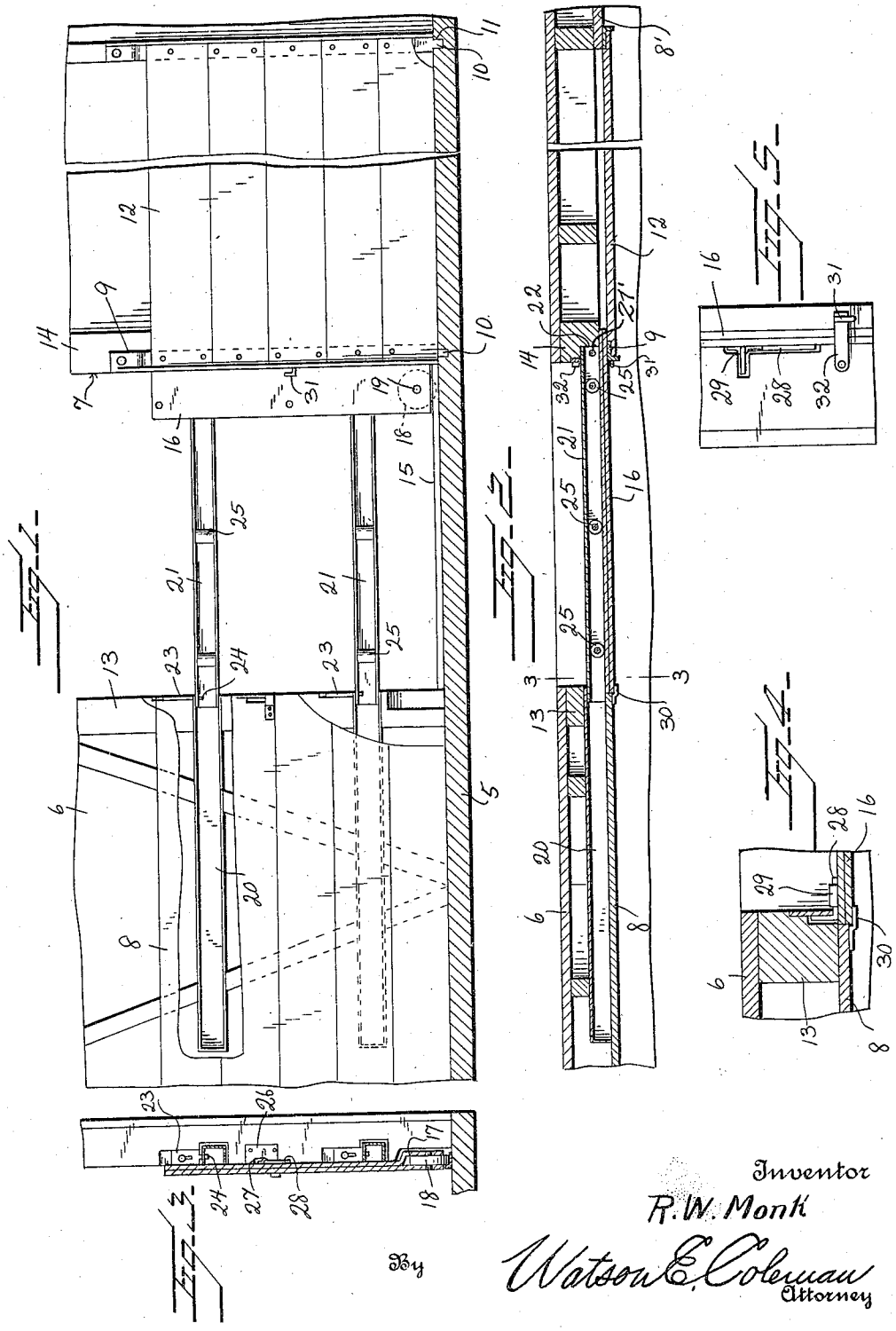
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CAR DOOR.

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1,298,764.

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CAR-DOOR.

1,298,764. Specification of Letters Patent. Patented Apr. 1, 1919.

