

July 26, 1932.

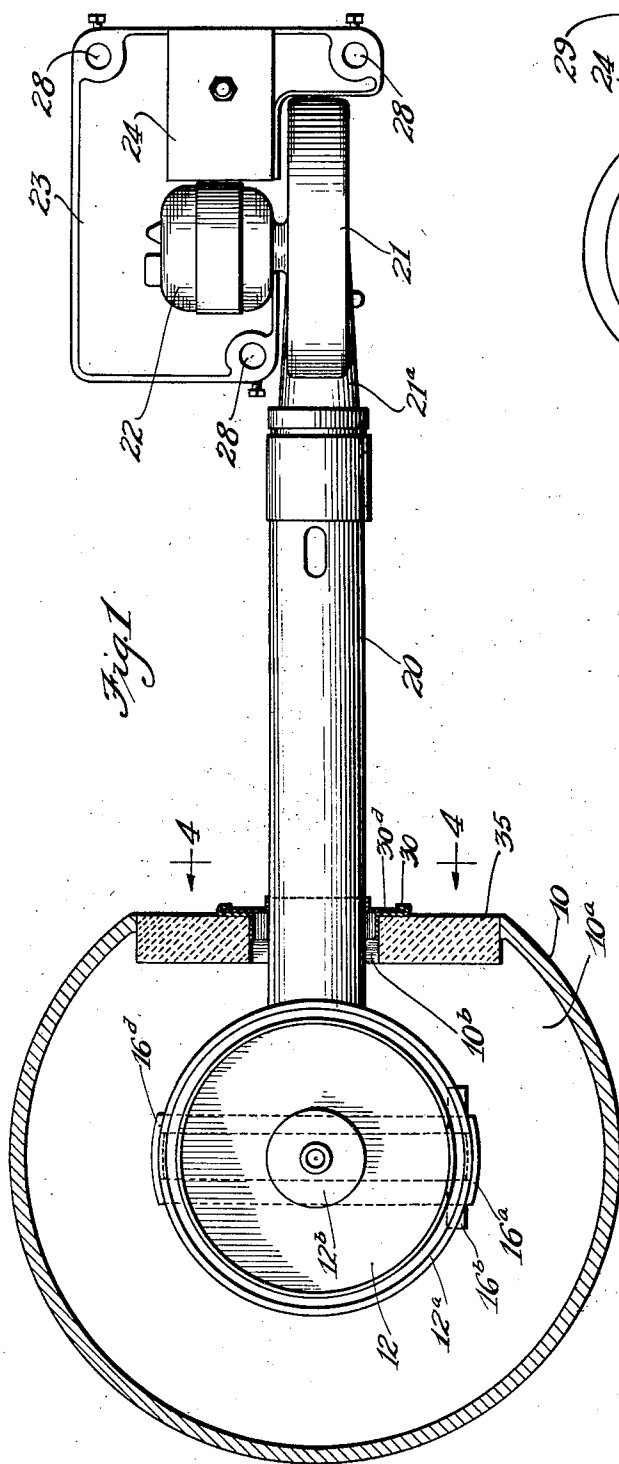
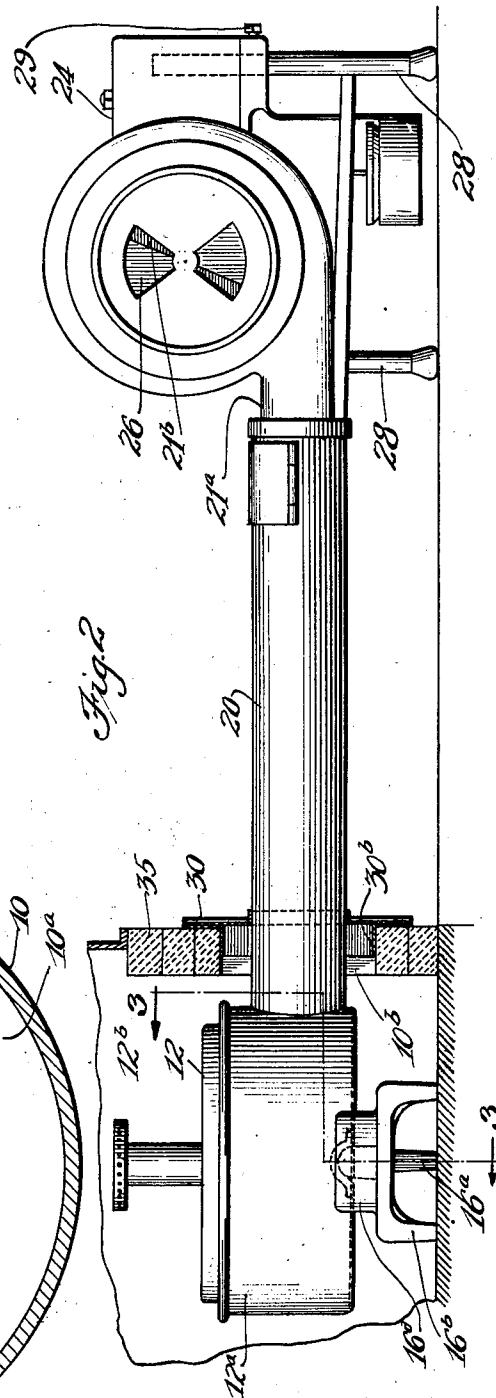
A. J. FRAME

