

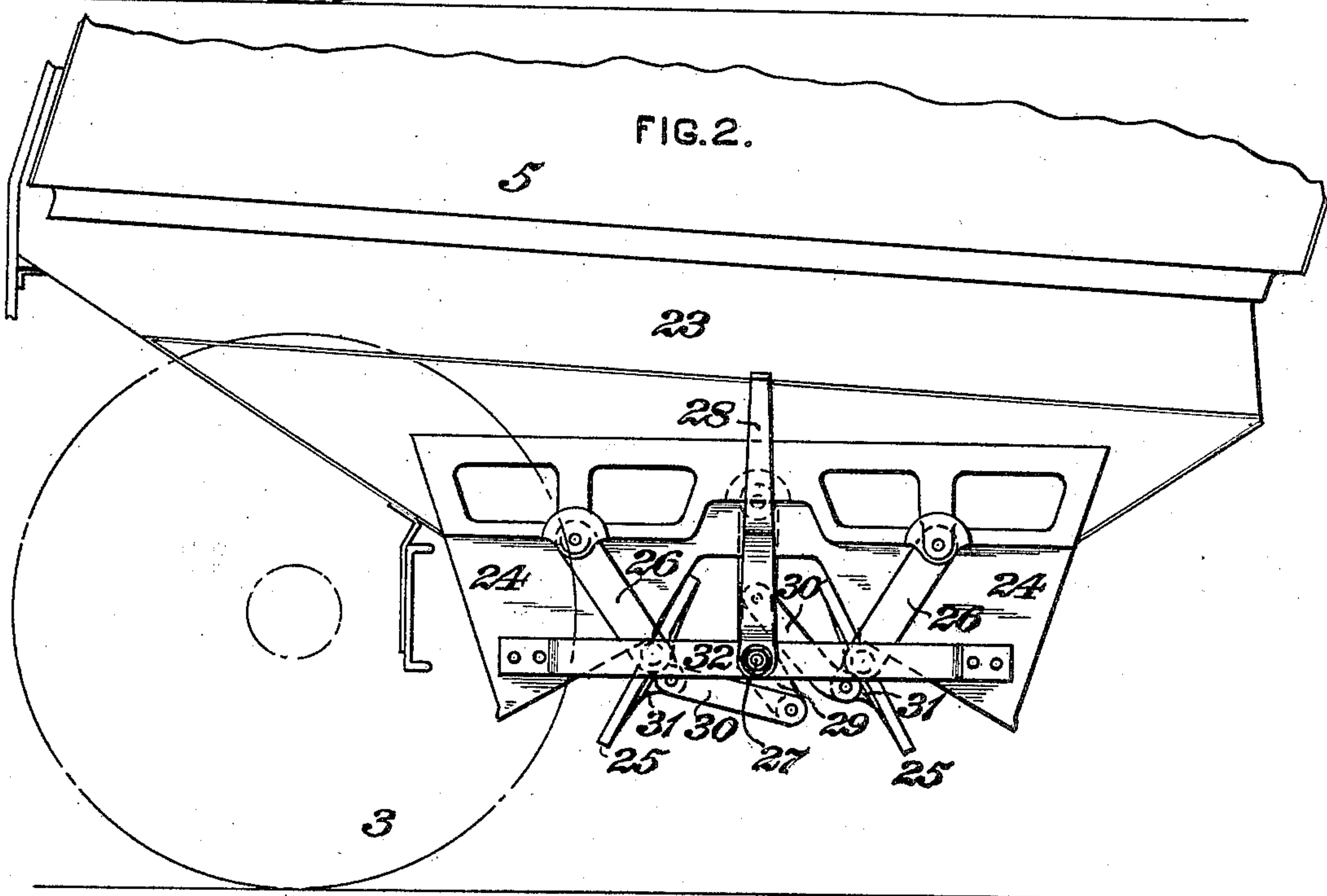
