R. B. KENDIG.

ASH PAN.

APPLICATION FILED DEC. 13, 1909.

996,093.

Patented June 27, 1911.

3 SHEETS—SHEET 1.

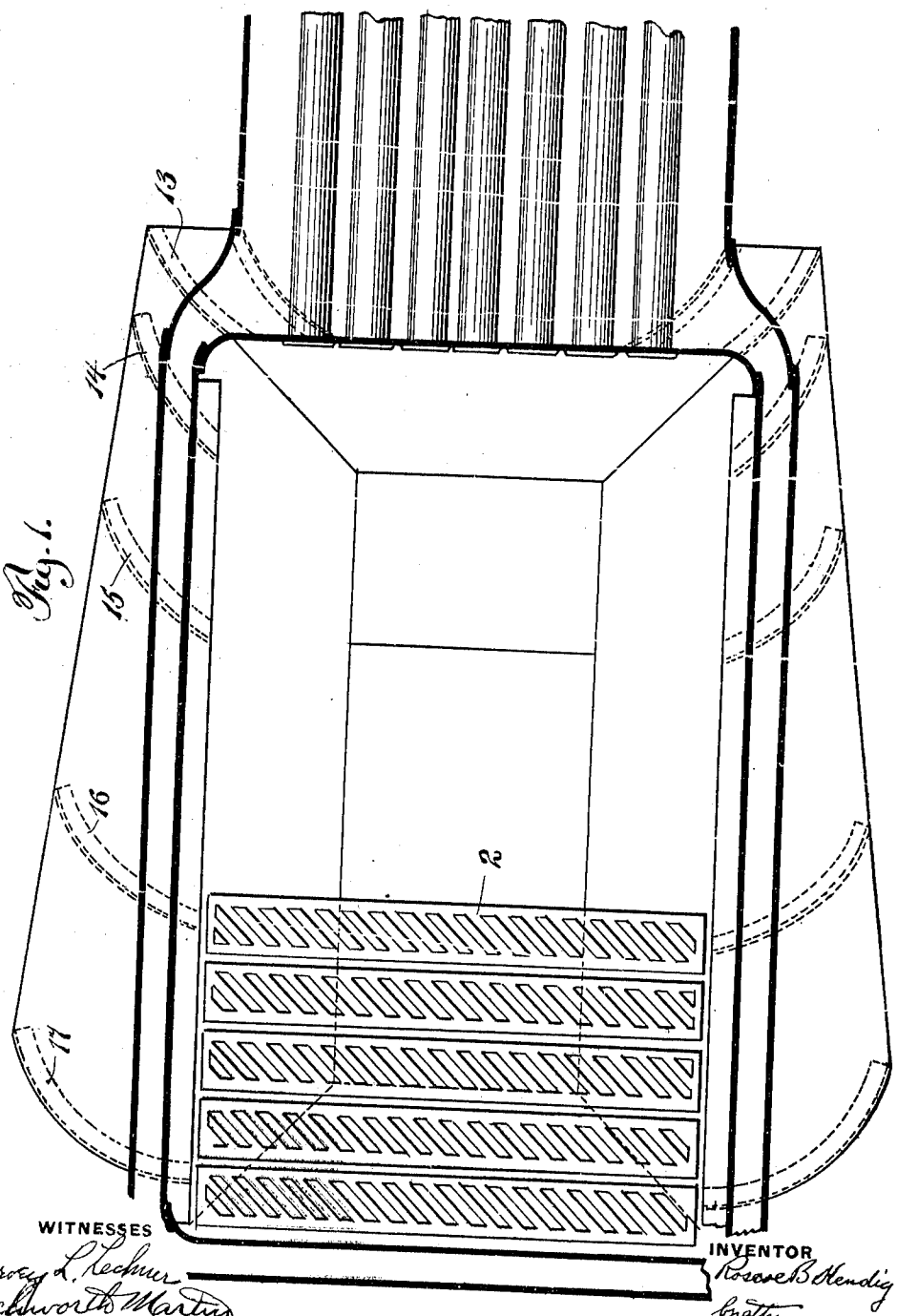

Fig. 1.

WITNESSES

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3 SHEETS—SHEET 2.

