Jan. 12, 1937. J. H. NUNN, JR 2,067,783

STOVE

Filed Dec. 12, 1935 3 Sheets-Sheet 1

Fig. 1.

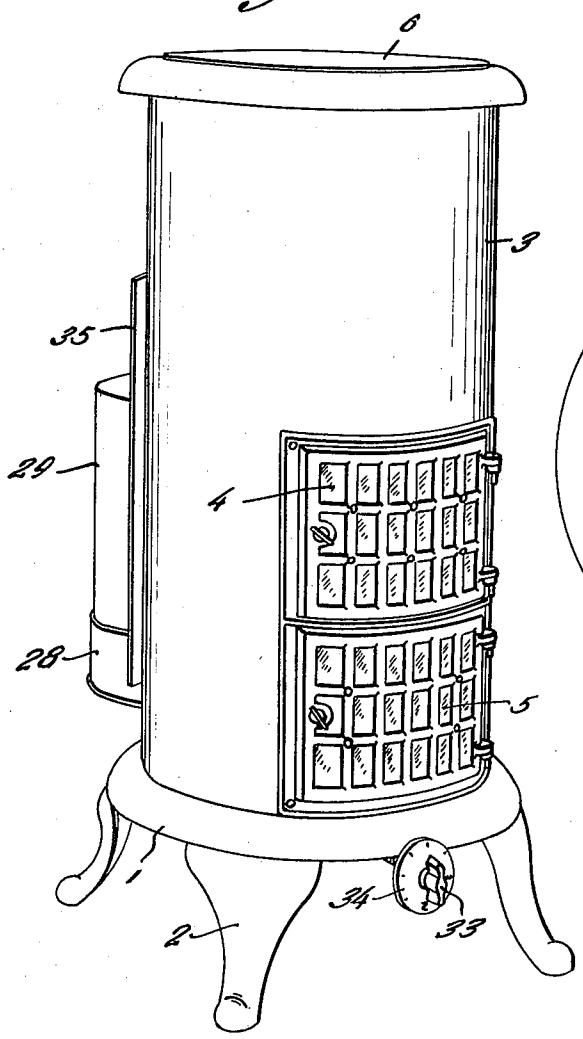


Fig. 2.

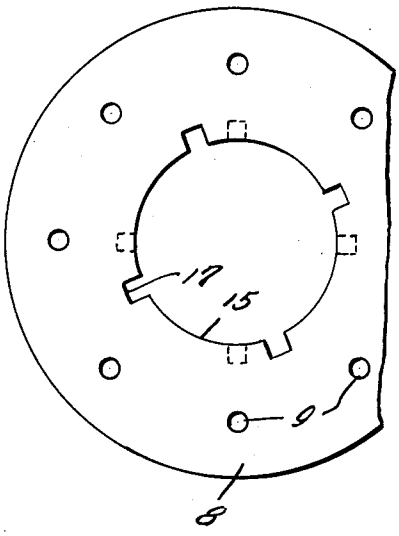
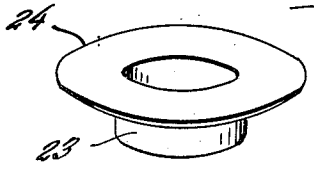


Fig. 3.