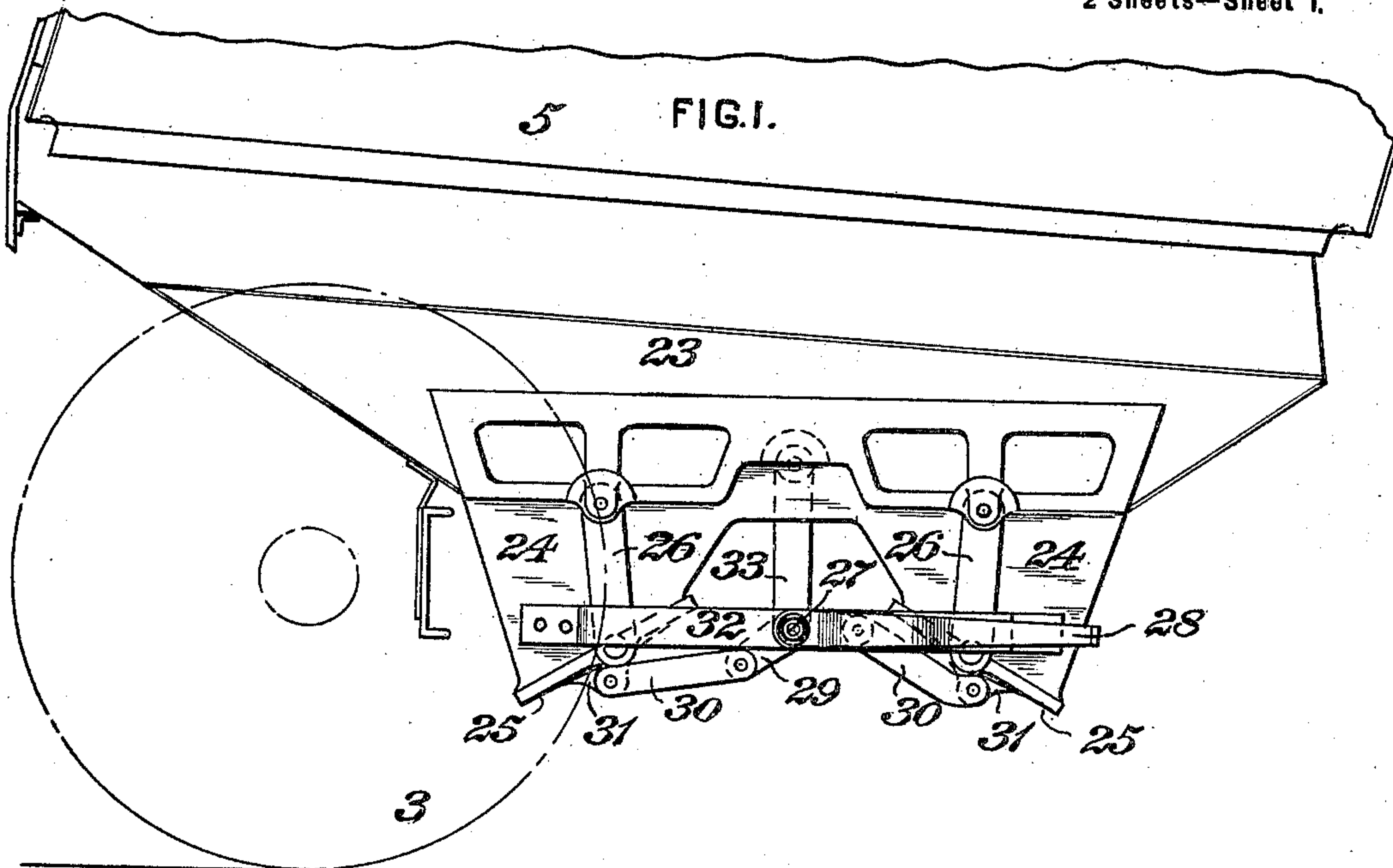
No. 696,485.

