

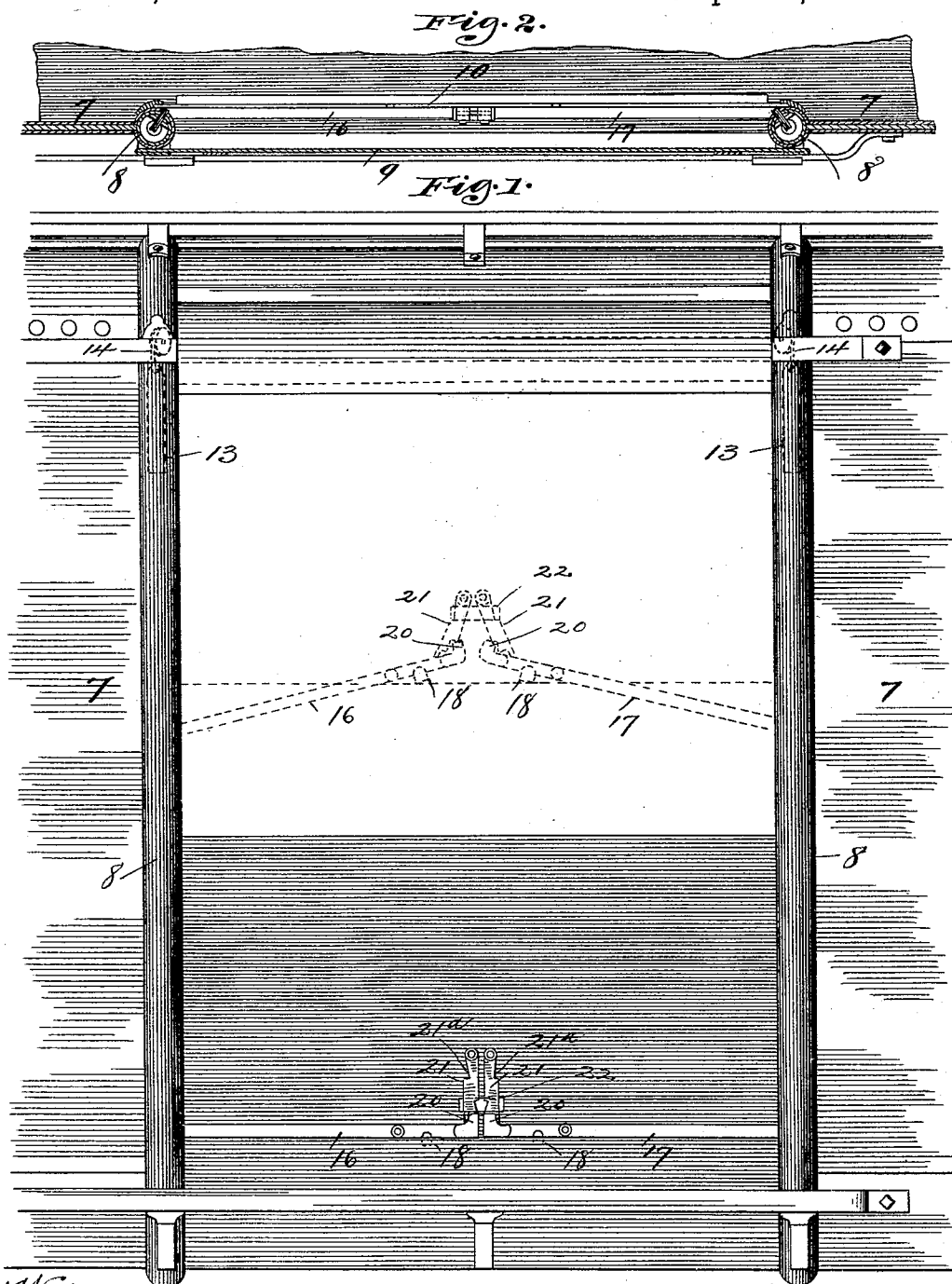
(No Model.)

2 Sheets—Sheet 1.

S. A. JENNINGS.
CAR DOOR.

No. 495,250.

Patented Apr. 11, 1893.



Witnesses,
J. Mamm,
Frederick F. Goodwin

Inventor,
Stephen A. Jennings
By Offield, Fowler & Hutchinson
Attys.

