

(No Model.)

C. F. LANGELL.  
GRAIN DOOR FOR BOX CARS.

No. 518,528.

Patented Apr. 17, 1894.

Fig. I.

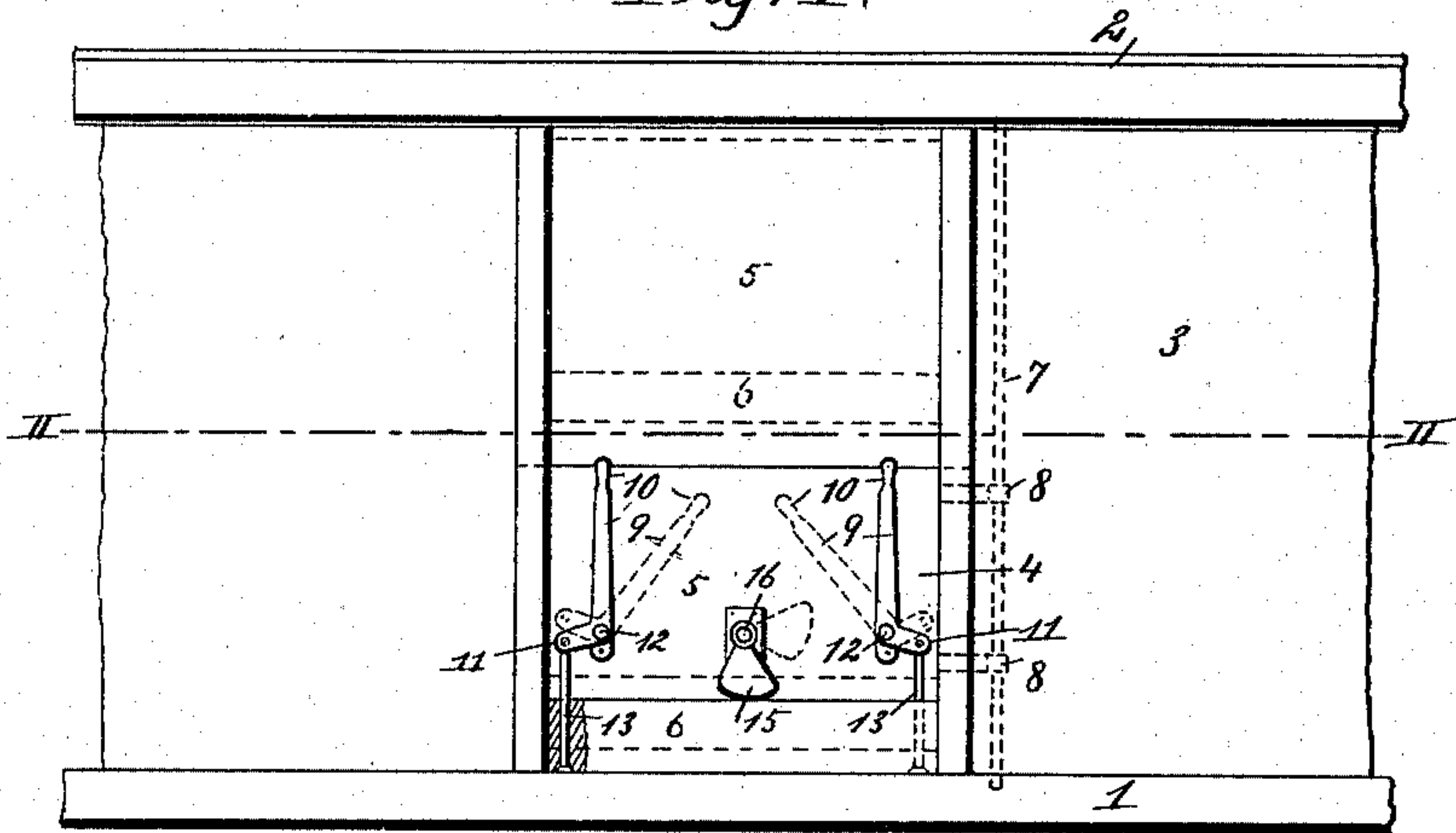


Fig. II.

