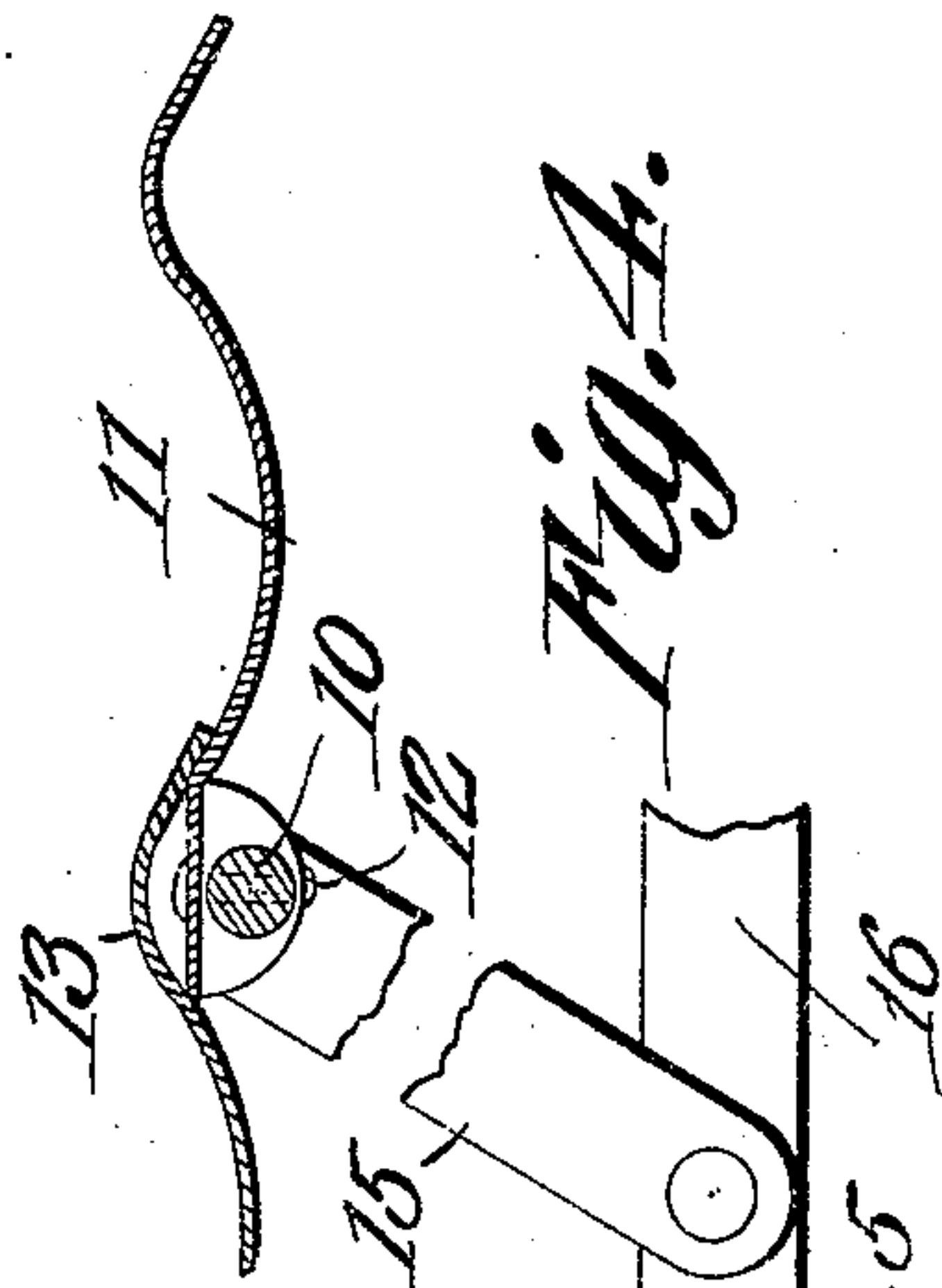
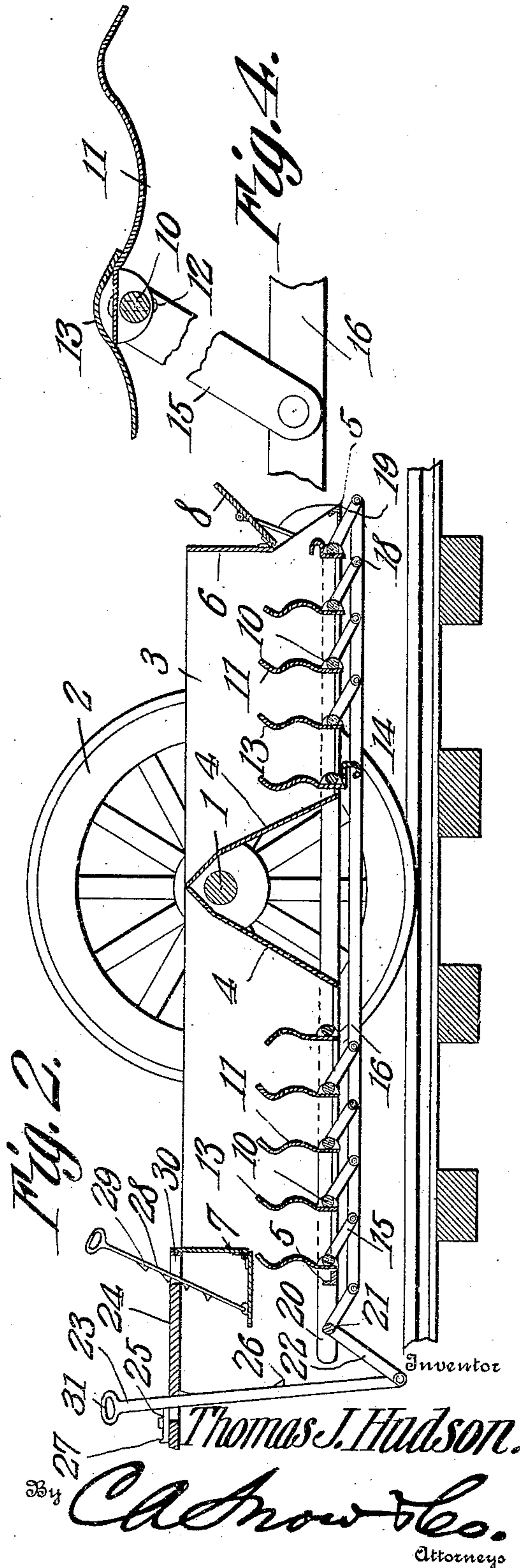
