N. HOOPLE.

GRAIN CAR DOOR.

APPLICATION FILED APR. 9, 1908.

**921,701.**

Patented May 18, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

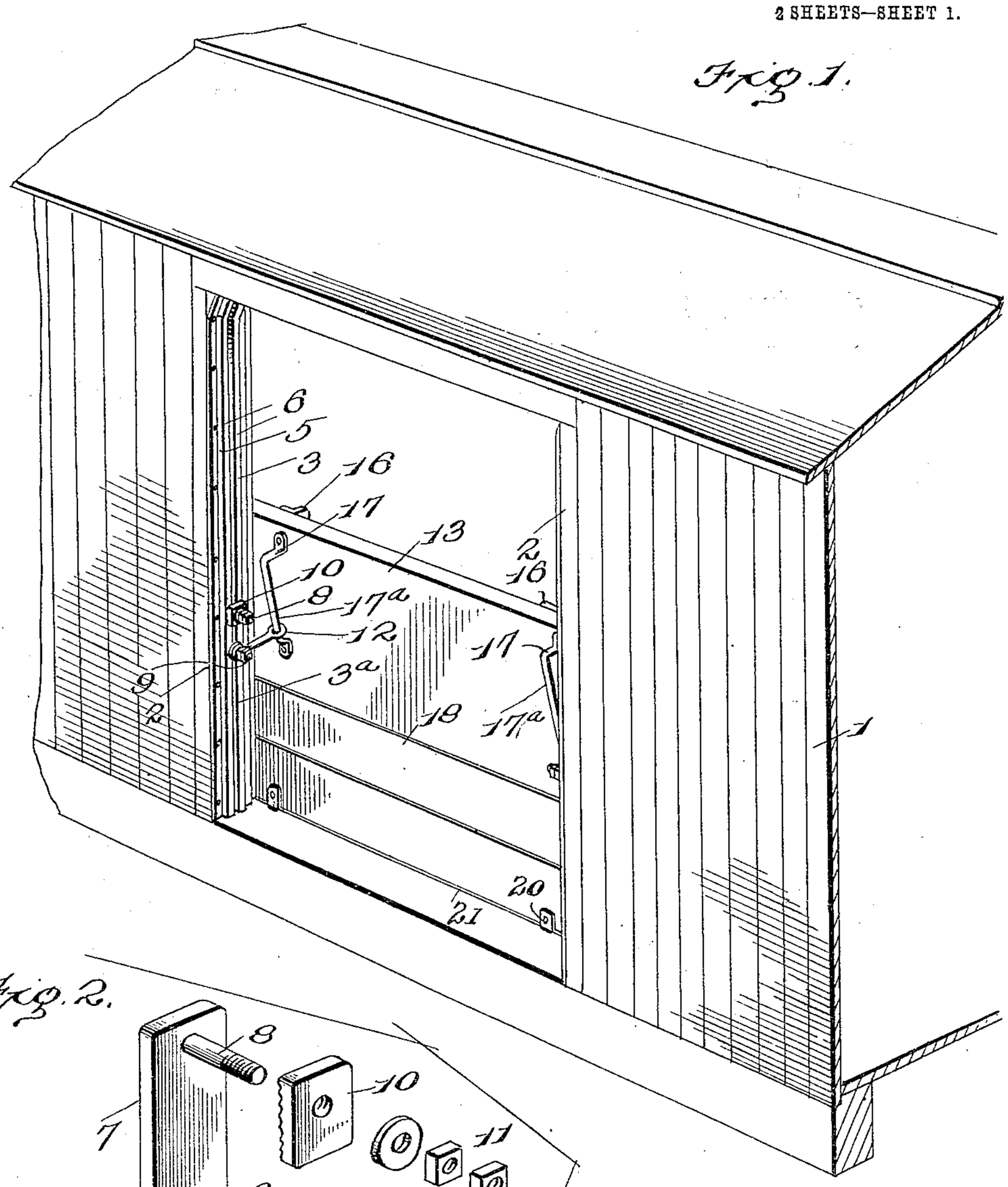
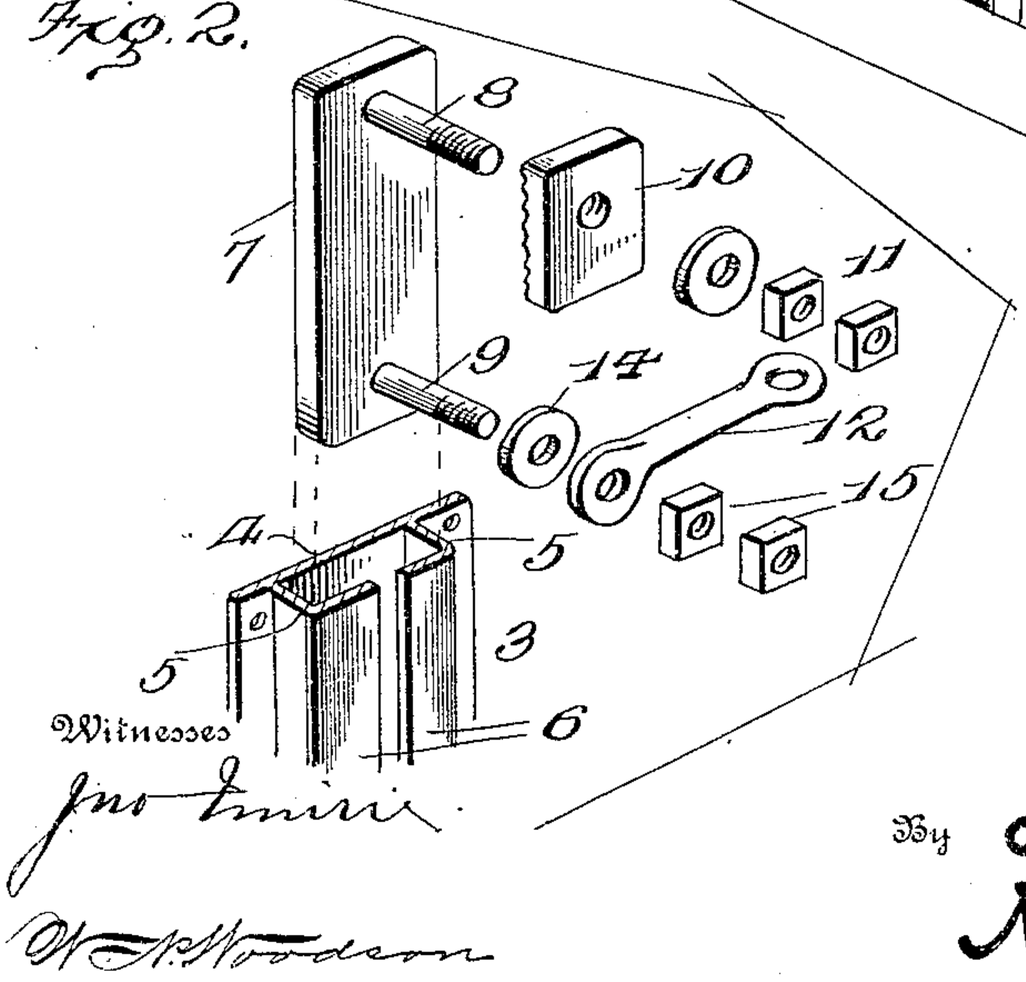



