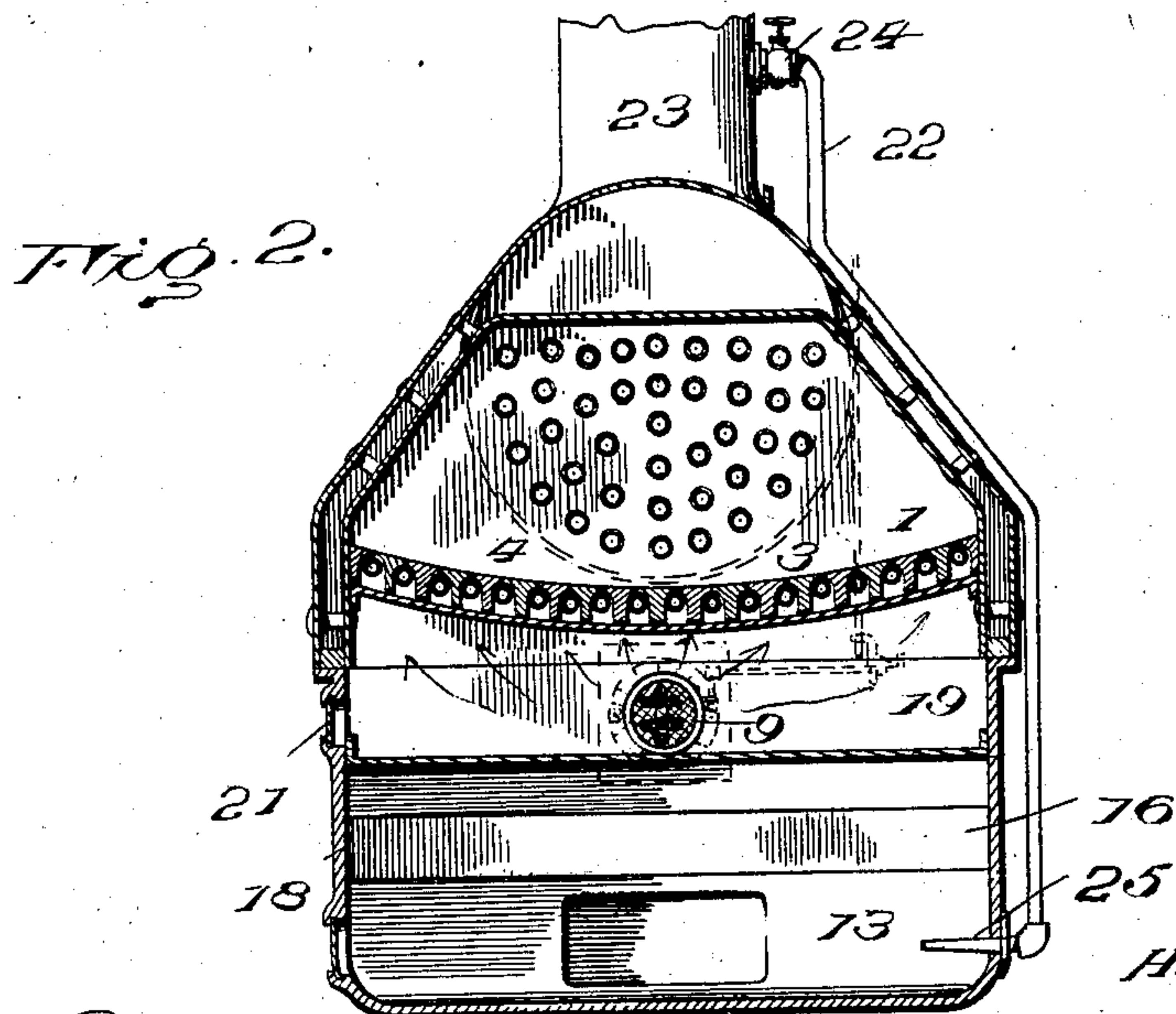
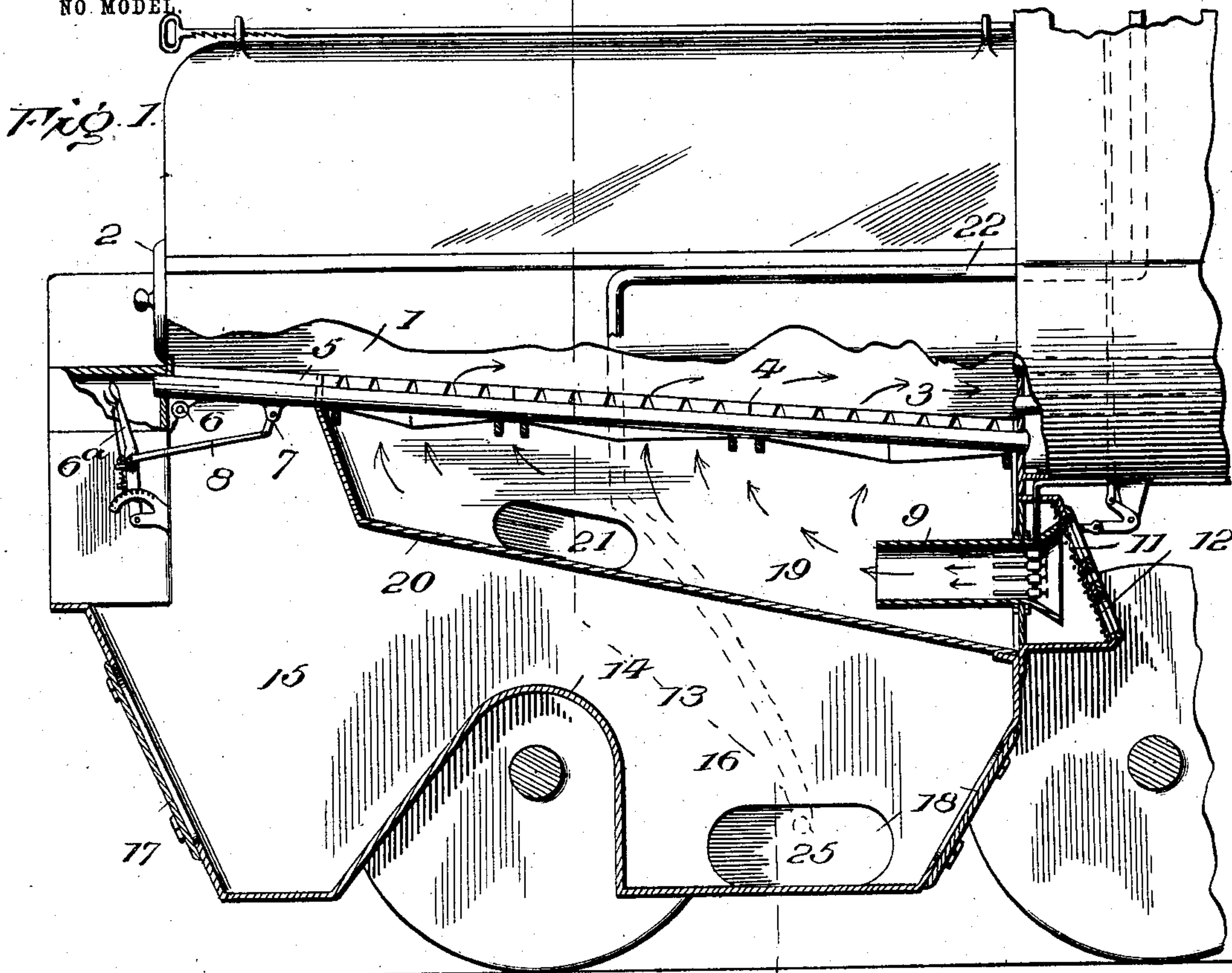