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To all whom it may concern:

Be it known that I, RAYMOND W. MONK, a citizen of the United States, residing at Pittston, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to car doors, and more particularly to an improved mounting for grain car doors which is simple and durable in its construction, and can be readily applied to the ordinary grain car at nominal cost.

It is the primary object of my invention to provide an improved door mounting whereby the door may be easily and quickly moved to its open position against the weight of the material, and means for latching the door in its open or closed positions.

It is a more particular object of the invention to provide spaced channel-shaped members adapted to be disposed across the door opening and having anti-friction rollers to engage the outer face of the door, longitudinally extending housings to receive said members arranged at one side of the door opening, and means for retaining said members either in their operative positions, or in an inoperative position within said housings.

It is also an additional object of the invention to provide an improved boxing, and means for securing the same to the car body to receive the door when moved to its open position.

It is also a further general object of my invention to improve and simplify car doors of the above type and at the same time enable the device to be applied to the ordinary car without necessitating any material modifications or changes in the construction thereof.

With the above and other objects in view, the invention consists in the improved construction, combination and relative arrangement of the several parts as will be hereinafter more fully described, subsequently claimed and illustrated in the accompanying drawing in which similar reference characters designate corresponding parts throughout the several views, and wherein:—

Figure 1 is an interior side elevation of a grain car having my improved door applied thereto, certain of the parts being broken away;

Fig. 2 is a horizontal section showing the door in closed position;

Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2;

Fig. 4 is an enlarged detail horizontal section showing the door latched in its closed position; and

Fig. 5 is a fragmentary elevation showing the door latched in its open position.

Referring in detail to the drawing, 5 designates the car floor, 6 the side wall, and 7 the door opening therein. A vertical wall 8 is secured to the framing on the inner side of the wall 6 at one side of the door opening and at the opposite side of said opening angle bars 9 are off-set at their upper ends and secured to the spaced vertical posts or joists of the wall 6. The lower ends of these angle bars are formed with studs 10 which are adapted to be engaged in mortises 11 in the car floor 5. To the angle bars 9, a plurality of boards 12 are securely bolted or otherwise fixed at their ends to form a wall or boxing extending from the floor of the car to any desired height. By fixing the boards 12 to the spaced angle bars, as explained, this boxing which receives the car door when the latter is in its open position, can be readily applied to the car simply by forming the mortises in the floor to receive the studs 10, and then securing the upper ends of the angle bars to the wall posts.

13 and 14 respectively designate vertical posts secured to the wall 6 at opposite sides of the door opening and between these posts at their lower ends, a track rail 15 is secured to the car floor. 16 designates the door which, as herein illustrated, is constructed of two metal sheets riveted or otherwise permanently secured together. At the lower edge of the door, the outer metal sheet at its opposite ends is angularly off-set, as shown at 17, and between said off-set and the other metal sheet, a wheel or roller 18 is rotatably mounted upon an axle 19 which is fixed in the door plates or sheets. These wheels or rollers travel freely upon the track rail 15.

Between the walls 6 and 8 of the car structure, horizontally extending channel-shaped metal housings 20 are arranged, the frame bars between said walls being mortised or recessed to receive said housings. These

housings are open at one of their ends to receive the channel-shaped members 21 which, when disposed in operative position, extend horizontally across the door opening 7 and are engaged in mortises or recesses 22 formed in the door post 14, while the other ends of said members are disposed within the open ends of the housings 20. 23 designates vertically movable latch plates mounted in the post 13, each of the plates having a latch tongue 24 formed on its lower end for engagement through an opening in the upper flange of one of the members 21. The open sides of these channel-shaped members face inwardly and between the parallel longitudinal flanges thereof, a plurality of anti-friction rollers 25 are mounted, with which the outer face of the door 16 is engaged. The longitudinal flanges of each member 21 are also connected at their ends by a vertical rod 21′, with which the finger may be engaged for the purpose of easily withdrawing said members from the housings 20.