Fig. 2.




Witnesses

Jno Smith.

O. F. Woodson

Inventor

N. Hoople

By Howard Lacey. Attorneys

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Fig. 3.

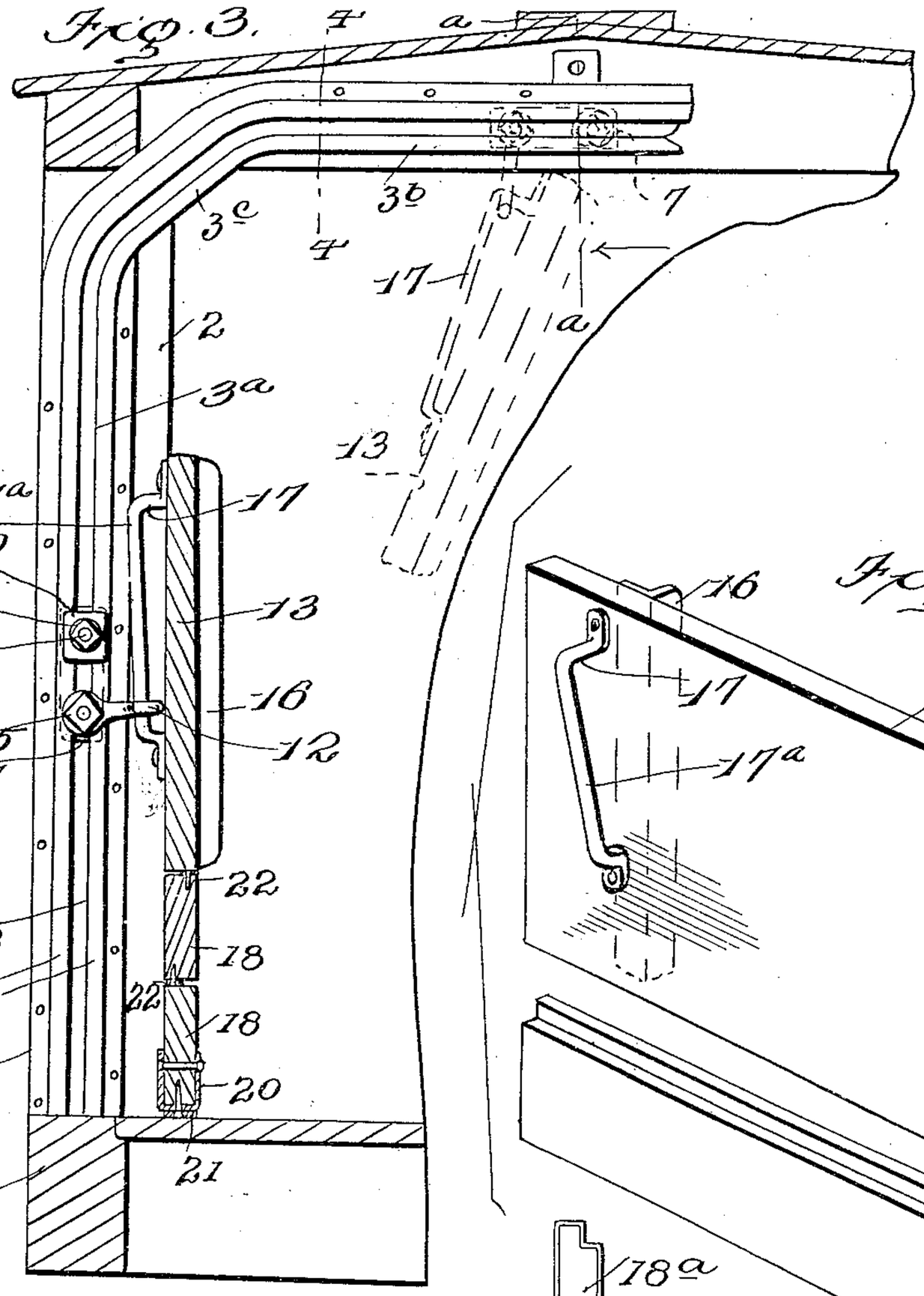



Fig. 5.