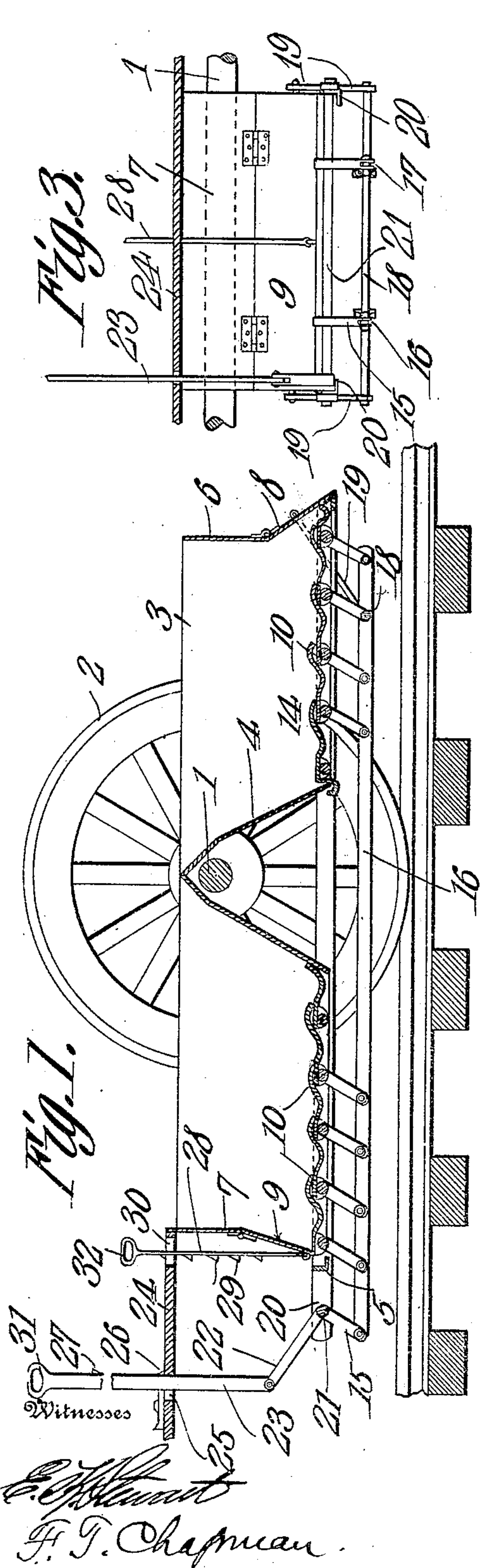


