J. B. ENNIS & H. F. BALL.

LOCOMOTIVE ASH PAN.

APPLICATION FILED APR. 1, 1909.

954,274.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.

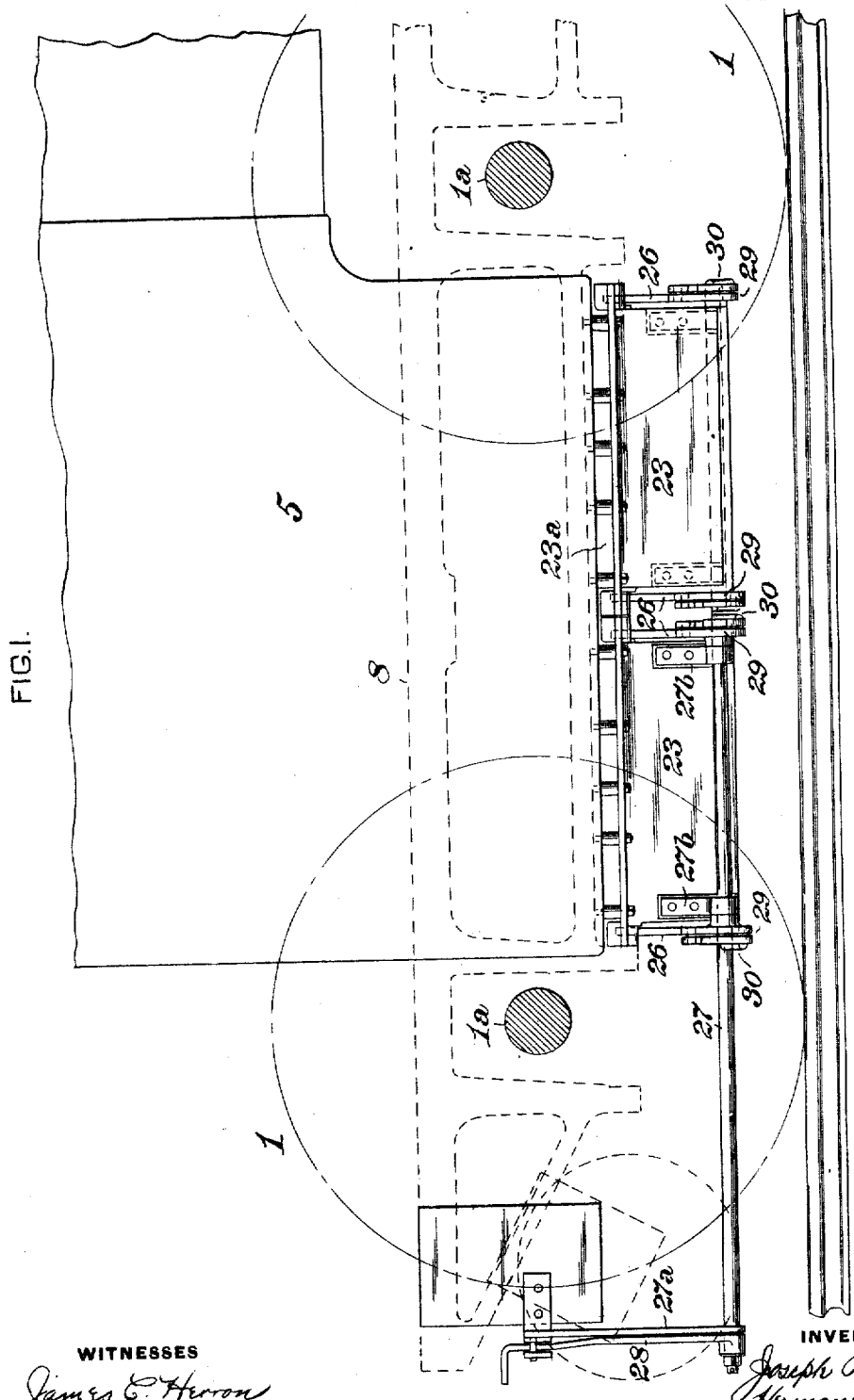

FIG. I.

WITNESSES

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2 SHEETS—SHEET 2.

FIG. 3.