Inventor

J. H. Nunn, Jr.

By Clarence A. O'Brien

Attorney

Jan. 12, 1937. J. H. NUNN, JR 2,067,783

STOVE

Filed Dec. 12, 1935 3 Sheets-Sheet 2

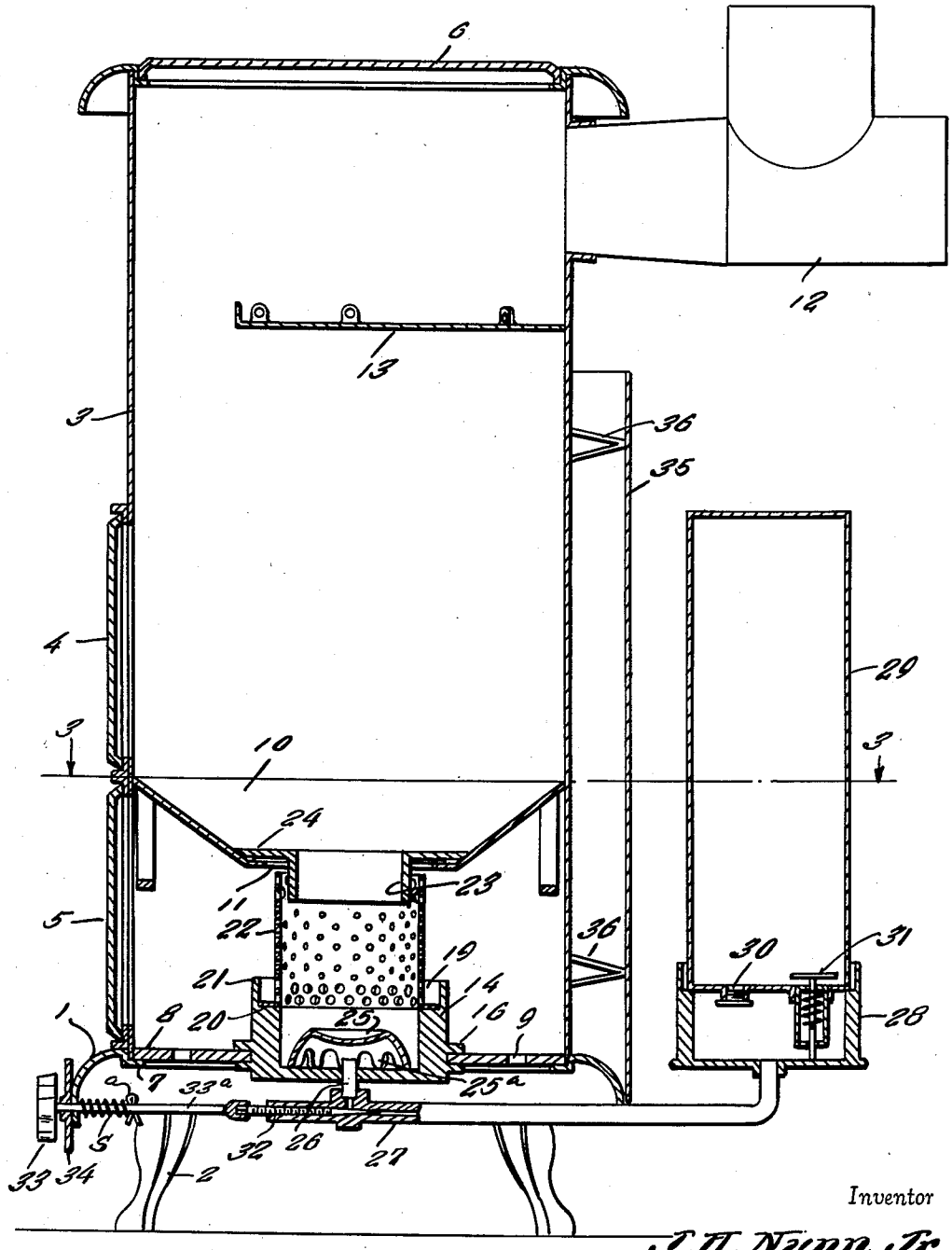


Fig. 2.

Inventor

J. H. Nunn, Jr.

By Clarence A. O'Brien

Attorney

Jan. 12, 1937. J. H. NUNN, JR 2,067,783

STOVE

Filed Dec. 12, 1935 3 Sheets-Sheet 3

Fig. 3.