T. J. HUDSON.
DUMPING ASH PAN.
APPLICATION FILED FEB. 13, 1909.

955,072.

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UNITED STATES PATENT OFFICE.

THOMAS J. HUDSON, OF SUTTON, WEST VIRGINIA, ASSIGNOR OF ONE-HALF TO
WILLIAM W. SCOTT, OF WASHINGTON, DISTRICT OF COLUMBIA.

DUMPING ASH-PAN.

955,072.

Specification of Letters Patent.

Patented Apr. 12, 1910.

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To all whom it may concern:

Be it known that I, THOMAS J. HUDSON, a citizen of the United States, residing at Sutton, in the county of Braxton and State of West Virginia, have invented a new and useful Dumping Ash-Pan, of which the following is a specification.

This invention has reference to improvements in dumping ash-pans designed particularly for use with locomotive engines and its object is to provide a dumping ash-pan which shall be light and strong and at the same time hold the ashes received from the grate without danger of the escape of the ashes except at the will of the operator.

The improved ash-pan is designed particularly for use with the Atlantic type of locomotive engine and is provided with means whereby access to the interior of the pan is provided and the pan is so constructed as to not interfere with the draft to the fire-box of the locomotive when the dumping portion of the pan is in the inactive or closed position.

The invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming a part of this specification in which drawings,

Figure 1 is a longitudinal section of the improved dumping pan showing one of the main axles and driving wheels of a locomotive. Fig. 2 is a similar view with the pan in the open or dumping position. Fig. 3 is an end view of the pan taken from the rear of the engine. Fig. 4 is a detail view on a larger scale than the other figures of a portion of the bottom of the pan.

Referring to the drawings there is shown the axle 1 and one of the drive wheels 2 of a locomotive and this showing may be taken as indicative of a locomotive of any suitable type, although the showing is that of a locomotive where one of the main axles passes through the ash-pan.

Depending from the fire-box and suitably supported in the usual manner, although the supports are not shown in the drawings, is an ash-pan 3 which in general shape may be that usually employed for the purpose. At about the middle portion of the pan is a bridge partition 4 rising to a suitable height to permit of the passage of the axle 1 beneath its crown.

The ash-pan is substantially rectangular

in shape and around the bottom thereof there is secured an angle iron frame 5, angle iron being preferred for this purpose. The front and rear walls 6 and 7 of the ash-pan are cut away at the lower end for the reception of doors 8 and 9 respectively, these doors acting as dampers for the introduction of air beneath the grate of the fire-box.

Extending across the bottom of the ash-pan and journaled at the ends in the side members of the frame 5 are two series of bars or rods 10, one series being in front of the bridge 4 and the other to the rear thereof. Each of the rods 10 carries one end of a plate 11, the said plate being flattened where it is attached to the rod 10 by means of rivets 12 or otherwise and from the rod out toward the free end of the plate the latter is sinuous or corrugated, the said sinuosities or corrugations extending in the direction of the width of the ash-pan. Each plate 11 is of such length that the sinuosity 13 at its free end will over-ride the flattened end of the next succeeding plate or preceding plate in accordance with the direction of projection of the plates from the rods 10. In the structure shown in the drawings the free ends of the plates project forward toward the front end of the engine. The foremost plate 11 is shown as shortened to engage inside the door 8 and the rearmost plate of the forward series of plates is continued rearwardly and shaped as shown at 14 to engage under the lower end of the forward wall of the bridge 4. The foremost plate of the rearward series of plates is shaped to lie snugly against the lower end of the rear wall of the bridge 4. Otherwise the plates are shaped as already described and as shown in the figures.