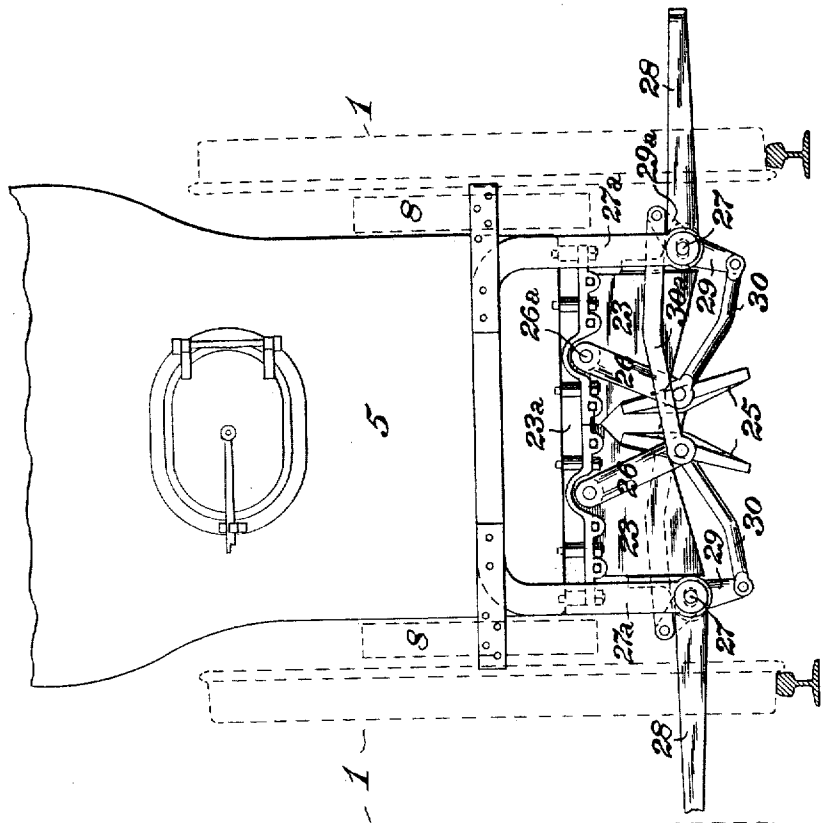
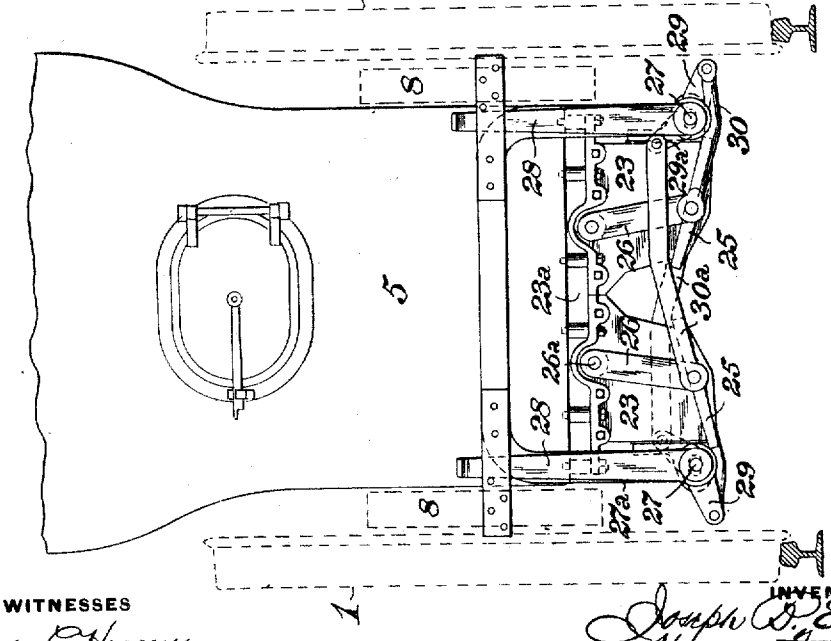


FIG. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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LOCOMOTIVE ASH-PAN.

954,274. Specification of Letters Patent. Patented Apr. 5, 1910.

Application filed April 1, 1909. Serial No. 487,112.

To all whom it may concern:

Be it known that we, JOSEPH B. ENNIS, of Paterson, in the county of Passaic and State of New Jersey, and HERMAN F. BALL, of the borough of Manhattan, in the county and State of New York, have jointly invented a certain new and useful Improvement in Locomotive Ash-Pans, of which improvement the following is a specification.

Our invention, while more particularly designed for application in connection with locomotive boilers having fireboxes of the narrow and deep type, is also adaptable to those having wide fireboxes, and its object is to provide means whereby the contents of the ash pan may be readily and completely discharged from time to time as desired, without necessitating the operator going under the engine for the purpose, and the discharge openings may be maintained tightly closed during the periods between the discharge of ashes so as to securely retain all the ashes in the ash pan during said periods.

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 embodying our invention; Fig. 2, a rear view, in elevation, showing the discharge doors closed, and; Fig. 3, a similar view showing the discharge doors open.

Our invention is herein illustrated as applied in connection with a locomotive firebox, 5, of the narrow and deep type, which is located, longitudinally, between two driving axles, 1^a, each carrying a pair of driving wheels, 1, and, transversely between the side members of the main frame, 8, in which the driving axles are journaled. The body of the ash pan, 23, which may be either of cast or wrought plate metal, consists of open topped hopper sections or casings, which are preferably formed in pairs, the members of which are located on opposite sides of the longitudinal central plane of the firebox, and secured by bolts to a rectangular frame, 23^a, which is, in turn, secured to the mud ring of the firebox.

