H. DEVLIN.

MAGAZINE FEED FOR FURNACES.

APPLICATION FILED FEB. 20, 1915.

1,163,978.

Patented Dec. 14, 1915.

2 SHEETS—SHEET 1.

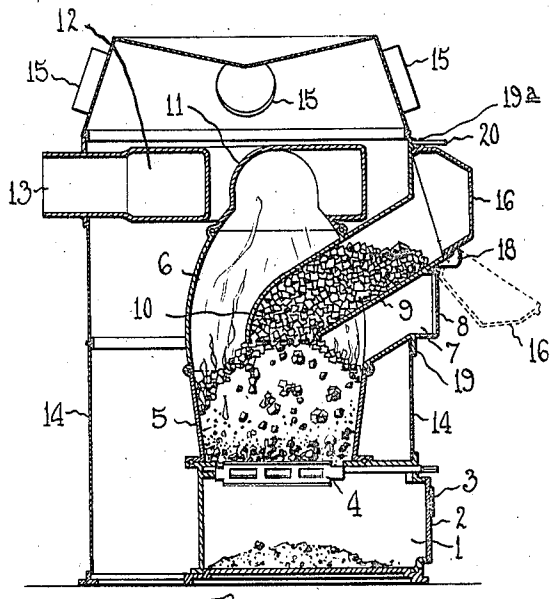
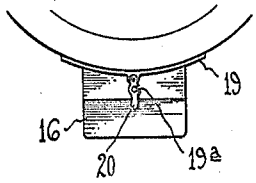


Fig. 1

Fig. 3



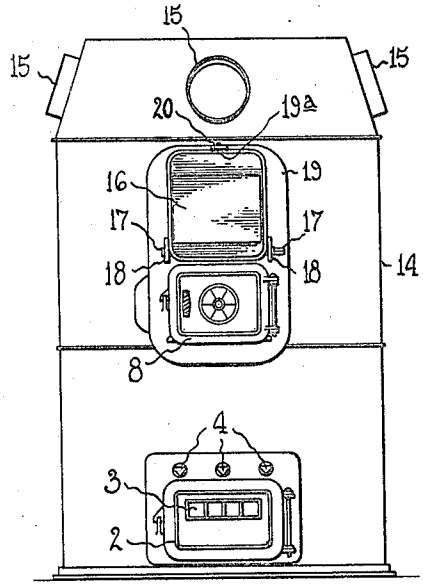


Fig. 2

Witnesses

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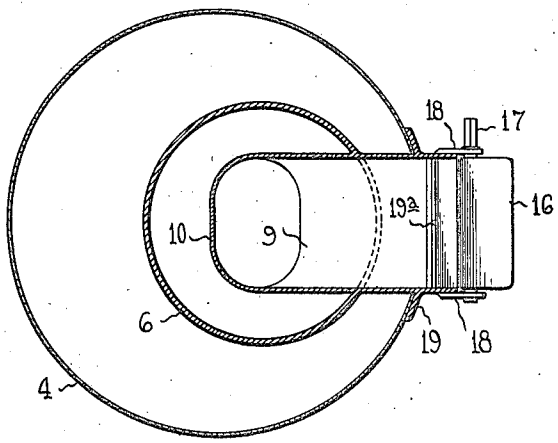


Fig. 4

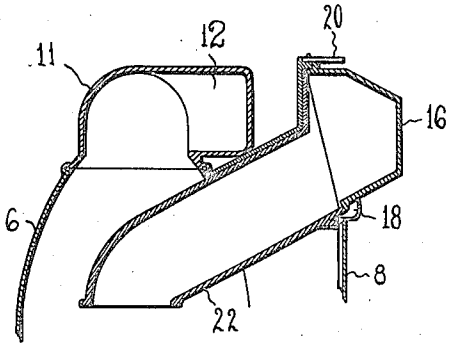


Fig. 5

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UNITED STATES PATENT OFFICE.

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MAGAZINE-FEED FOR FURNACES.

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Application filed February 20, 1915. Serial No. 9,513.

To all whom it may concern:

Be it known that I, HENRY DEVLIN, a citizen of the United States of America, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Magazine-Feeds for Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a magazine feed for furnaces, and more particularly to that type of hot air furnace that has a simple feeder for the combustion chamber.

The primary object of my invention is to provide a novel hopper door or bucket which facilitates filling the magazine or fuel chute of the furnace and obviates the necessity of repeatedly shoveling coal or other fuel into the magazine or chute.

A further object of this invention is to provide a hopper door or bucket that can be easily and quickly manipulated to deposit a quantity of fuel in a furnace magazine or chute, without any danger of smoke or fumes escaping from the furnace during such manipulation.

