

Sept. 17, 1940.

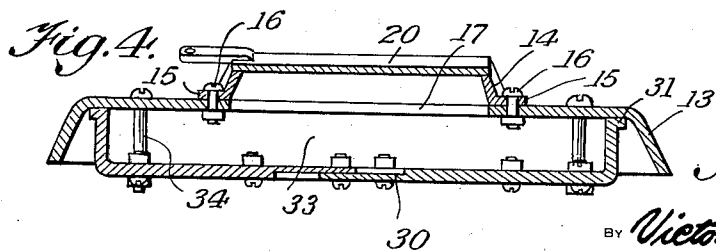
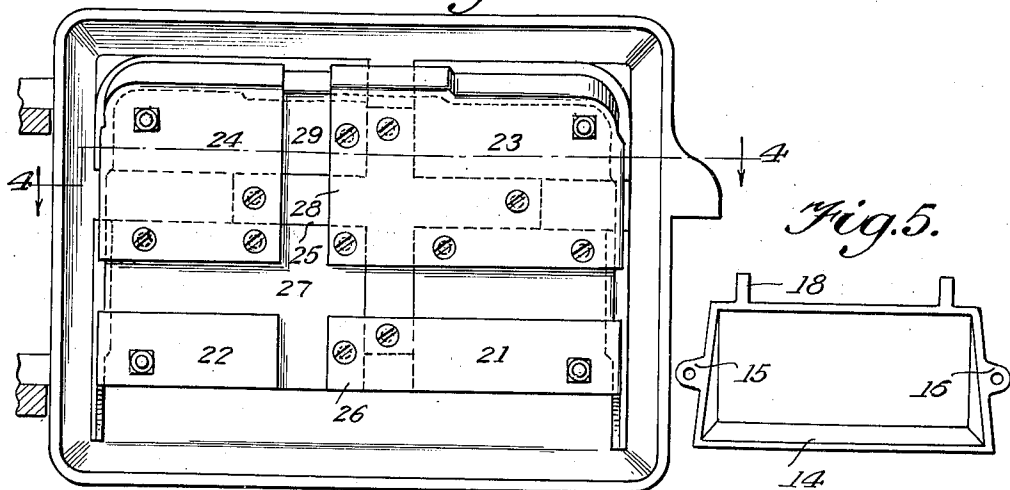
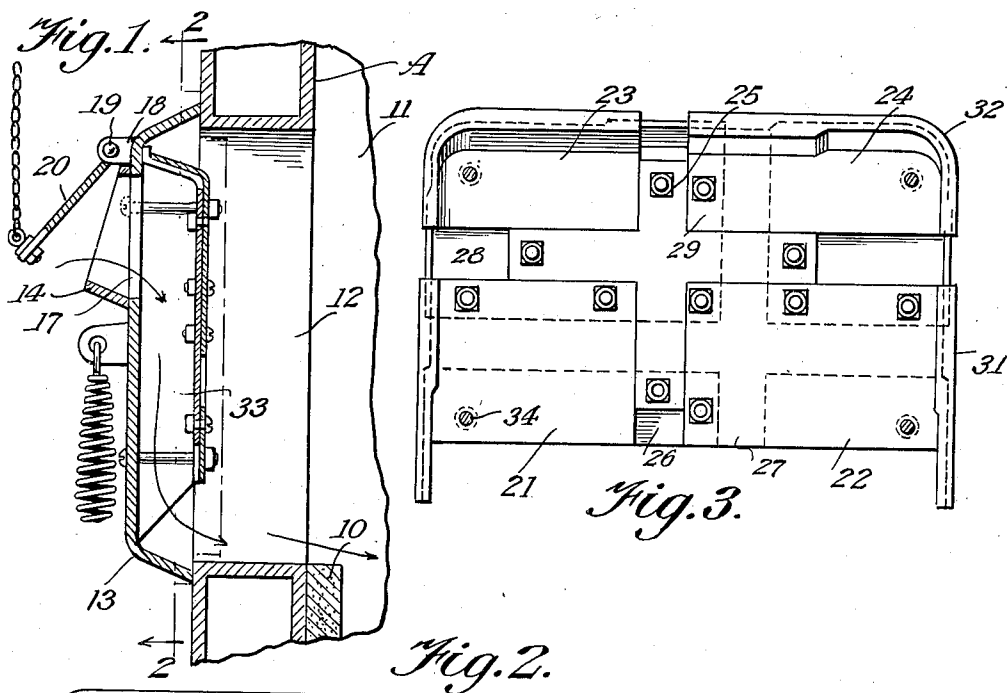
J. A. DOAN