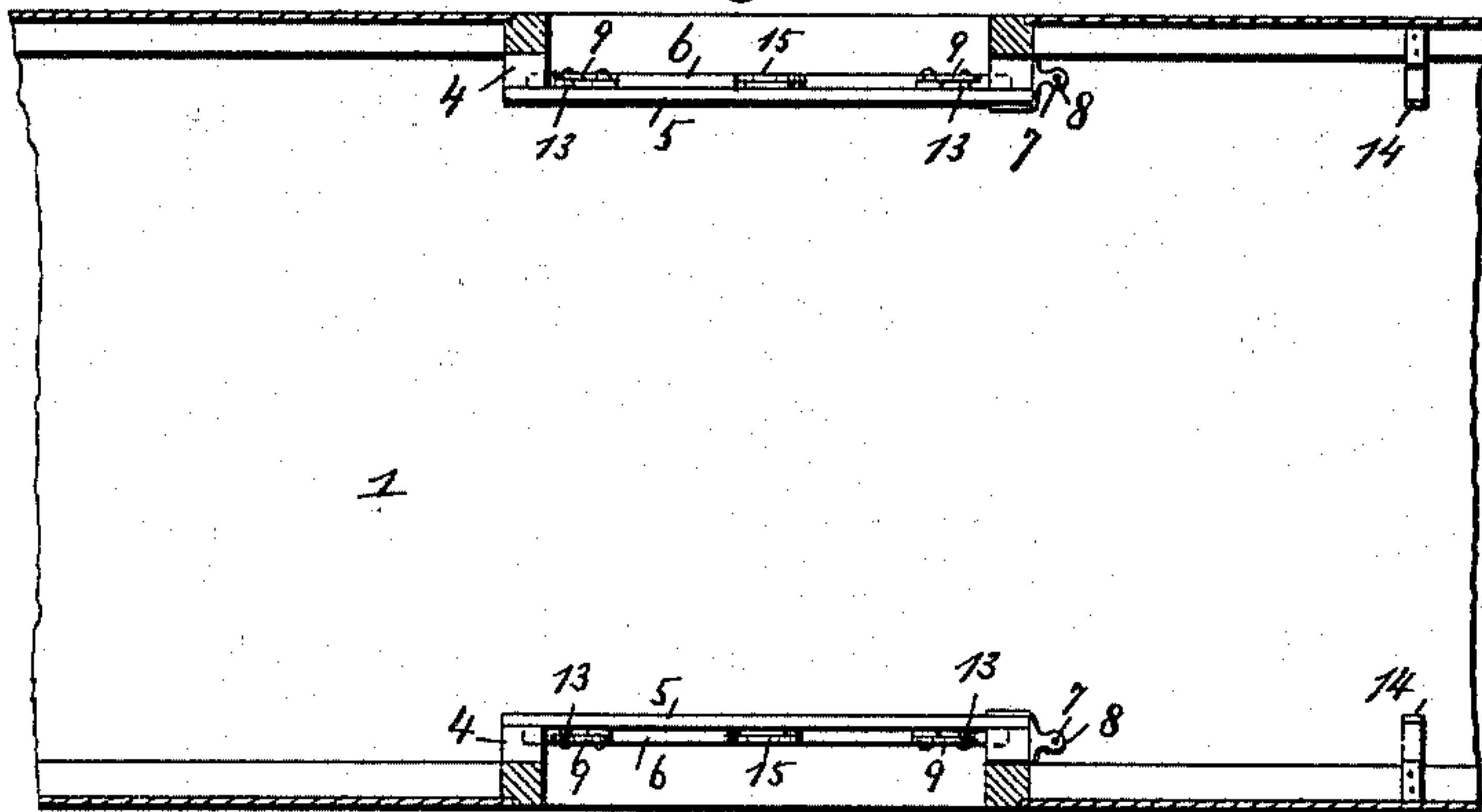
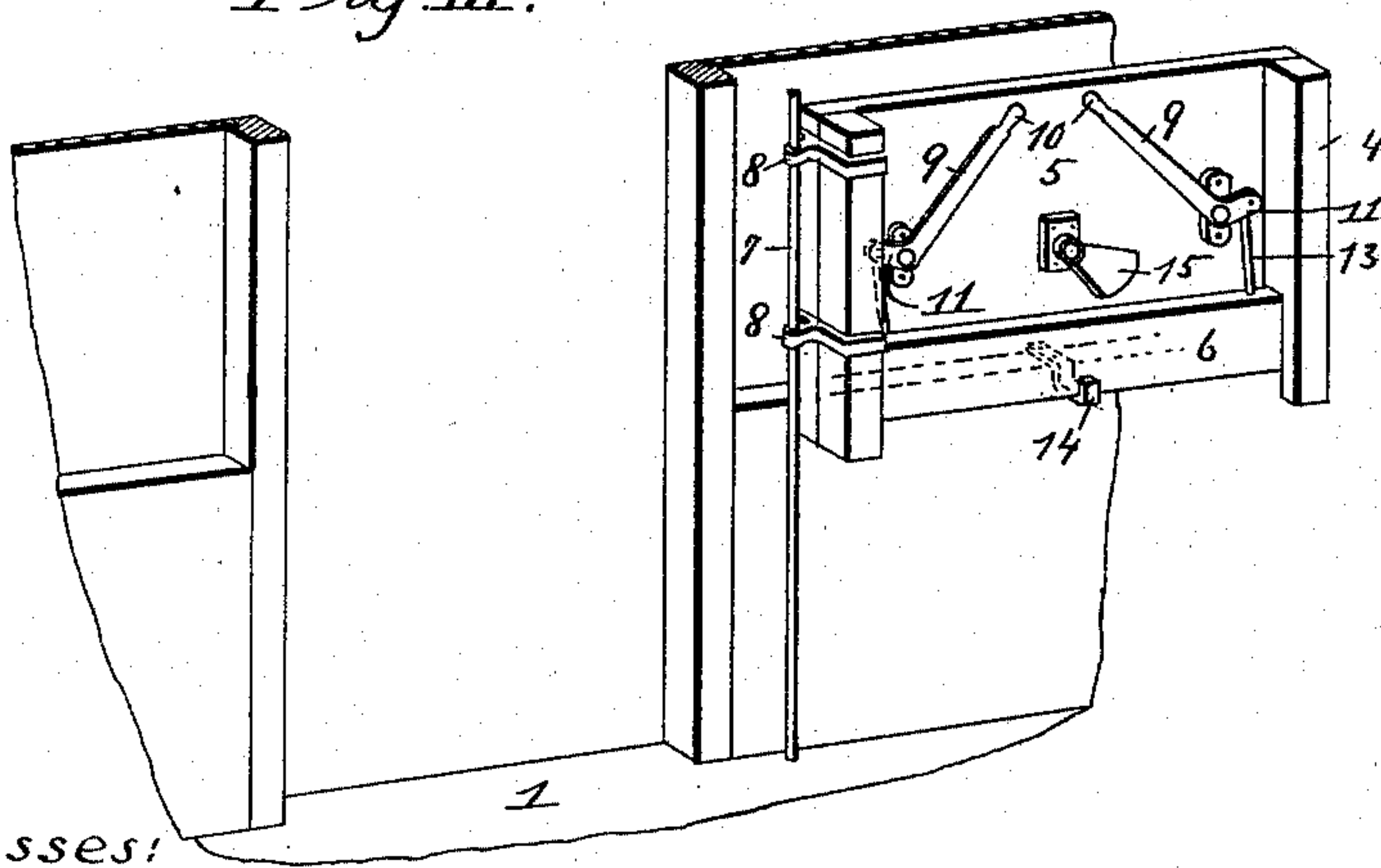