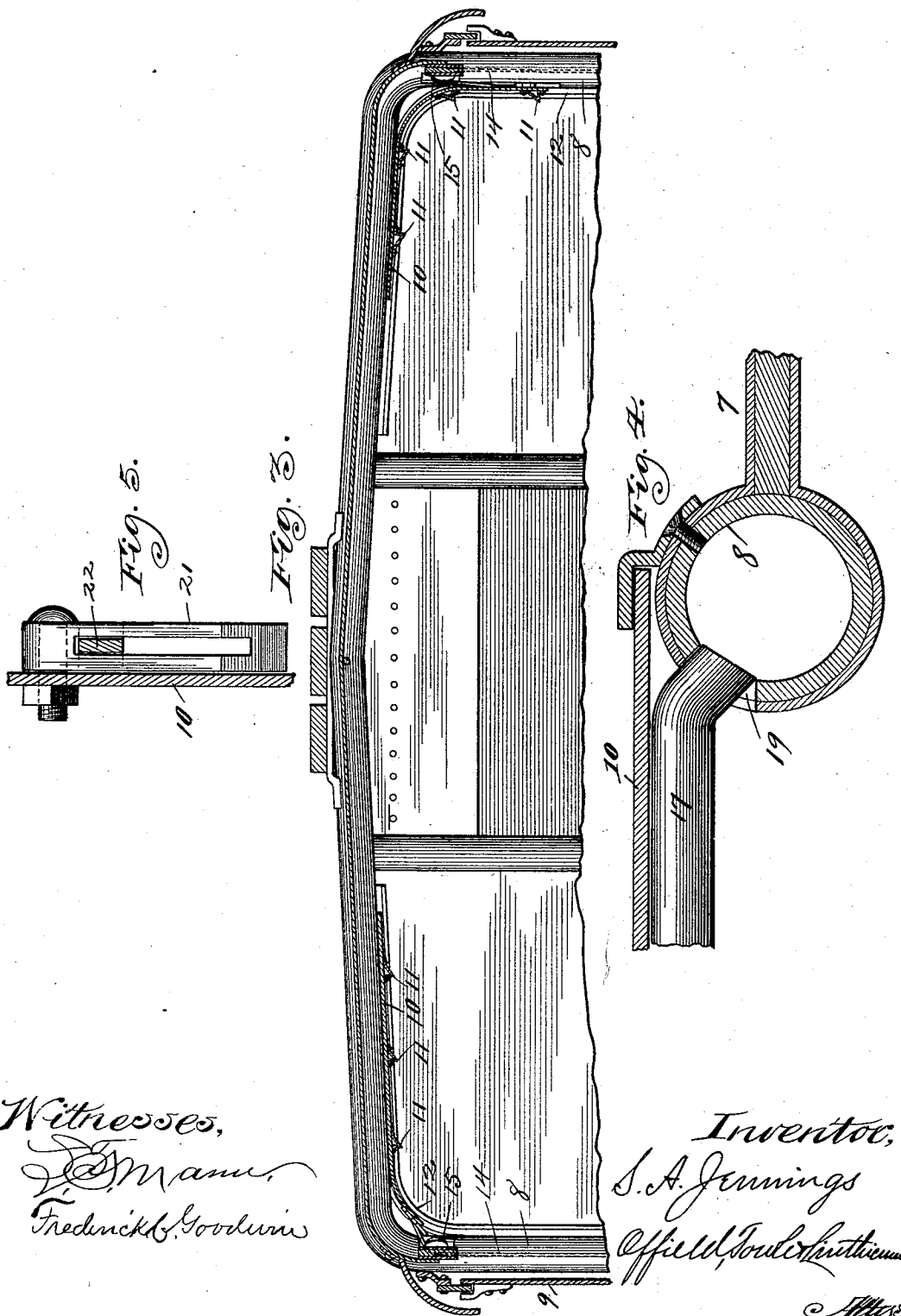
(No Model.)

2 Sheets—Sheet 2.

S. A. JENNINGS.
CAR DOOR.

No. 495,250.

Patented Apr. 11, 1893.



Witnesses,
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Fredrick B. Goodwin

Inventor,
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UNITED STATES PATENT OFFICE.

STEPHEN A. JENNINGS, OF EVANSTON, ILLINOIS, ASSIGNOR TO ARTHUR S. KIRK, OF SAME PLACE.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 495,250, dated April 11, 1893.

Application filed November 27, 1891. Serial No. 413,284. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN A. JENNINGS, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification.

My invention relates to certain improvements in car construction and the object of my invention is to provide freight cars with an improved form of inside or grain door. This door is made of thin sheets of metal, stayed at intervals by longitudinal strengthening ribs, and adapted to bend between said ribs. The doors have counter-balancing weights and cords and are adapted to be shoved up in suitable ways beneath the roof. The cords are fastened at the bottom of the doors and the weights move within the hollows of tubular posts forming the door jambs. I have also provided an improved lock for these doors.