2,214,994

STOVE AND FURNACE ATTACHMENT

Filed March 10, 1939

2 Sheets-Sheet 1



John A. Doan
INVENTOR

By Victor J. Enns & Co.
ATTORNEYS

Sept. 17, 1940.

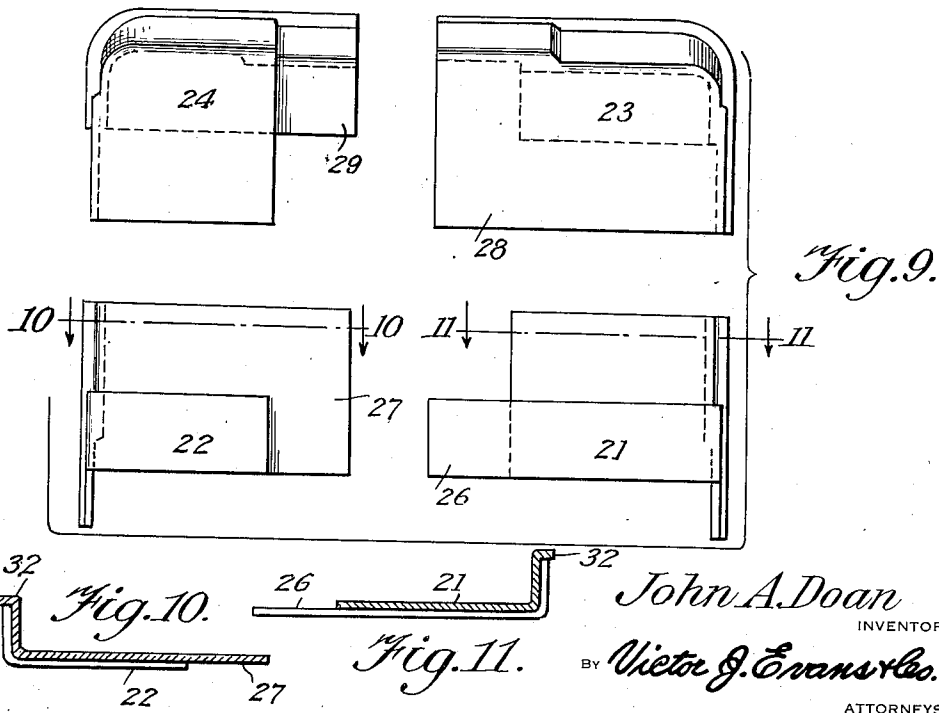
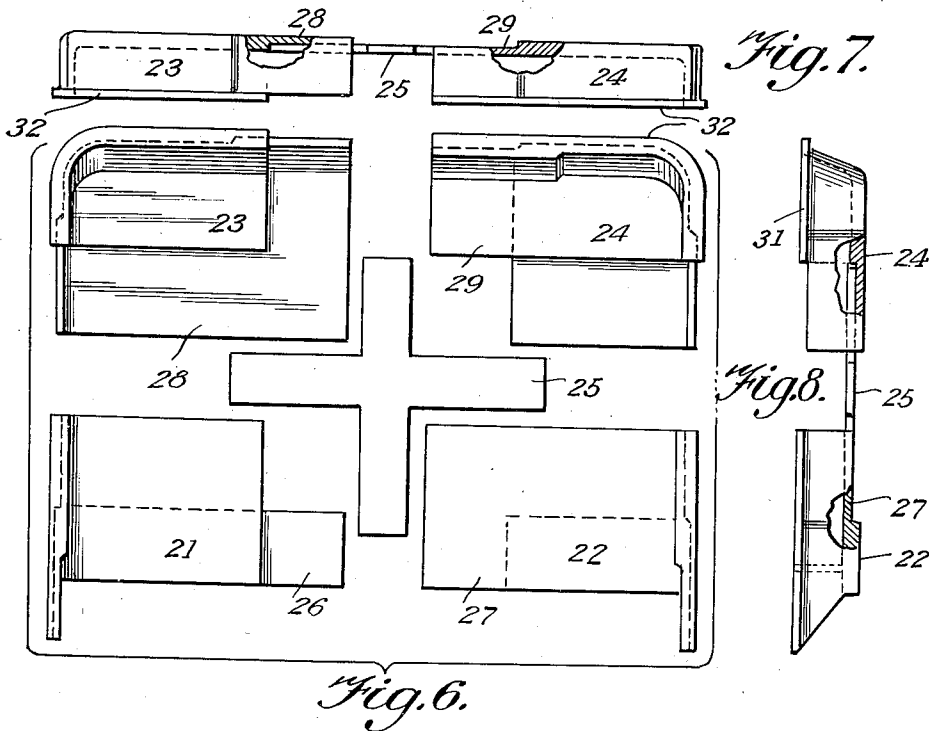
J. A. DOAN