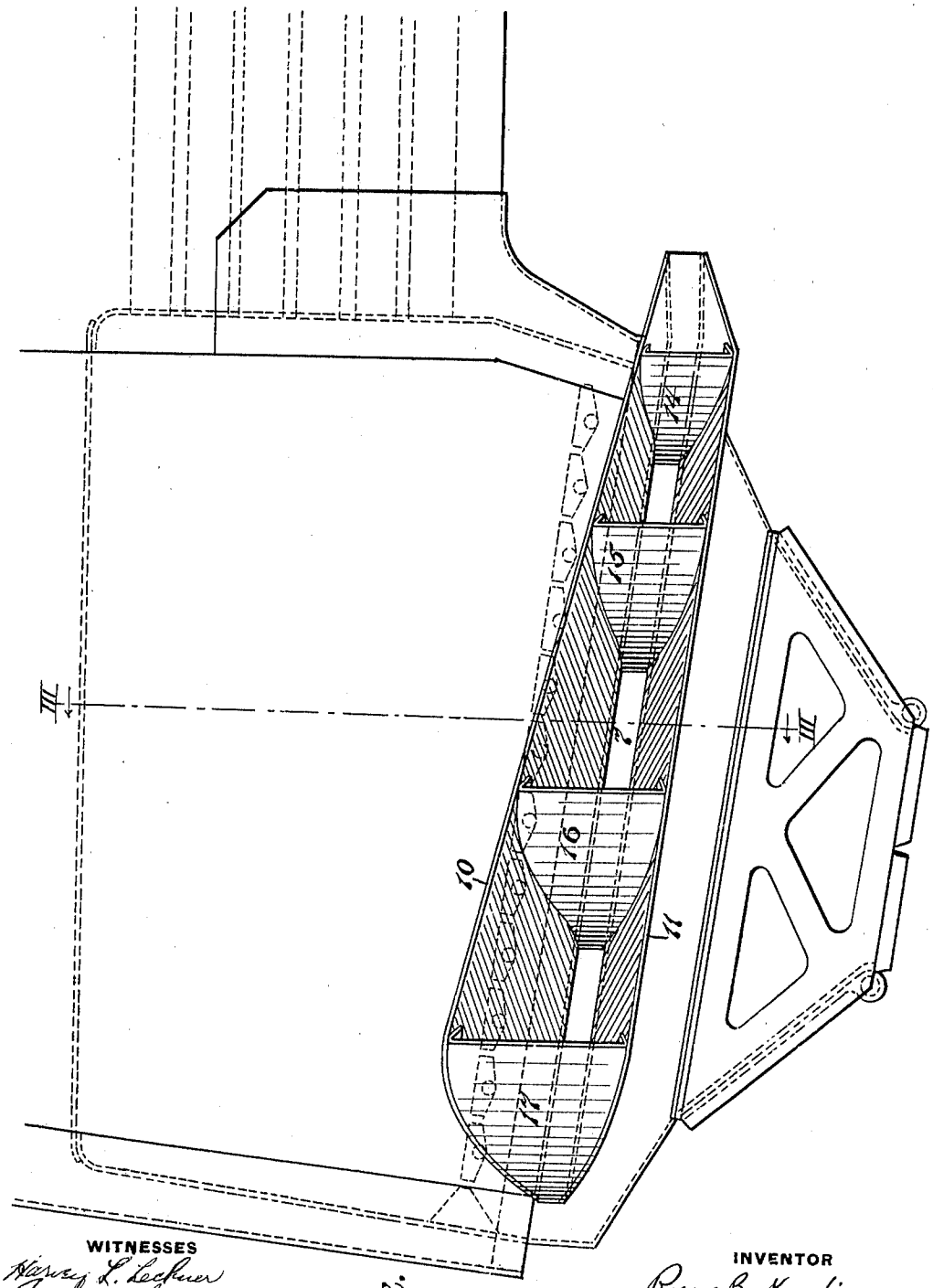

Fig. 2.