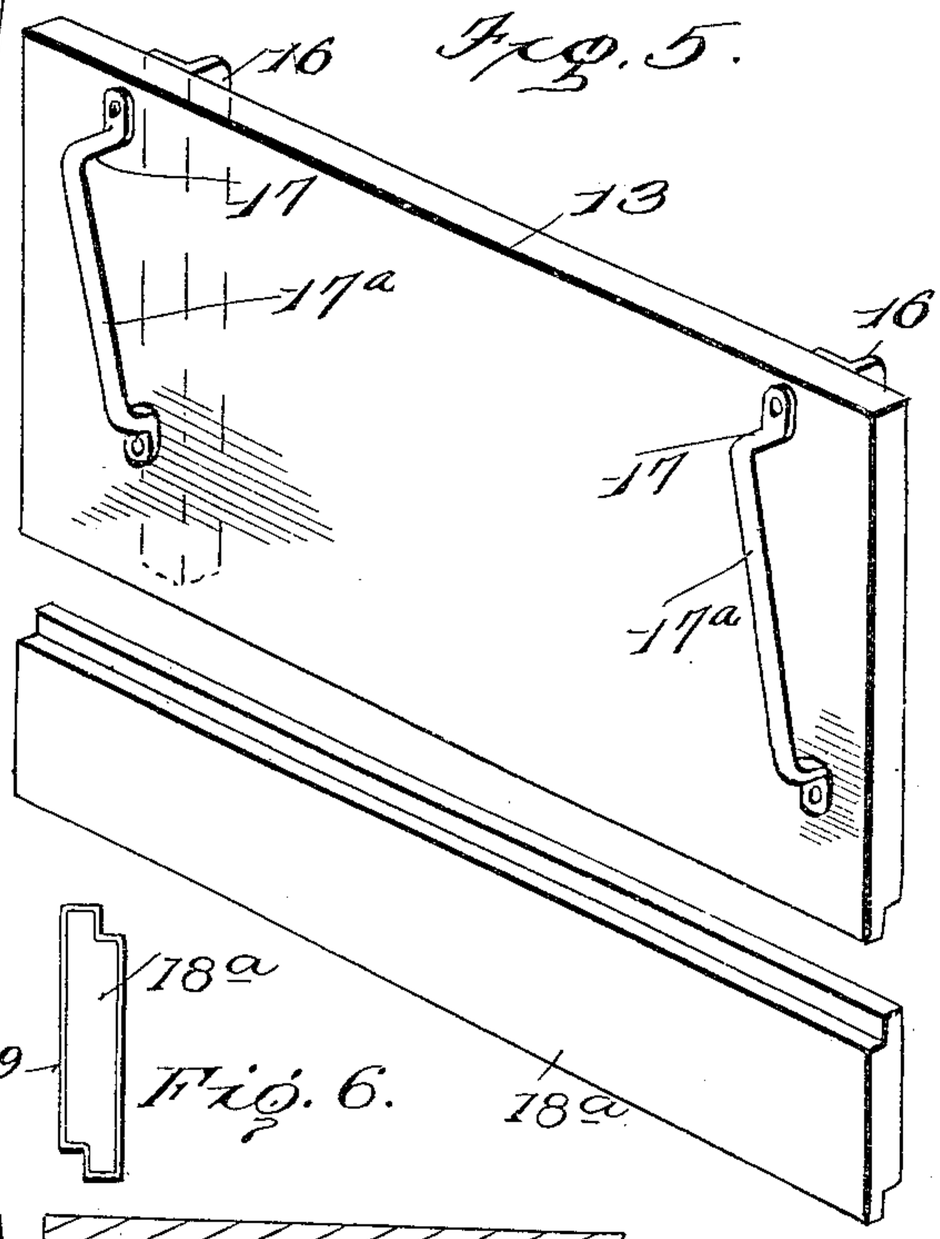
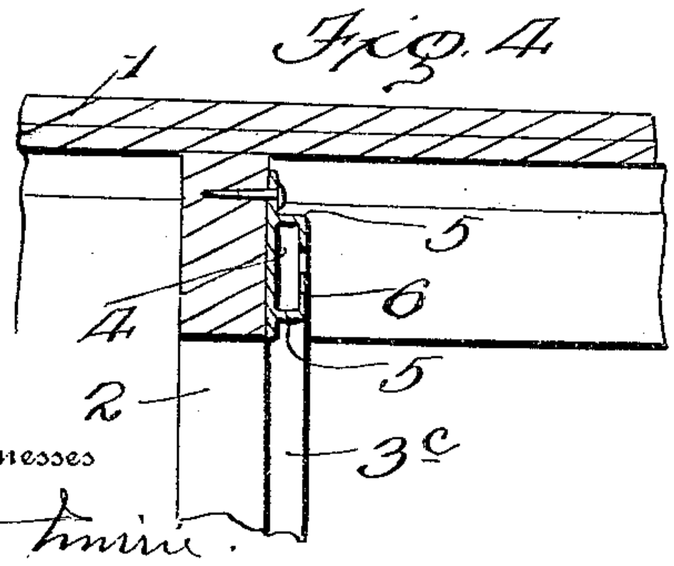