No. 742,129.

PATENTED OCT. 20, 1903.

H. E. PARSON.  
ASH PIT FOR LOCOMOTIVE FURNACES.  
APPLICATION FILED DEC. 15, 1902.

NO MODEL.



Inventor

H. E. Parson

Witnesses

*John J. Miller*  
*Benja. J. Matthews*

By

*Stewart & Stewart*  
Attorneys



# UNITED STATES PATENT OFFICE.

HENRY E. PARSON, OF NEW YORK, N. Y.

## ASH-PIT FOR LOCOMOTIVE-FURNACES.

SPECIFICATION forming part of Letters Patent No. 742,129, dated October 20, 1903.

Original application filed July 22, 1902, Serial No. 116,586. Divided and this application filed December 15, 1902. Serial No. 135,311. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. PARSON, a citizen of the United States of America, and a resident of the city and State of New York, have invented certain new and useful Improvements in Ash-Pits Designed for Use in Locomotive-Furnaces, of which the following is a specification.

This application is a division of my application filed July 22, 1902, Serial No. 116,586.

The invention relates to an improvement in ash-pits designed for use in a locomotive-furnace adapted for forced draft.

In a pending application filed July 22, 1902, Serial No. 116,586, I have described and claimed means for increasing the grade of combustion in a locomotive fire-box by the use of a forced draft coupled with means for automatically controlling same by boiler-pressure. In the structural details necessary for the complete success of the above-noted invention it is essential of course that a closed fire-box be used, and hence means must be provided for the ready and convenient disposal of the ashes without interference with the forced draft.

The present invention therefore is directed mainly to this feature, and broadly comprises a grate formed to permit the use of a forced draft and having a movable section, an auxiliary ash-receptacle to act as a deflector for the injected currents and to direct same, and an ash-pit beneath the auxiliary receptacle to receive the ashes from the movable grate-section.

