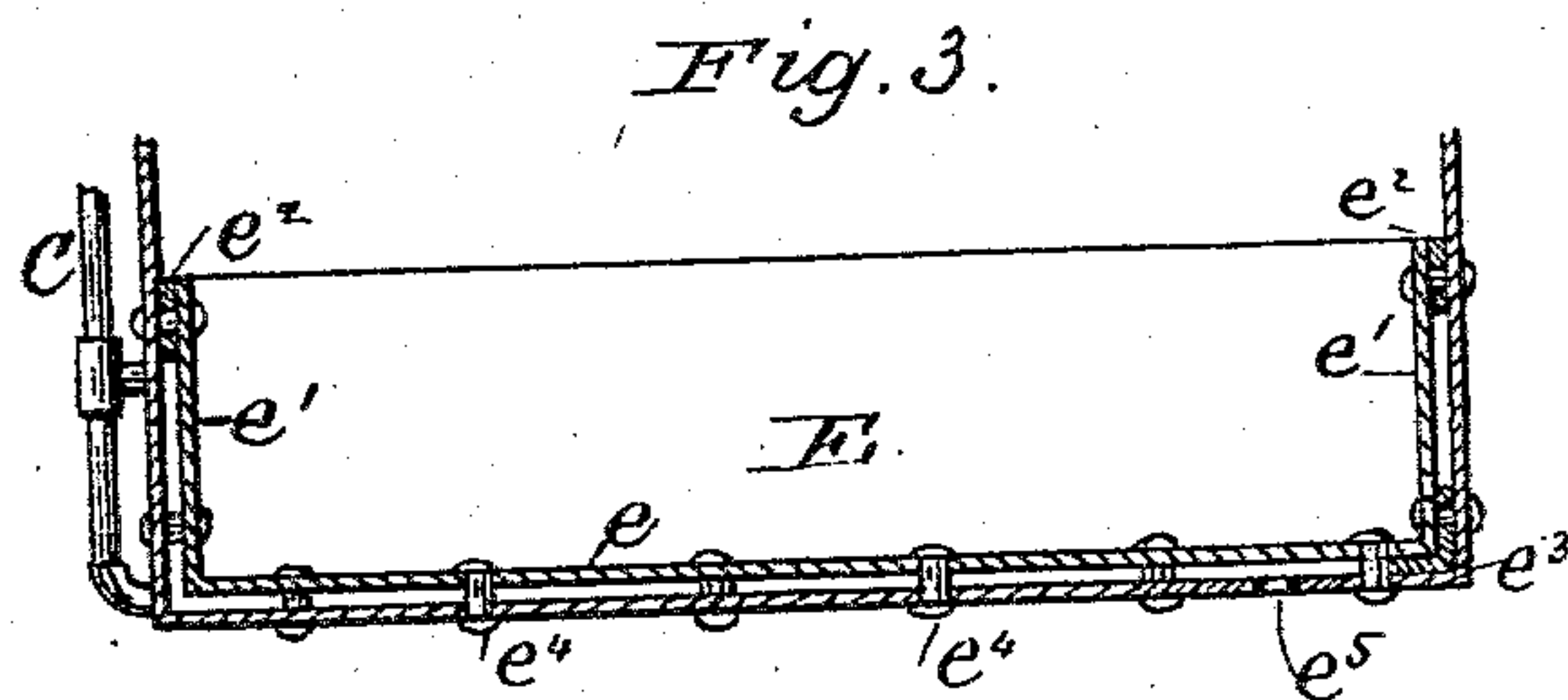
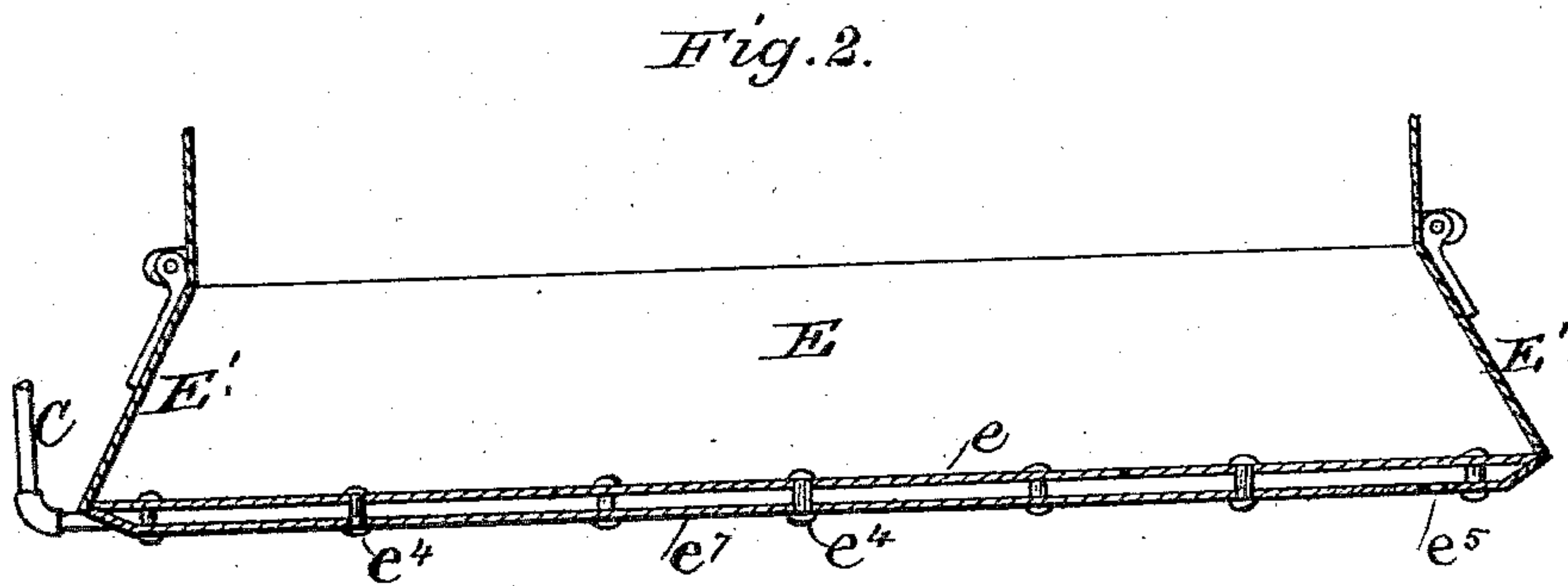