Patented Apr. 1, 1902.

J. PLAYER.
LOCOMOTIVE ASH PAN.
(Application filed Nov. 7, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

James C. Herron.
S. R. Bell.

INVENTOR,

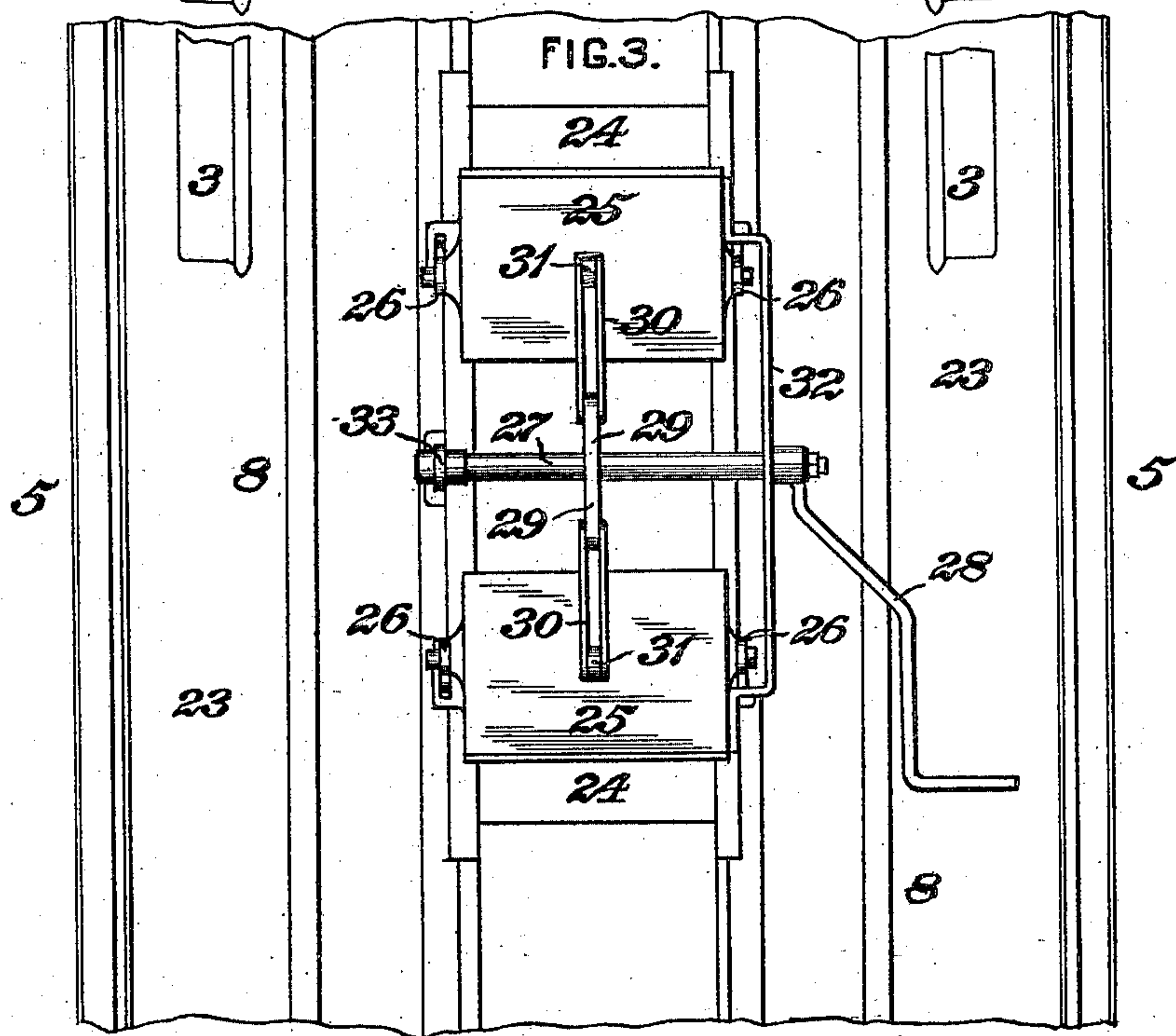
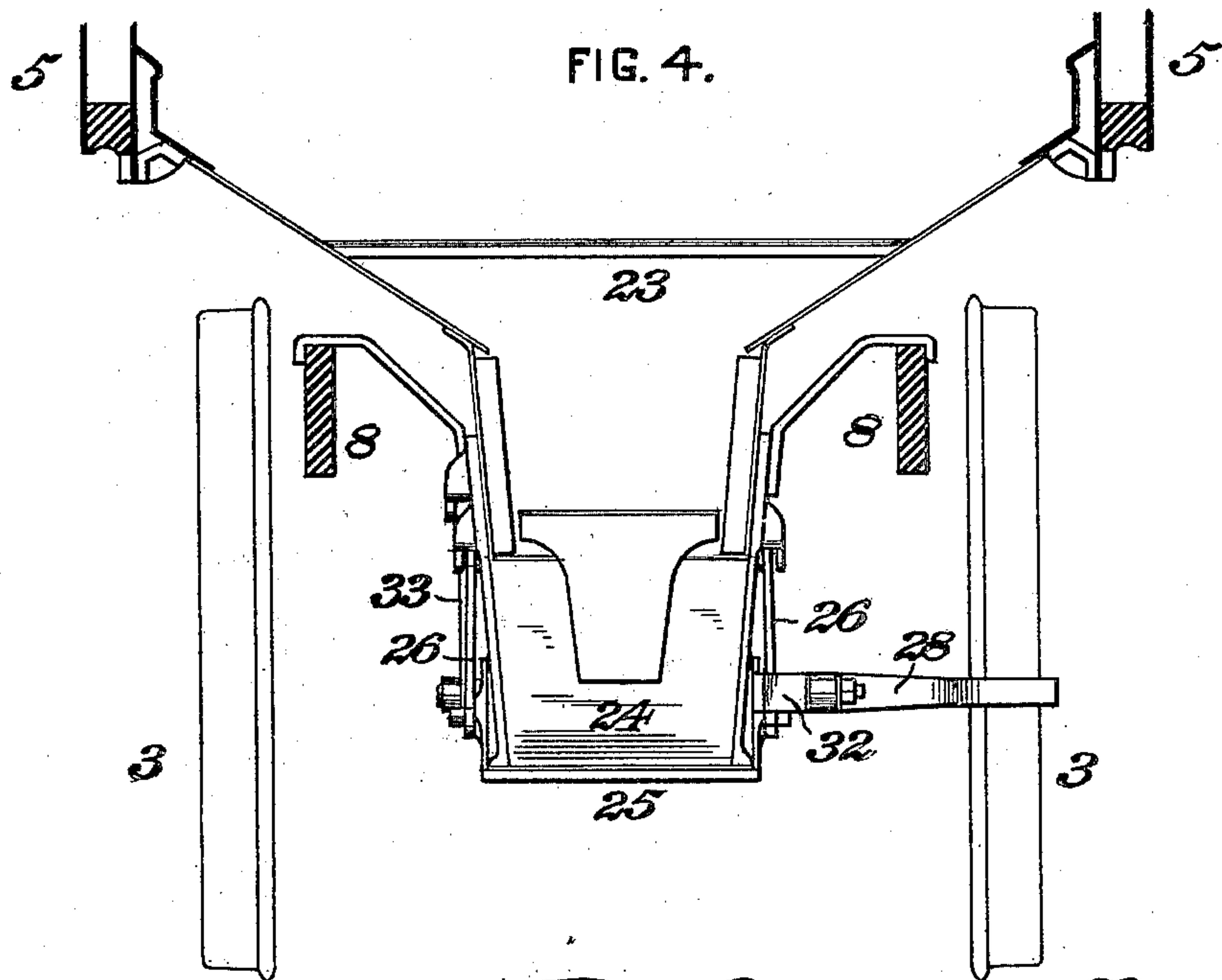
John Player.
by J. H. Allen.