2,214,994

STOVE AND FURNACE ATTACHMENT

Filed March 10, 1939

2 Sheets-Sheet 2



John A. Doan
INVENTOR

Fig. 11. BY Victor J. Evans & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE

2,214,994

STOVE AND FURNACE ATTACHMENT

John A. Doan, St. Louis, Mo.

Application March 10, 1939, Serial No. 261,081

1 Claim. (Cl. 110—175)

The invention relates to a stove and furnace attachment and more particularly to a smoke consuming device.

5 An object of the invention is to provide an attachment of this character wherein the air inlet mouth thereof is susceptible of separable mounting upon a fire door of a furnace, boiler, stove or the like and is of a size conforming to such door, being adjustable for the proper fitting thereof according to the size of the door to which it is to be applied and includes a plurality of sections, these being interfitted with each other and separably fastened together in a novel manner while the air inlet mouth directs air to the interior of the furnace, boiler, stove or the like for proper admission to the fuel bed within the same.

10 A still further object of the invention is to provide an attachment of this character, which is simple in its construction, thoroughly reliable and efficient in operation, readily and easily applicable to a fire door, being possessed of few parts, strong, durable, and inexpensive to manufacture and install.

15 With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention, and pointed out in the claim hereunto appended.

In the accompanying drawings:

20 Figure 1 is a fragmentary vertical sectional view through a furnace, boiler or the like and its fire door showing the attachment constructed in accordance with the invention applied thereto.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1 looking in the direction of the arrows.

40 Figure 3 is an elevation of the baffle constituting a part of the attachment, being in an assembled condition.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2 looking in the direction of the arrows.

45 Figure 5 is an elevation of the air inlet mouth removed from the door.

Figure 6 is an exploded elevation of the baffle with the sections thereof in correlated disposition with respect to each other.

Figure 7 is a top plan view partly in section of the attachment.

Figure 8 is a side elevation partly in section of the attachment.

55 Figure 9 is an exploded elevation similar to

Figure 6 with a part removed and looking toward the opposite side face of such baffle.

Figure 10 is a fragmentary sectional view taken on the line 10—10 of Figure 9 looking in the direction of the arrows.

Figure 11 is a fragmentary sectional view taken on the line 11—11 of Figure 9 looking in the direction of the arrows.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A designates generally a portion of a furnace, boiler, stove or the like of any suitable construction or type and within is the usual fire pot, combustion chamber, fire door opening and fire door, portions of these being indicated at 10, 11, 12 and 13, respectively, and constitute no part of the present invention, being illustrated merely for an understanding of the attachment constituting the present invention as hereinafter fully described.

The attachment comprises an air inlet mouth unit 14 in the form of a frame walled at its top, bottom and sides or ends, being entirely open within these walls through the front and back of said unit while the front of the latter is beveled or inclined outwardly from the back.