Fig. 4



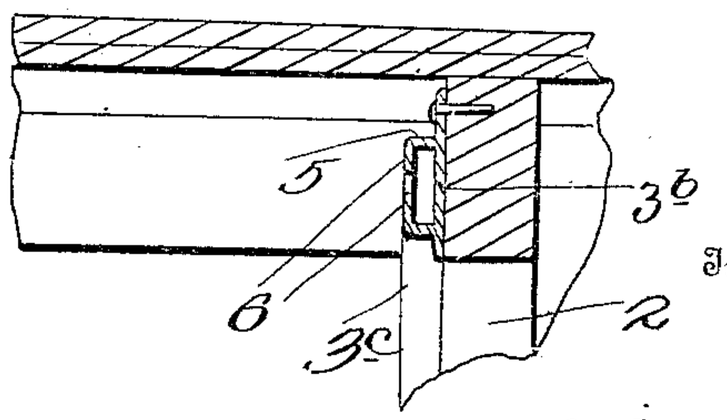




Fig. 6.

Witnesses

Jno. Quinn.

W. P. Woodson

Inventor

N. Hoople

By Lacey, Attorneys

# UNITED STATES PATENT OFFICE.

NELSON HOOPLE, OF DULUTH, MINNESOTA.

## GRAIN-CAR DOOR.

No. 921,701. Specification of Letters Patent. Patented May 18, 1909.

Application filed April 9, 1908. Serial No. 426,098.

*To all whom it may concern:*

Be it known that I, NELSON HOOPLE, citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is a specification.

The object of the present invention is the provision of an improved grain car door embodying a novel construction which admits of the door being securely locked in a closed position or quickly removed from the door way of the car.

The invention further contemplates a strong and durable car door which will form a tight closure so as to prevent leakage of the grain and which owing to the ease with which it can be manipulated will bring about a saving in time and labor.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a portion of a car having the improved grain car door applied thereto. Fig. 2 is a detail view showing the slide and attached parts and a portion of the track, the members being separated. Fig. 3 is a transverse sectional view through the door. Fig. 4 is a sectional view on the line 4—4 of Fig. 3, portions being broken away. Fig. 5 is a perspective view showing a slight modification. Fig. 6 is a transverse sectional view through a further modified form of the door section.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates a car which is provided with the usual door way in one side thereof. Jambs 2 are located upon opposite sides of the door way and secured to the inner sides of the jambs 2 are tracks 3 having the upper portions thereof extended rearwardly. It will thus be apparent that each of the tracks comprises a lower vertical section $3^a$ and an upper horizontal section $3^b$ which is connected to the vertical section by an inclined portion $3^c$. Each of the tracks 3 is formed with a base 4 which is secured to the jamb 2 or other support, and the spaced parallel flanges or sides 5 which project outwardly from opposite sides of the base 4 and terminate in the inwardly extending lips 6. A slide 7 is loosely mounted within each of the tracks 3 and each of the slides is formed with a pair of threaded studs 8 and 9 projecting outwardly therefrom between the lips 6. A clamping plate 10 is fitted upon the stud 8 of each of the slides 7 and is adapted to be forced inwardly against the lips 6 of the track by means of the nuts 11. The opposite stud 9 of each of the slides 7 is designed to loosely receive an eye at one end of a link 12, the opposite end of the link having an operative connection with a door section 13. It will be observed that a washer member 14 is shown as interposed between the link 12 and the track and that a pair of nuts 15 are applied to the stud 9 for preventing disengagement of the link therefrom, the outer nut 15 being jammed against the inner nut 15 to prevent the said nuts from working loose.