In the drawings, Figure 1 is a view in elevation of a portion of the side of a car at the door and showing the inner door in two positions and showing also the locking mechanism and counter-balancing weights and cords, the latter being indicated by dotted lines. Fig. 2 is a sectional plan view taken through the door posts and showing the relative position of the inner and outer doors. Fig. 3 is an enlarged sectional detail of the roof showing the ways for the sliding door at the upper limit of its travel; and Figs. 4 and 5 are detail views of the grain door lock, the former being a transverse section and the latter a sectional elevation.

In the drawings 7 represents the body of the car and 8 the posts thereof. These posts are hollow tubes or pipes of metal and are bent so that the legs thereof provide the posts while the middle portion forms carlings to support the roof structure.

9 represents the outer door and 10 the inner or grain door. This door 10 is made from sheets of metal, preferably a single sheet, and is provided at intervals with stiffening or strengthening ribs 11 secured horizontally to the inner face of the door. The sheet of metal is of such thickness only as will permit of the

door being curved or bent transversely so as to pass up within the ways 12 secured to the ceiling or lower side of the roof. These ways are continuous from the car floor along its side walls and around the angle of the roof sides and extend out beneath the roof as shown so that the car door may be elevated and, conforming to the curvature of said ways, pass up and rest in the ways beneath the roof when not in use.

In order to elevate the door I have provided counter-balance weights 13 having cords 14 passing over pulleys 15 journaled in the posts. These cords are attached to the edges of the door near its bottom and when force is applied to raise them the weight serves to carry them up and to counter-balance them in lowering the door.

The lock consists, essentially, of two locking bars 16, 17 pivotally secured to the outer face of the grain door and having on their under sides studs 18 which fit into sockets in the floor. The ends of the locking bars pass into apertures 19 in the door posts in order to lock the door. The inner ends of the locking bars are up-turned as shown at 20 and above them are pivoted the gravity latches 21. These latches are slotted horizontally as shown in the sectional detail Fig. 5. The double T-headed key 22 couples these gravity latches together in their normal position, that is when the door is locked, and confines their offset ends upon the up-turned ends 20 of the pivoted locking bars. The outer edges of the latches are cut away near their pivots as shown at 21^a, and when the locking key is raised it will rest in said cut away portion when the lower edges of the latches are separated so as to clear the up-turned ends of the locking bars. When the bars are thus unlocked the door may be raised, and in this movement the studs 18 will be lifted out of their sockets and the ends of the locking bars will be withdrawn from the apertures in the door posts, the bars swinging on their pivots sufficiently to permit this clearance. When the door is lowered to place the ends of the locking bars will enter the apertures in the door posts and they will thus be straightened, the studs 18 entering their sockets. The latches will then swing

into a vertical position and the key will drop down so as to lock the doors, as shown in the full lines in Fig. 1. This device not only serves as a lock which in its principal action is automatic, but it also serves as a strengthening bar for the lower edge of the door by reason of the engagement of the studs 18 with the car bottom and of the bars with the posts. The outer door is closed over the inner one and sealed and protects the lock above described, and it is therefore impossible to unlock the inner or grain door without breaking the seal.

I claim—

1. The combination with a sliding car door composed of a sheet of flexible metal having transverse strengthening ribs and adapted to be flexed between the ribs whereby it may be elevated to pass beneath the roof and a lock therefor comprising locking bolts pivoted to the door and having locking studs adapted to enter sockets in the floor and projecting ends adapted to enter apertures in the door posts, and means for securing the locking bolts from turning upon their pivots, substantially as described.

2. In combination with a car door composed of a sheet of flexible metal having transverse

strengthening ribs and adapted to be flexed between the ribs whereby it may be elevated to pass beneath the roof and a lock therefor comprising locking bolts pivoted to the door, apertures in the door jambs into which the ends of the bolts are adapted to be thrust, said bolts having up-turned ends and a gravity latch adapted to engage said up-turned ends whereby to maintain the bolts in their locked position, substantially as described.

3. In combination with a car door composed of a sheet of flexible metal having transverse strengthening ribs and adapted to be flexed between the ribs whereby it may be elevated to pass beneath the roof and a lock therefor comprising locking bolts pivoted to the door and having their outer ends adapted to enter apertures in the door jambs and their inner ends up-turned, gravity latches pivoted above said up-turned ends and a connecting key sliding in elongated slots in said latches, the latter being cut away on their edges toward their tops whereby to permit their separation to release the bolts, substantially as described.

STEPHEN A. JENNINGS.

Witnesses:

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N. M. BOND.