1,869,242

OIL BURNER CONSTRUCTION

Filed Jan. 22, 1930

2 Sheets-Sheet 1



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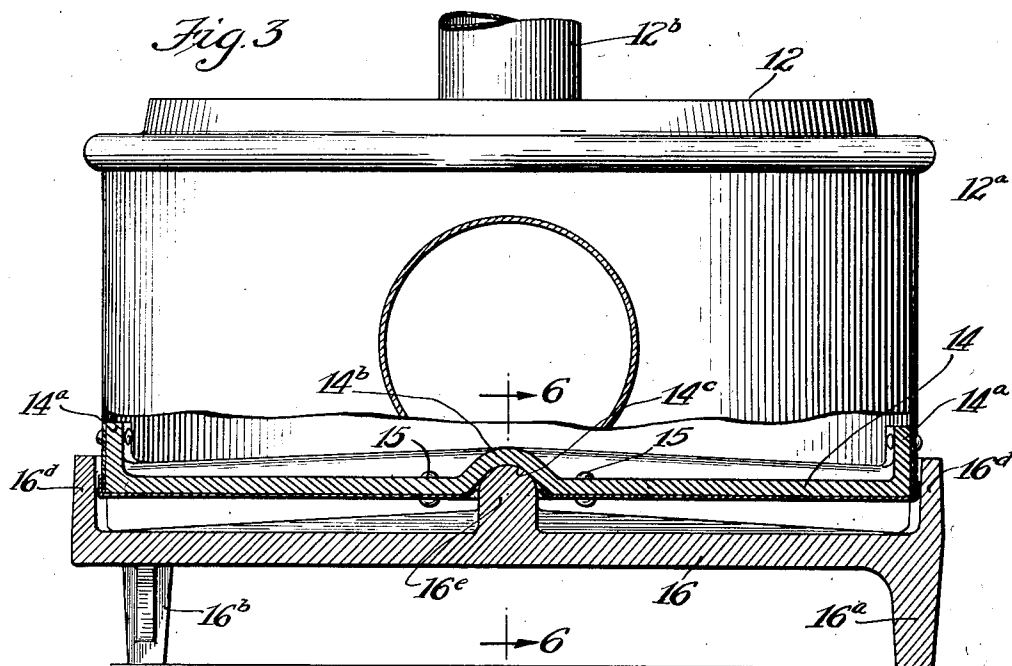
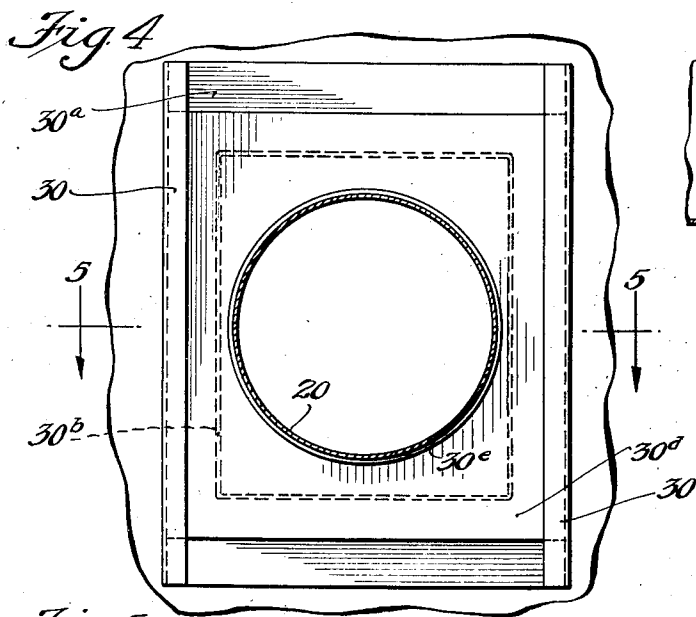
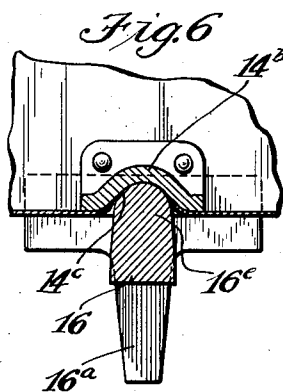
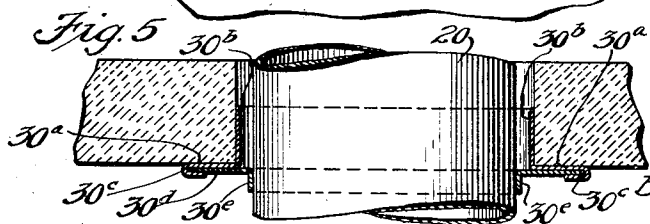
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OIL BURNER CONSTRUCTION