The door section 13 fits against the inner edges of jambs 2 and is provided upon its rear face with the transverse stiffening ribs 16 and upon its outer face with the keepers 17 received within eyes at the inner ends of the links 12. It will be observed that the said keepers are formed with a portion $17^a$ which is inclined downwardly and inwardly toward the door section. With this construction it will be obvious that by moving the slides 7 downwardly upon the vertical sections $3^a$ of the tracks the eyes at the inner ends of the links 12 will be drawn downwardly upon the inclined portions $17^a$ of the keepers and a cam action will be produced which will tend to draw the door section securely against the jambs 2 and at the same time force it downwardly toward the floor of the car. When the door section has thus been secured in position it can be locked against displacement by tightening the nuts 11 and forcing the clamping plates 10 against the tracks, the inner faces of the clamping plates being preferably serrated or roughened so as to take a firm hold upon the tracks and prevent movement of the slides.

Should it be desired to move the door section away from the door way of the car the desired result can be quickly accomplished by loosening the clamping plates 10 and moving the slides 5 upwardly upon the horizontal section $3^b$ of the tracks. In this connection attention may be directed to the fact that as the slides are moved upwardly the eyes at the inner ends of the links 12 are

drawn upwardly upon the keepers 17 so as to release the door sections from a close engagement with the door jambs. When the slides are moved upon the horizontal sections $3^b$ of the tracks the door section 13 is suspended from the roof of the car in an out-of-the-way position. It is also contemplated to utilize a number of door sections which also fit against the jambs 2 and may be clamped between the floor of the car and the door section 13 which is connected to the slides 7 mounted upon the tracks. These sections may be either plain or formed with a tongue and groove connection as found most desirable. As shown in Fig. 3 the two sections are plain, the section 18 resting upon the floor of the car having the U-shaped clips 20 applied to the lower edge thereof, a strip 21 which extends along the lower edge of the said door section being secured to the clips. This strip 21 prevents injury to the door section should it become necessary to employ a lever for raising the same as is frequently the case in actual use. However, after the lower door section has been thus raised a few inches the grain flows out through the opening thus formed and releases the upper sections which may be easily removed. The door section 18 between the upper door section 13 and that section 18 resting upon the floor has the metallic strips 22 secured to the upper and lower edges thereof in order to protect the same against injury. In the modification shown in Fig. 5 the section $18^a$ is formed at its opposite longitudinal edges with corresponding tongues and grooves so that when several such sections are assembled the tongue of one section will fit within the groove of the next adjacent section. Under some conditions it may be found desirable as indicated in Fig. 6 to cover the lower door sections with a sheathing 19 of sheet metal or similar material which will serve to protect the same from injury. However, regardless of the specific form of the lower door sections which are clamped in position under the section 13, it will be obvious that the height of the door can be regulated as desired by utilizing the required number of the sections.

Having thus described the invention, what is claimed as new is:

1. In a car door, the combination of a track upon the door jambs, a slide mounted upon the track, a door adapted to fit against the jambs, a keeper applied to the door and formed with an inclined portion, and a link connecting the slide to the keeper and coöperating with the inclined portion of the latter to hold the door in position.

2. In a car door, the combination of a track upon the door jambs, a slide mounted upon the track, means for locking the slide against movement, a door adapted to fit against the jambs, a keeper applied to the door and formed with an inclined portion, and a link loosely connecting the slide to the keeper and coöperating with the inclined portion of the latter to draw the door against the jambs and force it downwardly.

3. In a car door, the combination of a track upon the door jambs, a slide mounted upon the track and provided with a pair of studs, a clamping plate applied to one of the studs and adapted to coöperate with the track to lock the slide against movement, a door adapted to fit against the jambs, a keeper applied to the door and formed with an inclined portion, and a link pivotally mounted upon the opposite stud and having a sliding connection with the inclined portion of the keeper, the said link coöperating with the inclined portion of the keeper to draw the door against the jambs and force it downwardly.

4. In a car door, the combination of a track applied to the door jambs and having the upper portion thereof extended laterally, a slide mounted upon the track, a door adapted to fit against the jambs, a keeper applied to the door and formed with an inclined portion, and a link loosely connecting the keeper to the slide and enabling the door to be drawn against the door jambs and secured in position or released from the door jambs and suspended from the laterally extended portion of the track.

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

NELSON HOOPLE. [L. S.]

Witnesses:
CHARLES K. CARLSON,
N. H. WILSON.