Fig. III.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## GRAIN-DOOR FOR BOX-CARS.

SPECIFICATION forming part of Letters Patent No. 518,528, dated April 17, 1894.

Application filed September 7, 1893. Serial No. 484,965. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES F. LANGELL, of Fort Scott, in the county of Bourbon and State of Kansas, have invented certain new and useful Improvements in Grain-Doors for Box-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to certain new and useful improvements in grain doors for box cars; and my invention consists in features of novelty hereinafter described and pointed out in the claims.

Figure I, represents a side detail elevation of a car with my improved door secured thereto. Fig. II, is a longitudinal section taken on line II, II, Fig. I. Fig. III, is a detail perspective of the inside of a car showing my improved door open and held in position against the inner side of the car.

Referring to the drawings: 1, represents the bottom, 2, the top and 3, the side of an ordinary grain car.

4, represents my improved door made in two sections 5, and 6. The section 5, is hinged to a perpendicular rod 7, extending from the top to the bottom of the car by means of the hinges 8, which permit the door to be moved vertically on the rod 7. The section 6, of the door, which is the section resting on the bottom of the car when the door is closed, and which is the bottom section of the door is connected with the section 5, by means of bell crank levers 9, having handle portions 10, and crank portions 11, said levers being fulcrumed to the section 5 of the door at 12. The section 6, is connected with the levers 9, by means of vertical rods 13, extending through said section and connected with the crank portion of the lever. Thus as the handles of the levers 9, are moved toward each other, as shown in dotted lines Fig. I, or in full lines, Fig. III, from the position shown in full lines, Fig. I, the section 6, of the door is raised a short distance from the floor of the car, thus permitting the grain to flow outward without having to raise the section 5, of the door, which is of much larger area and against which there is the weight of the grain pressing outward. As the grain flows outward

through the opening caused by raising the section 6, the weight against the section 5, is released, at which time the door can be raised bodily on its supporting rod 7, and swung backward and rested upon the hook or bracket 14, secured to the inside of the car, it being thus entirely out of the way until it is desired to again use the door. The section 6, is held firmly in its closed position by means of a cam shaped latch 15, the cam shaped face of the latch resting upon the top of the section 6, and thus firmly holding it in position, the jolting of the car tending to secure the section more firmly than otherwise. The latch 15, is pivoted to the section 5, of the door as shown at 16.

Suitable guides may be used for guiding the section 6, of the door or mortises may be cut within the same if desired, for forming the guide, and preventing the moving of the section out of line with the section 5 of the door.

By the use of my improved door I am readily enabled to discharge grain from a car without in any way injuring the door, which is frequently the case in the use of the ordinary doors in which it is necessary to raise the whole door bodily before the grain can be discharged.

I claim as my invention—

1. A grain door formed in upper and lower sections, the lower section being of less area than the upper section and capable of being raised or lowered, and suitable levers fulcrumed to the upper section for raising or lowering the lower section, substantially as set forth.

2. The combination of a grain car door formed in upper and lower sections, the lower section being of less area than the upper section; bell crank levers connected with said lower section by which the same can be lowered and raised, and a cam shaped latch for holding said lower section locked when the car door is closed; substantially as described and for the purpose set forth.

CHARLES F. LANGELL.

Witnesses:

B. C. GARRISON,  
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