The bottoms of the hopper sections, which are entirely open, in each pair of sections, and inclined outwardly and downwardly from the longitudinal central plane of the firebox, are closed by tightly fitting discharge doors, 25, which are pivoted longitudinally, above their middle longitudinal planes, to the hopper sections, 23, by hangers or suspension links, 26, the upper ends of which are coupled to pins, 26^a, fixed in the ends of the hopper sections. The links are normally outwardly inclined as shown in Fig. 2. By so suspending the discharge doors, they will be closed and maintained in contact with the bottoms of the hopper sections until released for opening by an operator, and keep them closed regardless of the weight of the ashes resting on them or of the jarring of the locomotive. The relation of the discharge doors to the hopper sections, when suspended as above, is such that in swinging clear of the latter they will be thrown toward the longitudinal central plane of the firebox, thus requiring comparatively little space for their operation and fully exposing the openings in the bottoms of the hoppers for the discharge of ashes therefrom.

The discharge doors, 25, of the front and the rear pairs of hoppers are independently opened and closed by operating shafts, 27, which extend longitudinally along their outer sides and are journaled in slots in brackets, 27^a, secured to the frame, and brackets, 27^b, secured to the outer sides of the hopper sections, 23, the shafts being rocked in their bearings by hand levers, 28, fixed upon their rear ends. The slots in which the operating shafts are journaled, lie at right angles to the sides of the hopper sections, so as to admit of the seating of the doors without undue strains on the operating rigging. The shaft, 27, on one side of the ash pan, in this case the left hand side, extends to the front of the forward hopper section on that side, and the shaft, 27, on the opposite side, extends only to the front of the rear hopper section on that side. Arms, 29, fixed on the shafts, 27, are coupled, by links, 30, to the adjacent discharge doors, 25, in line with the pivots thereof, and arms, 29^a, on said shafts, are coupled by links, 30^a, to the opposite discharge doors. It will be understood that the arms and coupling links are located in such longitudinal relation to the discharge doors that the doors of the rear pair of hopper sections are operated by one of the shafts, 27, in this case the right hand shaft, and those of the for-

ward pair of hoppers are independently operated by the other shaft, 27, in this case the left hand shaft.

The movement of either of the hand levers, 28, outwardly exerts a force upon the connected discharge doors, and the doors of each pair of hopper sections are thereby released and swung upwardly for discharge into the positions shown in Fig. 3. Movement of the hand levers in the opposite direction acts to restore the doors to their normally closed position, in which they remain, as before noted, without tendency to accidental displacement.

We claim as our invention and desire to secure by Letters Patent:

1. In a locomotive, an ash pan, comprising a body having bottom discharge openings, the lower ends of said body being downwardly and oppositely inclined from the longitudinal vertical central plane of the locomotive and ash pan, discharge doors suspended from the body in position to be swung upwardly and inwardly and in a direction transverse to the longitudinal axis of the ash pan and seated over the openings, and means at one end of the ash pan for unseating and moving said doors toward the longitudinal central plane.

2. In a locomotive, an ash pan, comprising a body having bottom discharge openings, the lower ends of said body being downwardly and oppositely inclined from the longitudinal vertical central plane of the locomotive and ash pan, discharge doors closing said openings, links suspending said doors from the body in position to be swung upwardly and inwardly and in a direction transverse to the longitudinal axis of the ash pan and seated over the openings, and means at one end of the ash pan for unseating and moving said doors toward the longitudinal central plane.

3. In a locomotive, an ash pan, comprising a body having bottom discharge openings, the lower ends of said body being downwardly and oppositely inclined from the longitudinal vertical plane of the locomotive and ash pan, discharge doors closing said openings, links suspending said doors from the body in position to be swung upwardly and inwardly and in a direction transverse to the longitudinal axis of the ash pan and seated over the openings, an operating shaft journaled longitudinally on one side of the body, and link connections coupling said doors to the operating shaft.

4. In a locomotive, an ash pan, comprising a body having bottom discharge openings, the lower ends of said body being downwardly and oppositely inclined from the longitudinal vertical central plane of the locomotive and ash pan, discharge doors closing said openings, links suspending said doors from the body in position to be swung upwardly and inwardly and in a direction transverse to the longitudinal axis of the ash pan and seated over the openings, bearings secured to one side of the body, an operating shaft journaled in the bearings, and link connections coupling the discharge doors to the operating shaft.

5. In a locomotive, an ash pan, comprising a body having a forward and a rear pair of hopper sections, each pair having bottom discharge openings, the lower ends of said body being downwardly and oppositely inclined from the longitudinal vertical central plane of the locomotive and ash pan, discharge doors closing said openings, links suspending said doors from the body in position to be swung upwardly and inwardly and in a direction transverse to the longitudinal axis of the ash pan and seated over the openings, operating shafts journaled longitudinally on opposite sides of the body, link connections coupling the doors of one pair of hopper sections to one of the operating shafts, and link connections coupling the doors of the other pair of hopper sections to the other operating shaft.

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