Precast with the unit 14 at opposite sides thereof are perforated attaching ears 15 for accommodating fasteners 16, these being also accommodated in the door 13 so that the unit 14 can be made secure thereto at the proper location and in the locating of such unit the door 13 is formed with an opening 17 registering with the said unit, the latter being at the outer side of the door.

Precast with the top of the unit 14 are pivot lugs or ears 18, each accommodating a pivot 19 for the vertical swingable mounting of a closure 20 for the said mouth unit 14. This closure 20 is operated in any suitable manner for regulating the supply of air through the mouth unit 14 to the interior of the furnace, stove or the like through the fire door 13 at the opening registering with said unit 14.

The attachment further comprises an inside fire liner or baffle for the fire door 13 and comprises the precast sections 21, 22, 23, 24 and 25, respectively, which are adjustably interfitted with each other to increase or decrease the size of the said liner or baffle in the fitting thereof with the door 13 in a manner hereinafter described.

The sections 21, 22, 23 and 24 are adapted for edge to edge disposition with respect to each

other and similarly the section 25 relative thereto while the said sections 21, 22, 23 and 24 are provided with overlap wings or extensions 26, 27, 28 and 29, respectively, these allowing assembly of the liner or baffle in the grouping of its sections 21, 22, 23, 24 and 25 for increasing or decreasing the size of said liner or baffle in assuring proper fitting to the door 13 in conformity with its size. The section 25 fits between the sections 21, 22, 23 and 24 and overlies the overlaps 26, 27, 28 and 29, respectively, at one side of the liner or baffle, preferably at the side next to the door 13 when the latter carries the liner or baffle.

The sections 21, 22, 23 and 24 are bolted or otherwise fastened to the section 25, as at 30, for the uniting of all sections with each other in adjusted relation one to the other. When the section 25 has been removed from association with the sections 21, 22, 23 and 24, the baffle or liner can be brought to a minimum size for the fitting thereof to a door of small size.

The sections 21, 22, 23 and 24 together with certain of the overlap wings are provided with end and top flanges 31 and 32, respectively, for abutment with the inner side of the door 13 spacing the liner or baffle from the door and forming an inlet air passage 33 leading downwardly and opening into the combustion chamber 11 below the said baffle or liner and this passage 33 communicates with the air inlet mouth 14 at the upper most portion thereof when the liner or baffle is on the door 13.

The liner or baffle is made fast to the door 13 at the inner side thereof by hanger bolts 34.

When the closure 20 is in open position, air from without the furnace, boiler, stove or the like is admitted through the mouth 14, flows downwardly through the passage 33 between the liner or baffle and the said door and discharges into the combustion chamber 11 at the front of the fire

pot 10 directly over the fuel therein for consumption of gases and smoke within the furnace, boiler, stove or the like.

The sectional make-up of the liner or baffle enables the precasting thereof so that such liner or baffle is adaptable for use in connection with fire doors of different sizes, the ends of the passage 33 and top thereof above the mouth unit 14 when the said liner or baffle is carried by the door 13 or permanently closed while this passage opens between the door 13 and the liner or baffle at the lowermost portion of said door for communication at this point with the combustion chamber 11 next to the front of the fire pot 10 within said furnace, boiler, stove or the like.

By creating the passage 33, as is clearly disclosed in Figure 1 of the drawings, the required volume of air from without the furnace, boiler, stove or the like is admitted to the interior or the combustion chamber of the same, the volume being regulated by the closure 20 at the will of the user of the said furnace, boiler or the like.

What is claimed is:

An attachment for a furnace or stove fire door having an opening therein, comprising a sectional body forming a baffle for fitting the door at the inner side thereof and having top and opposite end flanges for contacting the said door above and at opposite sides of the opening therein with the bottom of the said baffle spaced from the said door, extensions on the sections offset therefrom for the overlapping engagement of the said sections with each other, means for fastening the sections and the extensions together, and a removable element correlated to the said sections and the extensions when the said sections are in overlapped relationship and having jointure with the said extensions.

JOHN A. DOAN.