Att'y.

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LOCOMOTIVE ASH PAN.
(Application filed Nov. 7, 1901.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

James C. Heron.
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INVENTOR,

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UNITED STATES PATENT OFFICE.

JOHN PLAYER, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN LOCOMOTIVE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

LOCOMOTIVE ASH-PAN.

SPECIFICATION forming part of Letters Patent No. 696,485, dated April 1, 1902.

Application filed November 7, 1901. Serial No. 81,477. (No model.)

To all whom it may concern:

Be it known that I, JOHN PLAYER, of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful
5 Improvement in Locomotive Ash-Pans, of which improvement the following is a specification.

My invention, while more particularly designed for application in connection with locomotive-boilers of the wide or widened fire-box type, is likewise and equally applicable to those having narrow fire-boxes; and its object is to provide means whereby the contents of the ash-pans of fire-boxes having a comparatively large grate area may be readily and expeditiously discharged from time to time as desired and the discharge-opening be maintained tightly and securely closed during the periods intervening between the discharge operations.
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The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side view in elevation of a locomotive ash-pan, illustrating an application of my invention with the discharge-doors closed, as in the running condition of the engine; Fig. 2, a similar view with the discharge-doors opened to dump or discharge the contents of the ash-pan; Fig. 3, an inverted or bottom plan view; and Fig. 4, a partial transverse section through the fire-box, showing the ash-pan in end elevation.
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My invention is herein illustrated as applied in connection with a wide fire-box 5, which is located above a pair of trailing wheels 3. The upper section or body 23 of the ash-pan, which is formed of sheet or plate metal and connected to the fire-box in the usual manner, is inwardly and downwardly tapered, so as to clear the wheels 3 and frame 8 of the engine and to direct the residuum which drops into it from the superposed grate toward its middle portion. The lower section of the ash-pan, which is preferably made of cast metal, is in the form of one or more hoppers or discharge-chutes 24, two being shown in this instance, each of which is open at top to the upper section and has an inclined bottom in which there is formed a discharge-opening, preferably extending throughout the full dis-
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tance between the side and the end walls of the hopper and closed by a discharge-door 25, which is fitted to abut against and make a tight joint with the walls of the hopper around the discharge-opening. Each of the discharge-doors is suspended upon the sides of its hopper in such manner as to be automatically closed and maintained in contact with the bottom thereof by gravity. To this end the discharge-door is pivoted at its sides to the lower ends of a pair of hangers or suspension-links 26, the upper ends of which are in turn pivoted to the side walls of the hopper, the pivots of the doors being located in such position thereon that when the door is closed the suspension-links will stand in an inclined plane which intersects the door above the intersection therewith of the vertical axial plane of the pivots by which the suspension-links are coupled to the hopper. Under such construction it will be seen that, except when restrained by the application of an excess of force acting in the opposite direction, the door will be swung into and held in closed position by the action of gravity upon it and its suspension-links, and in holding the door closed such action will be exerted irrespective of the downward pressure which may be exerted on the door by the weight of the material which may be contained in the body of the ash-pan and the hopper.
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The discharge-doors 25 are opened to effect the discharge of material from the hoppers when desired by means of a transverse operating-shaft 27, having a hand-lever 28, by which it may be rocked in its bearings, fixed upon one of its ends and projecting outwardly in position to be conveniently accessible to the fireman. Oppositely-projecting arms 29 are fixed upon the shaft 27, substantially in the longitudinal central plane of the ash-pan, and are coupled by links 30 to lugs 31 on the discharge-doors. By movement of the lever 28 into the position shown in Fig. 2 the doors 25 will be opened, and upon the release of the lever they will be closed by gravity and remain in their normal positions—i. e., in bearing against the bottoms of the hoppers—until the hand-lever is again manipulated.
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In discharging the contents of the hoppers when two or more of them are employed, as

is ordinarily the case, it is desirable that the doors should be simultaneously opened and that their opening and closing movements should be equalized to prevent jamming and permit them to freely adjust themselves under all conditions to their bearing-surfaces on the bottoms of the hoppers. To this end a floating or sliding connection of the doors is preferably provided, a connection of such character being effected in the instance shown by journaling one end of the operating-shaft 27 in a rigid bearing, which is formed in a horizontal bar 32, fixed to one side of the hoppers, while the opposite end of said shaft is journaled in a floating bearing formed in the lower end of a link 33, the upper end of which is journaled on a pin fixed to the side of the hoppers opposite that to which the bar 32 is connected. Under this construction the sticking of one of the doors in opening will not cause it to act as a fulcrum for the other, as the degree of floating movement admitted in the arms of the operating-shafts to which the doors are coupled will cause them to be moved simultaneously and allow them to correctly adjust themselves to their seats on the bottoms of the hoppers.