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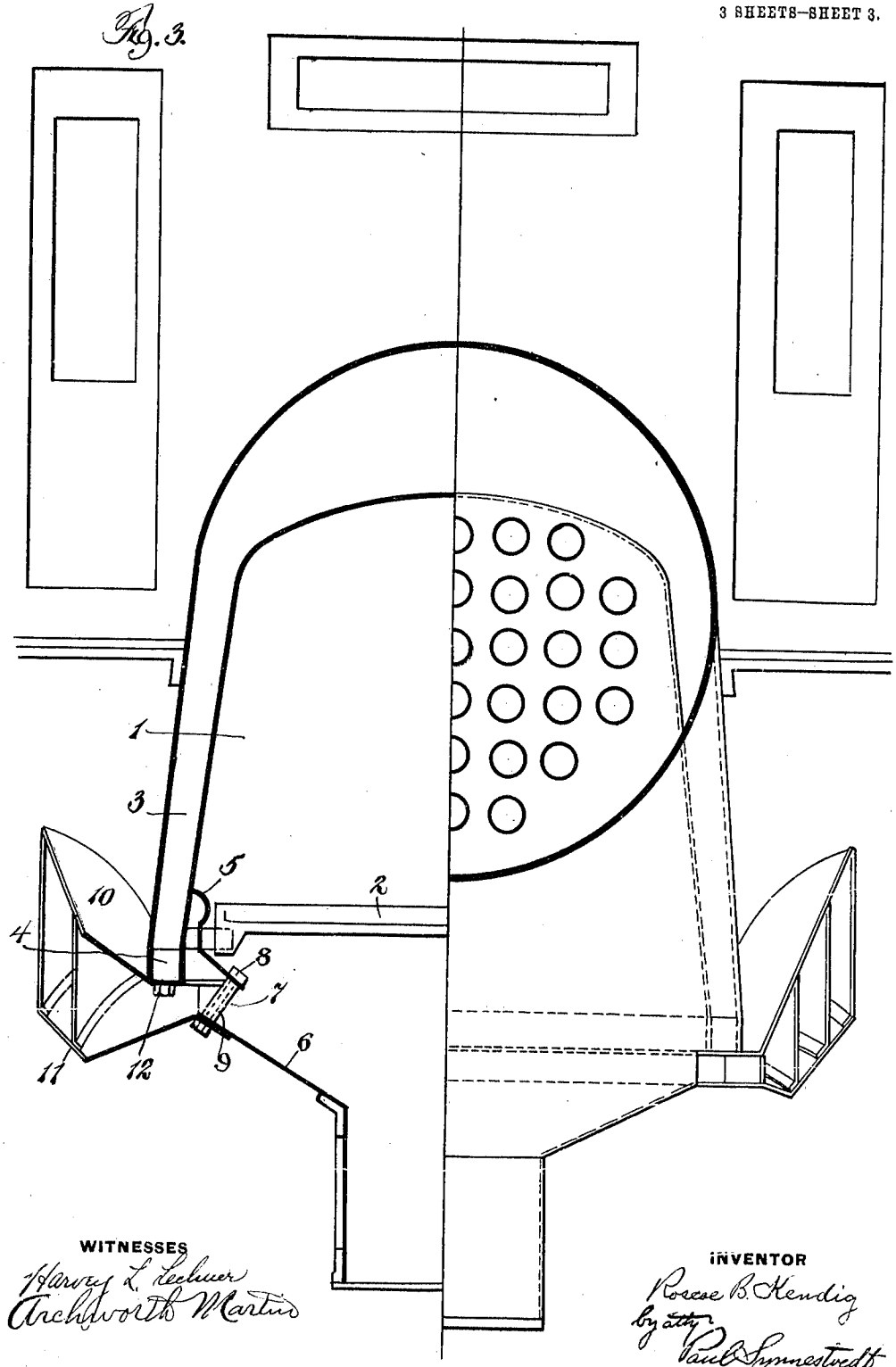
3 SHEETS—SHEET 3.

Fig. 3.



WITNESSES

Harvey L. Lechner

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UNITED STATES PATENT OFFICE.

ROSCOE B. KENDIG, OF CLEVELAND, OHIO.

ASH-PAN.

996,093. Specification of Letters Patent. Patented June 27, 1911.

Application filed December 13, 1909. Serial No. 532,929.

To all whom it may concern:

Be it known that I, ROSCOE B. KENDIG, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Ash-Pans, of which the following is a specification.

The invention relates to improvements in locomotive ash pans, and particularly to the means for supplying air thereto. The invention has for its primary objects; the provision of an improved attachment whereby the supply of air to the ash pan is augmented when the locomotive is in motion; the provision of means of the character specified whereby the supply of air is uniformly distributed along the length of the ash pan; the provision of an attachment of the character specified which will not interfere with the flow of air to the ash pan when the locomotive is stationary, or running at slow speed; and the provision of a simple and effective attachment which may be applied to the majority of locomotives now in use. One embodiment of the invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a horizontal sectional view taken through the rear end of the locomotive above the improvement constituting my invention,

Figure 2 is a partial side elevation of a locomotive with the improvement applied thereto, and

Figure 3 is a partial transverse section through the fire-box and ash pan on the line III—III of Figure 2, and a partial rear elevation of the locomotive with the attachment applied thereto.