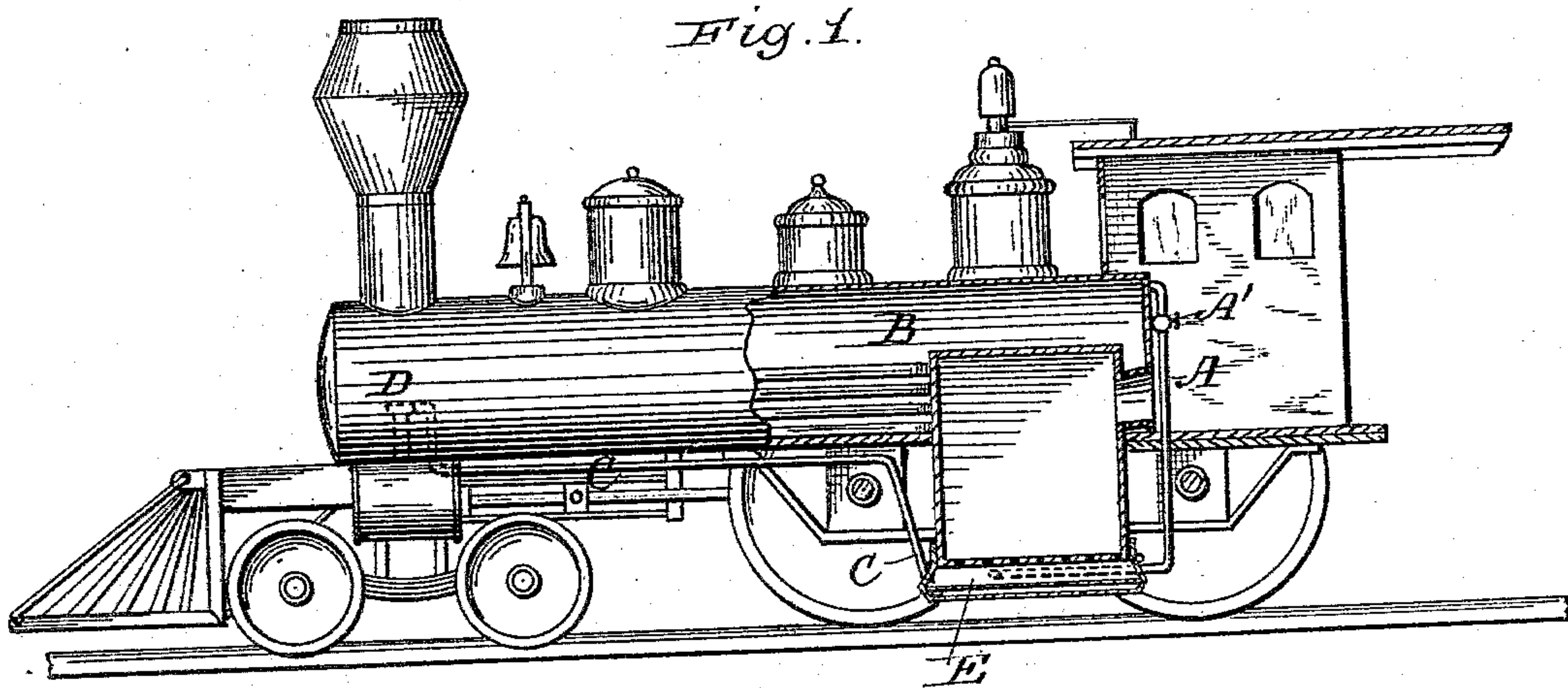