Filed Jan. 22, 1930

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

AUGUSTUS J. FRAME, OF COLUMBUS, OHIO, ASSIGNOR TO FRANKLIN OIL HEATING, INC.,
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OIL BURNER CONSTRUCTION

Application filed January 22, 1930. Serial No. 422,510.

This invention relates to oil burner construction and has for its object to provide a new and improved means of mounting an oil burner or fuel burning apparatus.

5 Hitherto, particularly with respect to oil burners of the vaporizing type utilizing a retort or pot for the maintenance of a pool of oil which is gasified for combustion, it has been customary to install the pot or retort
10 as nearly level as possible in the firebox of the heating apparatus, after which the duct by which air is conveyed to the retort and firebox is sealed in the door or aperture through which it enters the firebox. A fairly accurate
15 leveling of the pot or retort is necessary for proper operation, and frequently only a test under actual operating conditions will determine whether or not the proper leveling has been obtained. If, as frequently happens, the
20 pot has not been set with sufficient accuracy and with proper leveling, it is necessary to tear down the means sealing the entrance for the air duct and endeavor to relevel the pot inside the furnace. These operations may
25 have to be repeated several times and add much to the difficulty and expense of installation.

With my invention, disclosed herein, it is possible to quickly and readily mount the pot
30 in the firebox and thereafter to level it, even during operation, from outside the furnace.

These and other objects and the structure whereby they are accomplished will be more fully described and set forth in the following specification, and as shown in the accompanying drawings in which:
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Fig. 1 is a plan view of my invention showing in more or less diagrammatic form in cross section the firebox;

40 Fig. 2 is a side elevation of the structure illustrated in Fig. 1;

Fig. 3 is a vertical section along the line 3—3 of Fig. 2, being drawn to enlarged scale;

45 Fig. 4 is a front elevation of the closure means;

Fig. 5 is a horizontal section along the line 5—5 of Fig. 4; and

Fig. 6 is a vertical section along the line 6—6 of Fig. 3.

Like numerals refer to like elements

throughout the drawings in which 10 indicates generally the wall of a furnace or other heating apparatus which encloses the firebox and ashpit 10-a. The front wall is provided with the usual ash door opening or the like
55 10-b.