Attached to the bars 10 are downwardly extending rock arms 15, there being two such arms shown for each bar 10. These arms project downwardly and all those on one side of the ash-pan are connected to a common bar 16 and those on the other side of the ash-pan are connected to a common bar 17. One pair of arms 15 near the front end of the ash-pan are connected together by a pivot rod 18 and this rod is also connected by links 19 to the door 8 so that when the bottom of the ash-pan is opened for dumping purposes in a manner which will hereinafter appear, the door 8 is also opened.

At the rear end of the ash-pan the side

members of the frame 5 are continued rearwardly as indicated at 20 and these rearward extensions carry a rod 21 to which there are also secured rock arms 15 connected at their lower ends to the rods 16 and 17. Also fast on the rod 21 is another rock arm 22 to which is pivoted the lower end of a rod 23 extending upward through the floor 24 of the cab by way of a suitable passage 25 in said floor, the said rod 23 being provided with a tooth 26 adapted to engage the floor at one side of the passage 25 which passage however is sufficiently large to permit the tooth to be moved through said passage. A latch member 27 on the floor of the cab serves to lock the rod 23 against one wall of the passage 25 with the tooth 26 engaging the upper surface of the floor 24. In this position of the parts the plates 11 are in a substantially horizontal position with their free ends overlapping the flattened ends of the next preceding plates so that the bottom of the floor of the ash-pan is practically continuous, the fitting of the parts being sufficiently close to prevent the passage of ashes therethrough.

The rear draft door 9 is under the control of another rod 28 having a number of teeth 29 therealong, and this rod also extends through a passage 30 in the floor 24. When the door 9 is lifted to any open position some one of the teeth 29 is caught on the edge of the passage 30 and the door is thereby held in the open position. The rods 23 and 28 are provided with manipulating handles 31 and 32 respectively within reach of the operator on the engine.

When it is desired to dump the ash-pan the rod 23 is forced downward thus rotating the rock shaft 21 and by it the rods 16 and 17 are moved forward imparting a like rocking movement through the arms 15 to all the rods 10. This will cause the free ends of each plate 11 to move away from the next adjacent plate, the end 13 rising through an arc until the plates are substantially vertical. In this position the ashes will gravitate freely from the ash-pan to the roadbed or to the ash-pit usually provided for the purpose. When the rod 23 is again permitted to rise on being released from the latch 27 the plates 11 are brought into their former horizontal position with the sinuosities 13 of the plates overlapping the adjacent ends of the next succeeding plates.

The front door 8 is made to open by the act of dumping the ash-pan because the clinkers are deposited at this end of the ash-pan by the usual drop grate and will then find ready escape from the front door 8. This avoids the necessity of opening this door from beneath the engine. The ash-pan may therefore be readily dumped and thoroughly cleansed of both small ashes and large clinkers even when the engine is running, say down long grades.

Because of the shape of the plates 11 they may be made quite thin and light and still be amply strong for the purpose. Furthermore the plates being made of thin or sheet metal may be readily rolled into the desired shape, besides being very strong for the weight of metal employed.

What is claimed is:—

1. A dumping ash-pan for locomotives comprising a series of overlapping bottom sections, rods transverse to the ash-pan and carrying the said sections, rock arms fast on the rods, longitudinal bars connected to the rock arms, and a door at the front end of the ash-pan operatively connected to and moving with the longitudinal bars.

2. An ash pan provided with a dumping bottom and having a front door operatively connected to and movable with the dumping bottom of the pan to open and close simultaneously with the like movements of the said bottom of the pan.

3. A dumping ash-pan for locomotives having dumping bottom members, a front damper door extending transversely of the pan and operating connections from both ends of the door to the dumping bottom of the pan.

4. In a locomotive ash-pan, a series of dumping sections each mounted for movement about an axis transverse to the length of the ash-pan, a rock arm depending from each section, a bar connected to and common to the rock arms, a front door for the ash-pan connected to and movable with the rock arms, and operating means for said bar extending to the cab of the engine.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

THOMAS J. HUDSON.

Witnesses:

C. M. BISHOP,
E. L. CUTLIP.