The preferred form of construction embodying the details of my invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a broken longitudinal section through the furnace of a locomotive, illustrating the arrangement and construction of the parts. Fig. 2 is a transverse section of the same.

Referring to the drawings, 1 represents the fire-box of closed type and having the usual feed-door 2. The grate 3 has a fixed section 4 and a movable section 5, the latter being hinged at 6 to the wall of the fire-box and operated through lever 6<sup>a</sup>, arm 7, and link 8 in a manner which will be understood from the drawings.

The grate, particularly the fixed section 4, is formed to permit the most effective use of a forced draft comprising detachable sections grooved to encompass the water-tubes and having tapering openings in communication with the grooves, as noted in the drawings. The structural form of grate illustrated, though deemed best adapted for the purpose, is not an essential detail of my present invention, as any grate with a movable section will answer the requirements desired herein.

A blower 9, preferably comprising a series of injectors, delivers steam under pressure beneath the fixed grate-section 4, air being introduced through openings 10 in the front wall 11 of the blower-housing, which openings are suitably regulated by a damper 12.

13 represents an ash-pit comprising a substantially closed box-like structure underlying the grate 3 and arched at 14 to accommodate one of the main axles of the locomotive. The arching of the pit practically divides the same into two compartments 15 and 16, each of which is provided with a door 17 and 18, respectively.

As the blower operates beneath the grate, it is evident that some means must be provided to prevent the blast from interfering with the ashes in pit 13, and hence I provide what I term an "auxiliary" ash-receptacle 19, which latter underlies the fixed section of the grate only and has an inclined bottom 20, against which the blast from blower 9 is directed, the inclination of the bottom serving to effectively distribute the blast evenly beneath the fuel. The auxiliary receptacle 19 is provided with a suitable door 21.

A pipe 22, leading from the steam-dome 23 of the locomotive and suitably supplied through valve 24, has a contracted delivery-nozzle 25, projecting within compartment 16 of ash-pit 13, being arranged opposite door 18 therein, as illustrated.

The operation and purpose of the parts described are as follows: Ashes accumulating in the fuel on the grate are raked rearward onto the movable section 5 of the grate and may be dumped therefrom into compartment 15 of the ash-pit 13 through the operation of lever 6<sup>a</sup>. As the movable section of the grate is entirely beyond the auxiliary ash-receptacle



tacle, in which latter the blast is operating, it will be noted that the blast in no wise interferes with the disposal of the ashes. The ashes accumulating in compartment 15 of the ash-pit may be removed through door 17 or may be pushed over the arch 14 into compartment 16 and may be removed therefrom manually through door 18, or in the event of desiring removal while the locomotive is in motion, the valve 24 may be opened, admitting steam to pipe 22 and through nozzle 25 to compartment 16 of the ash-pit, forcing the ashes in said compartment through door 18.

It will be noted that the arched center of the ash-pit serves an important function in connection with the automatic removal of the ashes from compartment 16, in that it prevents the blast through the nozzle 25 from affecting the ashes in compartment 15, whereby the delivery of the ashes from the grate to compartment 15 and the forced delivery of ashes from compartment 16 may be effected at the same time.

It has been found in operation that a small quantity, if any, of refuse will be deposited in the auxiliary ash-receptacle, and such, if necessary, may be conveniently removed through door 21.

The construction described embodies the preferred details of my invention; but I desire it understood that I consider as within the scope of my invention such various changes of material features as may suggest themselves from the knowledge gained through the above disclosure.

What I claim as new is—

1. A grate comprising a fixed section, a movable section hinged to the front wall of the fire-box and normally in the plane of the fixed section, and an ash-pit underlying the grate and divided into two compartments, one of which receives material from the movable section of the grate, and the other acts as an overflow-receptacle for the first compartment.

2. A grate comprising a fixed section and a movable section, the latter being hinged to the front wall of the fire-box and lying normally in the plane of the fixed section, an ash-pit divided into two compartments, the forward one of which receives material from the said movable section and the rear one of which acts as an overflow-receptacle for the forward compartment, a closed blast-receptacle underlying the fixed section of the grate and preventing communication between the fixed grate-section and the ash-pit.

3. A grate comprising a fixed section, a movable section hinged to the front wall of the fire-box and normally in the plane of the fixed section, an ash-pit underlying the grate and divided into two compartments, one of which receives the material from the movable section of the grate, and the other acts as an overflow-receptacle for the first compartment, and a blast for forcing material from the remaining compartment.

Signed by me at New York city, New York, this 8th day of December, 1902.

HENRY E. PARSON.

Witnesses:

SIDNEY R. PERRY,

EMMA W. FINLAYSON.