With the above and other objects in view the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings, wherein—

Figure 1 is a vertical sectional view of a hot air furnace provided with the hopper door or bucket; Fig. 2 is a front elevation of the same; Fig. 3 is a fragmentary plan of the furnace; Fig. 4 is a horizontal sectional view of the furnace, and Fig. 5 is a vertical sectional view of a modified form of magazine or coal chute.

In the drawings, 1 denotes an ash pit casing having a door 2 at the front side thereof provided with the usual draft damper 3. The top of the casing is provided with tiltable grate bars 4 of a conventional form suitably trunnioned in the casing whereby the same can be tilted by a shaker crank (not shown) placed upon the outer ends of said grate bars. Mounted upon the ash pit casing is a fire pot 5 and on this chamber is a combustion chamber 6 which has the front side thereof provided with a doorway 7 for an ordinary hinge door 8. The top of the doorway 7 is formed by the bottom wall 9 of an inclined fuel chute or magazine 10, the lower end of which terminates in the vertical axis of the combustion chamber 6 and the upper end of said fuel chute or magazine terminates at an inclination above the hinged door 8. On the combustion chamber 6 is a dome 11 in communication with a circular drum 12 having an exhaust flue 13 adapted to communicate with a stack or chimney. Inclosing the structure just described is a suitable housing or shell 14 provided with the ordinary hot air flues 15. Referring again to the fuel chute or magazine 10, said magazine has the upper end thereof provided with a hopper door or bucket 16 which has the pintle 17 thereof trunnioned in brackets 18 carried by a frame 19 connecting the doorway 7 and the magazine 10 and supported by the shell 14. One end of the pintle 17 is shaped to accommodate the same shaker crank employed for tilting the grate bars 4. In a closed position, the hopper door or bucket is supported at an inclination resting against the upper end of the chute or magazine 10, and to prevent accidental displacement of the hopper door or bucket, the hopper door or bucket has a keeper 19^a adapted to be engaged by a pivoted latch 20, carried by the top of the frame 19. When the hopper door or bucket 16 is in a lowered position, said door or bucket rests against the hinged door 8 of the doorway 7 and is supported in such position that it can be easily filled with coal or other fuel.

Before considering the modified form of construction, it is thought well to refer to certain advantages that are gained by the use of a hopper door or bucket. In the first place, less attention is required as the chute or magazine can be completely filled with coal or other fuel and it is possible to use cheaper grades of coal and obtain a more even regulation of heat. The very fact that the chute or magazine contains coal it is evident that the same can descend by gravity and therefore constitute a continuous central feeder for the fire pot 5 of the furnace. This is apparent by referring to Fig. 1 showing the location of fuel. Furthermore, the hopper door or bucket permits of large quantities of fuel being easily delivered to the chute or magazine and during the operation of filling the hopper door or bucket, it is practically impossible for smoke

or fumes to escape, as it is a well known practice to open the damper in the exhaust flue 13 and close the ash pit door, should the same be open.

Reference will now be had to Fig. 5 showing the modification of the invention, wherein the fuel chute or magazine 22 is made as a separate casting and fitted in the fuel container and the shell of the furnace. Such a casting can be easily and quickly installed in connection with furnaces already in use, or to facilitate manufacture can be made separate from the combustion chamber 6, doorway 7 or the frame 19.

In some instances the hopper door or bucket can be counterbalanced to facilitate manipulating the same and in either position it will positively remain as positioned to either receive fuel or to seal the upper end of the fuel chute or magazine.

While in the drawings there are illustrated the preferred embodiments of my invention, it is to be understood that the structural elements are susceptible to such variations and modifications as fall within the scope of the appended claims.

What I claim is:

1. In a hot air furnace having a combustion chamber, an ordinary door to facilitate placing fuel in said chamber, a fuel chute having the inner end thereof centrally of said combustion chamber and the outer end thereof providing an opening of greater cross sectional area than said chute at the front wall of said furnace above said door, and a hopper pivoted at the lower edge of the open end of said chute and extending across said opening and facing the same and adapted when lowered to present a receptacle that can be filled with fuel independent of said chute, and when raised discharge the fuel into said chute and close the outer end thereof.

2. In a hot air furnace having a combustion chamber and an ordinary door to facilitate placing fuel in said chamber, a fuel chute extending therein and having an opening of greater area than said chute at the front wall of said furnace above said door, and pivoted fuel carrying means at the outer end of said chute adapted to receive and hold fuel when in a lowered position against the door of said chamber and when raised to discharge fuel into said chute and close the open end of the chute and means for latching the same in closed position.

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

HENRY DEVLIN.

Witnesses:
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