My invention has been found in practice to enable the contents of large ash-pans to be readily and expeditiously discharged, and the mechanism employed, which is of ready application in locomotives of the various types now approved in service, insures the effective closure of the discharge-openings of the ash-pan while the engine is running, thereby preventing liability to the dropping of hot cinders upon the right of way. The doors, being exempt from risk or being choked or jammed by accumulations of cinders or snow or ice, may be easily opened whenever desired.

I claim as my invention and desire to secure by Letters Patent—

1. In a locomotive ash-pan, the combination of an upper section or body, a lower hopper or discharge-chute communicating therewith and having an inclined bottom provided with a discharge-opening, and a discharge-door suspended in position to be normally seated on the hopper-bottom by the action of gravity.

2. In a locomotive ash-pan, the combination of an upper section or body, a lower hopper or discharge-chute communicating therewith and having an inclined bottom provided with a discharge-opening, a discharge-door suspended in position to be normally seated on the hopper-bottom by the action of gravity, and means for unseating the discharge-door by the application of an oppositely-acting force.

3. In a locomotive ash-pan, the combination of an upper section or body, a lower hopper or discharge-chute communicating therewith and having an inclined bottom provided with a discharge-opening, a discharge-door adapted to seat on the hopper-bottom and close the discharge-opening thereof, and

swinging suspension-links supporting the discharge-door, and coupled thereto in position to permit it to be normally closed by gravity and to be opened by the application of an oppositely-acting force.

4. In a locomotive ash-pan, the combination of an upper section or body, a lower hopper or discharge-chute communicating therewith and having an inclined bottom provided with a discharge-opening, a discharge-door adapted to seat on the hopper-bottom and close the discharge-opening thereof, and swinging suspension-links pivoted at their upper ends to fixed supports and at their lower ends to the door, a vertical plane passing through the lower pivots intersecting the door, when closed, above the intersection therewith of a vertical plane passing through the upper pivots.

5. In a locomotive ash-pan, the combination of an upper section or body, a lower hopper or discharge-chute communicating therewith and having an inclined bottom provided with a discharge-opening, a discharge-door adapted to seat on the hopper-bottom and close the discharge-opening thereof, swinging suspension-links supporting the discharge-door and coupled thereto in position to permit it to be normally closed by gravity, an operating-shaft journaled transversely to the hopper, and a link connection coupling the discharge-door to an arm on the operating-shaft.

6. In a locomotive ash-pan, the combination of an upper section or body, two lower hoppers or discharge-chutes communicating therewith and having their bottoms provided with discharge-opening and inclined in relatively opposite directions, discharge-doors adapted to seat on the hopper-bottoms and close the discharge-openings thereof, pairs of swinging suspension-links, each of which supports one of the discharge-doors and is coupled thereto in position to permit it to be normally closed by gravity, and operating connections, having an interposed floating or sliding bearing, through which opening movement is imparted to the discharge-doors.

7. In a locomotive ash-pan, the combination of an upper section or body, two lower hoppers or discharge-chutes communicating therewith and having their bottoms provided with discharge-openings and inclined in relatively opposite directions, discharge-doors adapted to seat on the hopper-bottoms and close the discharge-openings thereof, pairs of swinging suspension-links, each of which supports one of the discharge-doors and is coupled thereto in position to permit it to be normally closed by gravity, an operating-shaft journaled between and transversely to the hoppers, and connections coupling the discharge-doors to oppositely-projecting arms on the operating-shaft.

8. In a locomotive ash-pan, the combination of an upper section or body, two lower hoppers or discharge-chutes communicating

therewith and having their bottoms provided
with discharge-openings and inclined in rela-
tively opposite directions, discharge-doors
adapted to seat on the hopper-bottoms and
5 close the discharge-openings thereof, pairs of
swinging suspension-links, each of which sup-
ports one of the discharge-doors and is cou-
pled thereto in position to permit it to be nor-
mally closed by gravity, an operating-shaft
10 located between and transversely to the hop-

pers, a fixed journal-bearing fitting one end
of the operating-shaft, a movable journal-
bearing fitting the opposite end of said shaft,
and connections coupling the discharge-doors
to oppositely-projecting arms on said shaft. 15

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Witnesses:

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