The improvement is particularly desirable in the case of engines with wide or semi-wide fire-boxes, in which the inclined bottom of the ash pan limits the size of the air admission slots or passages so that the supply of air under certain conditions is insufficient, particularly at high speeds. At such times the tendency is to draw the air outwardly through the admission passages, thus giving a slight degree of vacuum in the ash pan, retarding the combustion, and giving a down draft and resultant tendency to burn out the grates when the door of the fire-box is opened. My improvement is designed to meet these conditions, and, briefly stated, comprises deflection means arranged along the admission openings at the sides of the ash pan and adapted to deflect the air inwardly through the admission openings on the forward movement of the locomotive.

The drawings illustrate only so much of the locomotive as is necessary to indicate the location of my improvement and the method of its application. Referring particularly to Figure 3, 1 is the fire-box of the locomotive, provided with the grates 2; 3 is the water leg provided at its lower edge with the usual mud ring 4; 5 is the grate frame which may be of any approved construction; and 6 is the inclined bottom plate of the ash pan.

An extended slot or passage 7 is provided along the upper edge of the ash pan on each side thereof, the grate frame and plate 6 being spaced apart and maintained in position by means of the usual bolts 8 and spacing tubes 9. Opposite this slot or passage 7 on each side of the ash pan is the deflecting means constituting my improvement. This means is a box-like construction comprising a pair of opposing plates 10 and 11 secured to the mud ring 4 and plate 6 respectively by means of the studs 12 and bolts 8, and carrying a series of forwardly inclined vanes 13, 14, 15, 16 and 17. The plates 10 and 11 diverge as indicated in Figure 3 in order to increase the capacity of the vanes and the successive vanes, from front to rear, are of gradually increasing size in order that each vane may have a portion which is unshielded by the preceding vane. The air supplied is thus distributed along the length of the passages and the capacity of the deflector correspondingly increased. The curve on which the deflecting surfaces or vanes are bent is such that a maximum inflow of air is secured with the least resistance to the forward movement of the device, but it will be apparent that various arrangements of deflectors and various other angles might be substituted. The device as shown is constructed of sheet metal and is adapted to be manufactured as an attachment and applied to locomotives as now constructed, the present locomotive structure being such that the attachment may be readily applied.

The method of operation and utility of the device will be apparent from the foregoing. The inflow of air secured by the deflectors increases with the speed of the locomotive, and when the locomotive is running at slow speed or is stationary the attachment interferes in no way with the inflow

of air through the passages 7. No damper or regulator is ordinarily necessary for controlling the flow of air through the passages 7 as the supply of air under no condition is excessive, and even when the air pressure on one side of the locomotive is greater than that on the other side the opposing currents from the two slots or passages 7 coöperate in such a way that no undesirable results follow, are additional flow on one side merely tending to reduce the inflow through the opposite passage or slot.

Having thus described my invention and illustrated its use what I claim as new and desire to secure by Letters Patent is the following:—

1. A locomotive ash pan having admission means formed to admit a substantially continuous body of air along its side wall, and means for deflecting the air through such admission means on the forward movement of the locomotive comprising a plurality of vanes obliquely inclined with respect to the side of the ash pan and arranged one after the other along the admission means.

2. The combination with a locomotive ash pan having air admission means along the side thereof, of means for deflecting air through such admission means on the forward movement of the locomotive comprising a box open at its outer side and communicating with the admission means at its inner side and provided with a plurality of forwardly inclined vanes.

3. An attachment for application to the air admission means at the side of a locomotive ash pan, comprising a box open along its inner and outer sides and having its upper and lower sides inclined to approach each other at the inner side of the box, and provided with a plurality of forwardly inclined deflecting vanes.

4. The combination with a locomotive ash pan having air admission means along the side thereof, of means for deflecting air through such admission means on the forward movement of the locomotive comprising a box open at its outer side and communicating with the admission means at its inner side and provided with a plurality of forwardly inclined vanes increasing in length from front to rear.

In testimony whereof I have hereunto set my hand in the presence of the two subscribed witnesses.

ROSCOE B. KENDIG.

Witnesses:
ARCHWORTH MARTIN,
HARVEY L. LECHNER.