12 indicates generally a pot or retort particularly designed for the burning of oil, it being unnecessary to describe this portion of my invention in particular detail other than
60 to mention that it includes an external casing 12-a, an inner retort to which oil or fuel is supplied and a central air distributing pipe 12-b. In the bottom of the casing is mounted a bridge or reinforcing member 14,
65 shown as attached to the casing by means of rivets 15 or the like. This member is provided with upstanding flanges 14-a at its extremities which are similarly secured to the wall of the casing. At its central portion the
70 member 14 is upwardly bent and recessed as indicated at 14-b to provide a recess 14-c. Adjacent this recess the bottom of the casing 12-a is apertured and the portion surrounding the aperture is intended to lie against the
75 surface of the recess 14-c.

A supporting member 16 is provided, being of elongated contour and provided with one supporting leg 16-a at one end and a pair of spaced supporting legs at the opposite end.
80 Above the legs flanges 16-d project upwardly at each end for purposes hereinafter described. From the central portion of the member 16 upwardly projects a boss 16-e
85 rounded at the top and of such dimension as to easily fit in the recess 14-c. This provides a species of swiveling mount for the pot or casing, as is illustrated in Fig. 3 for example, the flanges 16-d being located outwardly of
90 the casing 12-a and above the base thereof, the arrangement being such that the pot 12-a may be freely rotated or swiveled upon the boss 16-e without interference from the flanges 16-d, at least within that range of
95 movement which is desirable or necessary for adjustment of position of the pot. The flanges 16-e prevent lateral displacement or shift of the pot upon the supporting member 16.

In the embodiment of my invention illus- 100

trated, a duct 20 is provided which leads through the furnace aperture 10-b and which is rigidly secured to the casing 12-a at one end. At its other end the duct 20 is coupled or attached to the outlet end 21-a of a fan casing 21 so that it may be rigidly secured thereto. A fan of any suitable construction (not shown) is located in the casing 21 and is driven by the motor 22 mounted upon the table 23 upon which is also mounted (in the form shown) controlling mechanism located with box or casing 24. It is not necessary to illustrate or describe this control mechanism herein. The fan casing 21 is provided with air inlets 21-b controlled by rotatable damper or valve 26. It will be apparent that the control mechanism, motor, fan and, to a certain extent, the duct 20 are supported by the table 23.

At three corners of this table 23 are provided supporting legs 28 slidably mounted in suitable apertures and secured in adjusted position by means of set screws 29.

Surrounding the duct 20 is what I have termed a closure member or means generally indicated by the numeral 30 and comprising a relatively fixed plate 30-a having a rearwardly extending tubular portion 30-b and being overturned at its sides as indicated by numeral 30-c. Slidably mounted, in the channels provided by these overturned sides 30-c, is the relatively movable plate 30-d apertured to closely fit around the duct 20, being flanged at 30-e to provide a snugger fit for the duct while permitting relative rotation of the duct with respect to the plate.

After placement of the pot or retort in the chamber, firebrick or refractory material, generally indicated by numeral 35, is utilized to fill or seal the opening 10-b, being arranged to closely fit and engage the tubular portion 30-b as illustrated in Figs. 1 and 2, for example. The fixed and movable plates comprising the closure member 30 are located at the outside of the wall formed by the refractory material 35.

In the use of my invention in installing the mechanism, the supporting member 16 is first positioned in the desired location in the firebox, being supported directly upon the floor of the firebox or upon firebrick, or the like, as may be necessary to bring the pot to the desired height. This supporting member 16 may be easily located so as to be approximately level, but some irregularity in the floor of the firebox may preclude its being mounted exactly level, as is frequently the case. The casing 12-a is then mounted upon the box 16-e and the duct 20 coupled to the fan casing 21-a, after which the aperture or door-opening 10-b is closed up, as illustrated in Figs. 1 and 2. The legs 28 being adjusted to obtain as nearly a level condition of the pot as is possible to obtain by estimate, the apparatus may be set in op-

eration. Observation of such operation will enable the skilled workman to determine whether or not the pot is properly leveled, so that the depth of oil maintained in the pot is substantially uniform over the bottom thereof. If it appears from observation that the pot is not properly leveled, it is not necessary to tear down the sealing refractory 35 and endeavor to level the pot inside of the firebox, a difficult job at best, but the legs 28 may be adjusted to impart such adjustment of position to the casing 12-a as is necessary through the connecting duct 20. The relatively movable plate 30-d will readily slide up and down, as may be necessary, to accommodate this adjustment, and the duct 20 may rotate as may be necessary in the flange portion 30-e of the plate 30-d, if such movement be necessary.

