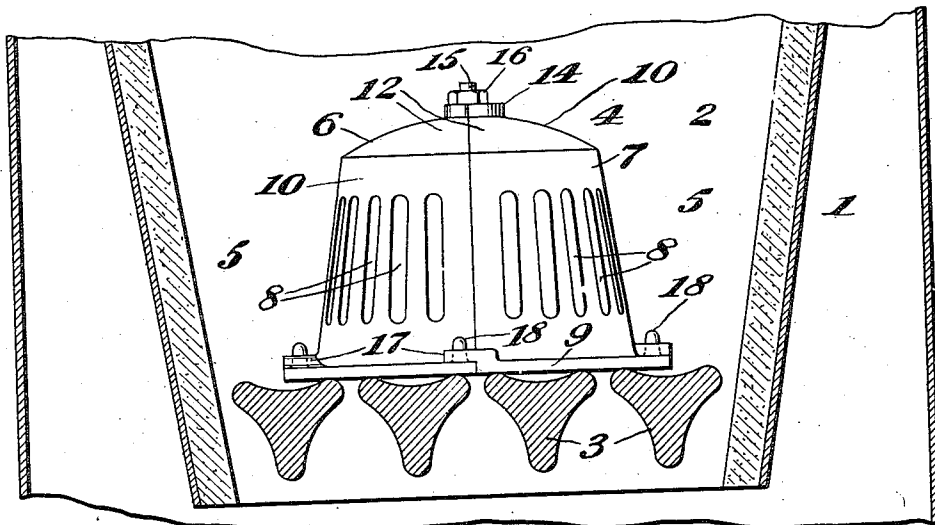


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FUEL SAVING APPLIANCE.  
APPLICATION FILED APR. 13, 1910.

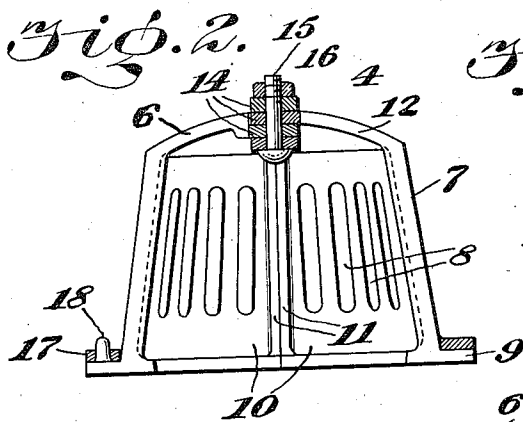
Patented Jan. 17, 1911.

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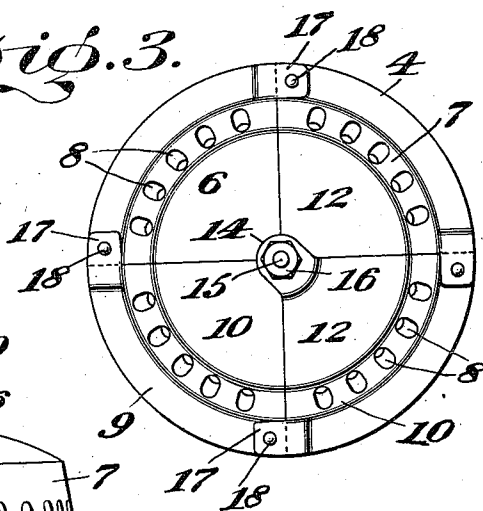
*Fig. 1.*



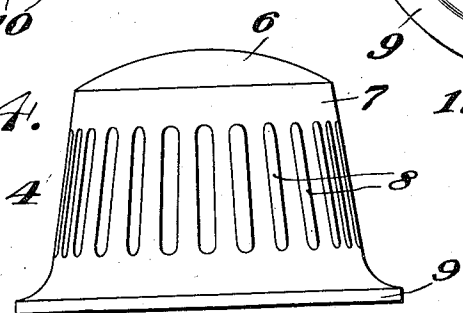
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



WITNESSES

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BY

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# UNITED STATES PATENT OFFICE.

HERMAN F. NEHR, OF RUTHERFORD, NEW JERSEY.

## FUEL-SAVING APPLIANCE.

981,673.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed April 13, 1910. Serial No. 555,239.

*To all whom it may concern:*

Be it known that I, HERMAN F. NEHR, a citizen of the United States, and a resident of Rutherford, in the county of Bergen and State of New Jersey, have invented certain Improvements in Fuel-Saving Appliances, of which the following is a specification.

This invention relates to certain improvements in that class of fuel saving appliances which are especially designed and adapted for insertion within the fire boxes of stoves and furnaces in position above the grates thereof so as to promote the combustion of the fuel therein and to assure the most desirable positioning of such fuel during combustion, with respect to the heating surfaces, and the object of the invention is to provide an appliance of this general character of a simple and comparatively inexpensive nature and of a strong and durable construction which shall be capable of ready application to furnaces and stoves of different kinds and styles.