The door post 13 is provided with a recess in which a keeper plate 26 is fitted and secured to said post. This keeper plate is formed with a notch 27 to receive the angular end of a latch rod 28, which is engaged in a suitable bearing 29 fixed to the outer side of the door 16. To the end of the wall 8, contiguous to the opening 7, spaced bracket members 30 are secured, and the door, when moved to its closed position, is engaged by these bracket members, and together with the track 15, the door is thereby securely held against inward movement due to externally applied pressures.

To the flange of the angle bar 9, which is contiguous to the door opening 7, a keeper lug 31 is secured, and with this lug, the free end of a latch lever 32 pivoted upon the post 7 is adapted to be engaged. Thus, when the door 16 is moved to its open position between the wall 12 and the side wall 6 of the car, the latch lever 32 may be swung inwardly to a position at right angles to the door and engaged in the keeper 31, whereby the door will be retained in its open position. The post 14 is suitably mortised to accommodate the latch rod 28 in the latter position of the door. It will, of course, be understood that one vertical side of the boxing formed by the wall 12 is closed by the wall 8′, which corresponds to the wall 8, and in the application of the boxing to the car, a portion of the wall 8′ is removed.

In the operation of the device, when the door is in its closed position, as seen in Fig. 2, it is firmly braced against internal pressures by means of the channel-shaped members 21 and is held against longitudinal movement by the latch rod 28. The door 16 may be easily moved to its open position, and entirely inclosed or housed between the wall or boxing 12 and the side wall of the car. The latch plates 23 are then disengaged from the flanges of the members 21 and said members moved longitudinally into the housings 20 which extend between the wall 8 and the side wall of the car. The latch plates 23 on the door post 13 are then engaged in the openings in one end of said members to retain the members 21 in their inoperative positions. Thus, all parts of the device are compactly housed or inclosed so that they will in no way offer obstructions to the free unloading or removal of the grain. I have herein referred to the door as being constructed of two sheet metal plates, but it is to be understood that, if desired, for the sake of cheapness and lightness in construction, this door may consist of a single plate and suitable bearing brackets may be secured thereto for the rollers or wheels 18. The several parts of my invention as above described are all of exceedingly simple form and will, therefore, be very durable and capable of manufacture at relatively small cost.

While I have herein shown and described the preferred construction and relative arrangement of the several parts, it is to be understood that the device is susceptible of considerable modification and I, therefore, reserve the privilege of adopting all such legitimate changes as may be fairly embodied within the spirit and scope of the invention as claimed.

I claim:—

1. In combination with a car having a door opening in its side wall, a horizontally sliding door to close said opening, a wall mounted at one side of the door opening and in spaced relation to the side wall to constitute a boxing to receive the door when in its open position, spaced channel members extending across the door opening, anti-friction rollers arranged in said channel members for engagement by the outer face of the door to resist the forward thrust of the car contents, means for removably holding the channel members in their operative positions, and means extending horizontally along the side wall of the car at one side of the door opening to receive said channel members and retain the same in an inoperative position.

2. In a car door structure, the combination with a car having its side wall provided with an opening, of a horizontally slidable door for said opening, a wall adjacent to but spaced from the wall of the car on one side of the opening, vertical angle bars having their lower ends fixed to the car floor and their upper ends to the side wall of the car, to hold said spaced wall rigidly in position, thereby forming a boxing for the reception of the door when open, channel iron members imbedded horizontally in the wall of the car upon the other side of the opening, and constituting horizontal parallel

boxings, and a pair of spaced channel iron members, one super-imposed with relation to the other extending horizontally across the opening and having anti-frictional rollers journaled therein engaging the outer face of the door when closed, thereby resisting the outward thrust of the car contents, one jamb of the opening having means for the reception of corresponding ends of the last mentioned channel members including detachable securing means for said ends, when said channel members are arranged horizontally of the opening, the other ends of the last mentioned channel members engaging the open ends of the first channel irons, said first and second channel irons being so arranged and relatively constructed, whereby the former channel members may receive the latter channel members, when moved from across the opening.

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

RAYMOND WILLIAM MONK.

Witnesses:

HENRY J. CARLSON,

J. CONNER FRENCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."