(No Model.)

E. BIGNELL.
LOCOMOTIVE ASH PAN.

No. 286,579.

Patented Oct. 16, 1883.



Witnesses:

L. B. Hills

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UNITED STATES PATENT OFFICE.

EDWARD BIGNELL, OF LINCOLN, NEBRASKA.

LOCOMOTIVE ASH-PAN.

SPECIFICATION forming part of Letters Patent No. 286,579, dated October 16, 1883.

Application filed June 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD BIGNELL, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Locomotive Ash-Pans, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

10 Figure 1 is a side elevation, partly in section, of a locomotive provided with my improved ash-pan. Fig. 2 is a longitudinal and Fig. 3 a transverse section of the ash-pan.

15 Like letters refer to like parts in all the figures.

The object of my invention is to provide means for preventing the adhesion of snow and ice to and upon the ash-pan of locomotive-boilers; and I attain this object by constructing the ash-pan so as to adapt it to be heated by causing steam, either live or exhaust, to be directed against the walls of the same. It is well known that the ash-pans of 25 locomotives are located at a comparatively low point, and near the ground, and that in passing over the road-bed in snow of even ordinary depth a quantity is scooped up by, or is almost constantly in contact with, the 30 ash-pan, and by reason of the heat therein the snow becomes melted, and subsequently freezes, so that at times the door of the pan becomes clogged and difficult to open. By my construction steam is directed against the 35 pan, so as to maintain such a temperature thereof as to melt any snow which may become lodged thereon.

The principal elements which I employ in any embodiment of my invention are double 40 walls on the bottom or sides or on both the bottom and the sides of the ash-pan, and any suitable connecting-pipes communicating with the space or spaces between said walls and with the boiler or other suitable part of a 45 locomotive where steam, either live or exhaust, may be supplied and conducted by said pipes. Various arrangements of these elements may be employed, and may be suggested by ordinary mechanical skill. I therefore do 50 not limit myself to the exact arrangement herein shown, but reserve the right to modify the same as circumstances may indicate to be preferable.

In this instance I arrange a supply-pipe,

A, extending from the steam-chamber of the 55 boiler B to a side wall of the ash-pan, as shown in Figs. 1 and 3. Said pipe is provided with a valve, A', whereby the supply of steam—in this case live steam—may be let on or shut 60 off at will, this means being intended for use when the locomotive is standing. In using exhaust-steam, as is intended when the locomotive is running, I provide a supply-pipe, C, which extends from the exhaust-passage D to preferably the front end of the pan, 65 and communicating directly with the bottom thereof. A valve may be provided at any desired point in this supply-pipe, also, if desired. In these particular arrangements of 70 pipes changes may be made, as above stated; but I prefer facilities of some sort for supplying both live and exhaust steam at will, though either alone will accomplish the primary object in view.

E represents the ash-pan, and it comprises, 75 in addition to the usual features of construction, a duplicate bottom plate, e , and walls e' , which are bound together by space-bars e^2 , angle-irons e^3 at a corner or corners, and tie-bolts or rivets e^4 , in such a manner as to form 80 a space or spaces between the inner and outer walls, through which spaces the steam entering by either of the supply-pipes A or C passes; and I provide one or more holes, e^5 , in the outer bottom plate, e' , for the escape or 85 discharge of the steam and any water of condensation therefrom.

The operation is apparent from the foregoing description, and it is evident that snow cannot accumulate or ice form upon any parts 90 of the walls or bottom of the ash-pan, and usual obstructions to draft or grate surface can be easily removed and prevented from obstructing the free operation of connecting-rods to grates; the grates, and doors E'. 95

Having described my invention and its operation, what I claim is—

The combination of an ash-pan provided with duplicate bottom plates, and a steam-pipe communicating with the exhaust and 100 with the space between said plates, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD BIGNELL.

Witnesses:

C. J. ERNST,
S. B. LINDERMAN.