The invention consists in certain novel features of the construction, and combinations and arrangements of the several parts of the improved fuel saving appliance, whereby certain important advantages are attained, and the appliance is rendered simpler, less expensive, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In order that my improvements may be the better understood, I will now proceed to describe my invention with reference to the accompanying drawings, wherein—

Figure 1 is a sectional view taken centrally through the fire box of a furnace provided with my improved fuel saving appliance; Fig. 2 is a vertical section taken through the appliance removed from the furnace; Fig. 3 is a plan view of the appliance constructed as shown in Figs. 1 and 2, and Fig. 4 is a side elevation illustrating a modified formation of the appliance comprised in my present invention.

Referring first to Figs. 1, 2 and 3, 1 represents a stove or furnace of any approved kind, having a fire box 2, and 3 represents a rocking grate located at the base of such fire box, while 4 represents my improved fuel saving appliance contained within said fire box 2 and loosely rested at its lower part upon the rocking grate bars, such appliance

being so formed and proportioned as to assure its operation, when in said fire box, to spread the fuel contained therein evenly around the sides of the fire box in the annular space 5 surrounding the appliance.

As herein shown, the improved fuel saving appliance is formed from cast metal or the like with tapered or conical side walls 7 approaching the vertical plane so inclined that the lower part of the annular space intervening between said side walls and the walls of the fire box 2 will be of less width than the upper part thereof. The appliance is closed at its upper part by an arched roof portion 10 while its lower part is open, as clearly shown in Fig. 2, being provided with an annular circumferential flange 9 adapted to fit snugly against the grate bars 3. The sloping or conical side walls 7 of the appliance are provided with elongated apertures 8, adapted for the passage of air and ashes in such a way as to promote the combustion of the fuel in the annular space 5 surrounding the appliance within the fire box 2.

As herein shown, the improved fuel saving appliance is made in rounded form, so as to be adapted for use in stoves or furnaces having fire boxes of similar form, but it will be evident that the device may be otherwise formed the better to adapt it for use in connection with stoves and furnaces having rectangular or otherwise shaped fire boxes.

When designed for use in connection with stoves or furnaces having comparatively large fire doors, and when made in comparatively small sizes, the improved fuel saving appliance may be constructed from an integral piece or casting of metal, as indicated in Fig. 4 of the drawings, but when made in larger sizes, and particularly when intended for use in connection with stoves and furnaces having comparatively small fire doors, I find it preferable to construct the appliance from a plurality of sections, as indicated in Figs. 1, 2 and 3. As shown in these views, the appliance is formed in four sections 10, 10, the lateral edge portions whereof have reinforcing or strengthening flanges 11, 11 adapted to be fitted closely adjacent to each other, and the upper parts 12, 12 whereof are adapted to be fitted together in a similar way to produce the arched top wall of the device. The lower part of each such section is also formed with a section of the flange 9, one end of such section having an upturned integral pin 18 and the opposite

end thereof having an apertured lug 17 projecting from it in position to be engaged upon the pin of an adjacent section so as to lock the sections 10, 10 securely together at their lower parts.

The upper parts 12, 12 of the several sections 10, 10, are provided with lugs 14, 14, projecting from them at different elevations and apertured in registry with one another for the passage of a bolt 15, having a nut 16 at its upper end, whereby said sections are effectively locked together at their upper parts in such a manner as to retain the pins 18, 18 at their lower parts in locking engagement with the apertured projections 17 at the junctures of their flange sections. Where this construction is employed, the appliance may be constructed with greater facility and may be more readily introduced into the stove or furnace through the fire doors, the sections being connected together by means of the bolt after having been separately introduced within the fire box.

From the above description of my improved fuel saving appliance it will be seen that the device is of an extremely simple and comparatively inexpensive nature, and is particularly well adapted for use by reason of the spreading of the burning fuel adjacent to the heating surfaces, and consequent economy in fuel consumption without interference with the movement of the grate, and it will also be obvious from the above description that the device is susceptible of considerable modification without material

departure from the principles and spirit of the invention, and for this reason I do not desire to be understood as limiting myself to the precise formation and arrangement of the several parts of the device as herein set forth in carrying out my invention in practice.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

A fuel saving appliance adapted to be arranged within the fire box of a furnace or the like, comprising a shell closed at its upper part and having perforated side walls and provided at its lower part with a circumferential flange adapted to be rested upon the grate, said shell being divided vertically into a plurality of sections, each of said sections having a lug extended upwardly from the flange adjacent one side of the section, a horizontally disposed apertured tongue extended outward from the flange at the opposite end of the section, the aperture of each tongue being adapted to accommodate the upwardly extended lug on the succeeding section, and means for uniting the sections at the top.

In witness whereof I have hereunto signed my name, in the presence of two subscribing witnesses.

HERMAN F. NEHR.

Witnesses:

EDWARD HUNTER,  
HENRY KILIAN.