In this manner and with this means, oil burning mechanism of the character illustrated may be readily and quickly installed and may be accurately and truly leveled from without the furnace or heating apparatus to obtain proper combustion.

While I have illustrated and referred to the oil receiving and burning element 12 as a pot, it will be apparent that other shapes of fuel receiving devices may be substituted without departing from the spirit of my invention, and in general I do not wish to be restricted to the embodiment illustrated and described in the drawings and specification, respectively, except as I may necessarily be restricted thereto by the appended claims properly interpreted in view of the prior art.

What I claim is:

1. In combination with heating apparatus including a wall enclosing a chamber and having an aperture therein, a pot located in said chamber, a duct leading thereto, a supporting member locatable within said chamber, said pot being movably supported in said chamber by said member, and an adjustable closure for said aperture, said closure being apertured, said duct extending through said aperture in said closure and rotatable relative thereto.

2. In combination with heating apparatus including a wall enclosing a chamber and having an aperture therein, a pot located in said chamber, a duct leading thereto, a supporting member locatable within said chamber, said pot being movably supported in said chamber by said member, and a slidable closure for said aperture, said closure being apertured, said duct extending through said aperture in said closure.

3. In combination with heating apparatus including a wall enclosing a chamber and having an aperture therein, a pot located in said chamber, a duct leading thereto, a supporting member locatable within said chamber, said pot being movably supported

in said chamber by said member, and a slidable closure for said aperture, said closure being apertured, said duct extending through said aperture in said closure and rotatable relative thereto.

4. In combination with heating apparatus, including a wall enclosing a chamber and having an aperture therein, a pot located in said chamber, a duct leading thereto, a closure for said aperture, said closure being apertured, said duct extending through the aperture in said closure, said closure comprising a relatively fixed closure plate and a slidable closure plate, said duct extending through the latter and movable therewith with respect to said fixed closure plate.

5. Apparatus of the class described comprising a pot, means to movably support the same, a duct communicating with and rigidly secured to said pot, a closure member, said duct extending therethrough, and means to adjustably move said duct and thereby said pot, said closure member comprising a relatively fixed portion and a relatively movable portion, the latter being apertured to surround said duct.

6. In combination, an oil burning element comprising a pot and a supporting member, said member being provided with a supporting portion, said pot being mounted upon said portion for swivel movement, said supporting member being provided with upwardly projecting portions located outwardly of said pot and extended above the bottom thereof.

7. In combination, an oil burning element comprising a pot, a supporting member therefor, said supporting member being provided with an upstanding supporting portion, said pot being recessed to fit on said portion and permit relative movement of said pot with respect to said supporting member, said supporting member being further provided with upwardly projecting portions located outwardly of said pot and extending above the bottom thereof to prevent lateral displacement of said pot with respect to said supporting member.

8. In combination with an oil burning element comprising a casing, a supporting member therefor, a bridge member located in said casing, said supporting member being provided with an upwardly projecting supporting portion, said bridge member and casing being recessed to rest upon said supporting portion and to permit swivel movement of said casing with respect to said supporting member.

9. In combination with an oil burning element comprising a casing, a supporting member therefor, a bridge member located in said casing, said supporting member being provided with an upwardly projecting supporting portion, said bridge member and casing being recessed to rest upon said support-

ing portion and to permit swivel movement of said casing with respect to said supporting member, said supporting member being provided with upwardly projecting portions outwardly of said casing and extending above the bottom thereof.

10. Apparatus of the class described including a retort for permanent installation in a combustion chamber, co-operative mechanism for location exteriorly of said combustion chamber and means joining said retort and said mechanism, a sliding closure surrounding said means, said mechanism including adjustable members constructed and arranged for adjustment of the position of said retort through the medium of said means.

In witness whereof, I hereunto subscribe my name this 15th day of January, 1930.

AUGUSTUS J. FRAME.

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