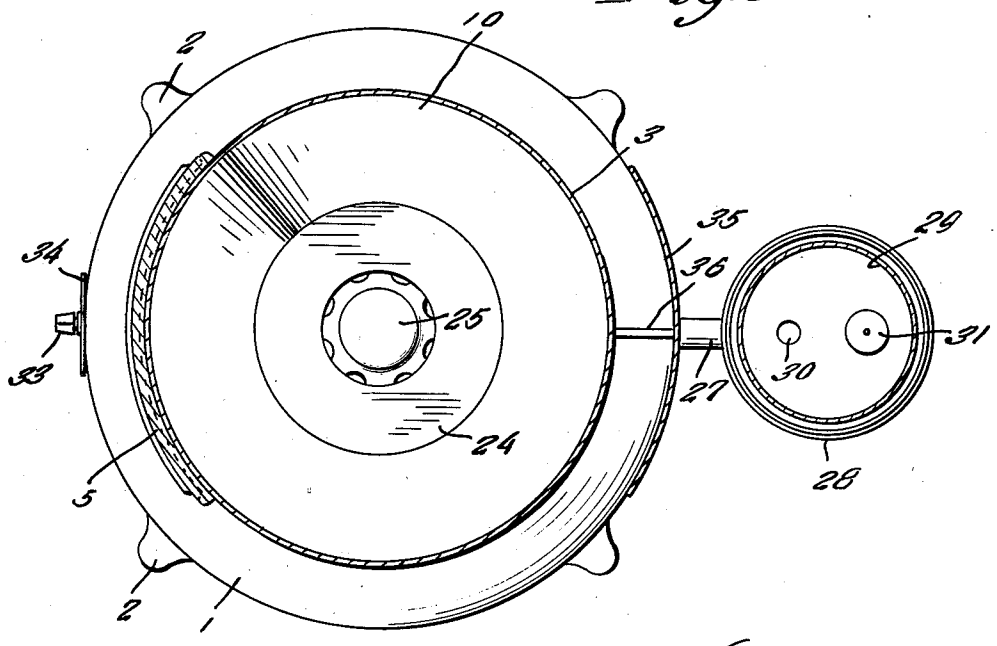
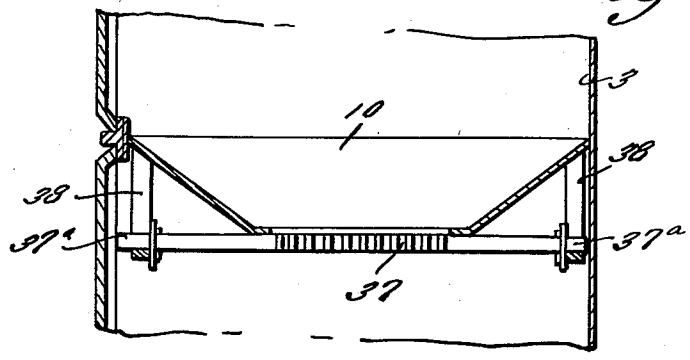


Fig. 4.



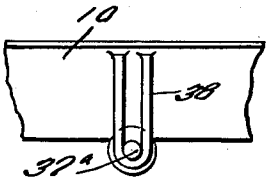


Fig. 5.

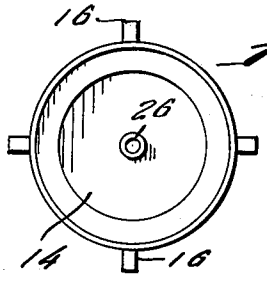


Fig. 6.

Inventor

T. H. Nunn, Jr.

By Clarence A. O'Brien

Attorney

Patented Jan. 12, 1937

2,067,783

UNITED STATES PATENT OFFICE

2,067,783

STOVE

James H. Nunn, Jr., Snyder, Tex.

Application December 12, 1935, Serial No. 54,130

2 Claims. (Cl. 126—93)

This invention relates to improvements in stoves and has as its object the provision of a stove used either for heating or cooking purposes.

A further object of the invention is to provide a stove wherein coal, wood or oil may be readily used as fuel.

A further object of the invention is to provide a stove of the character above mentioned having improved oil burner means associated therewith.

Further in accordance with the present invention a stove is provided wherein certain parts of the oil burner may be easily removed and a grate substituted therefor so that coal or wood may be used for fuel.

The invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a perspective view of a stove embodying the features of the present invention.

Figure 2 is a longitudinal sectional view through the stove.

Figure 3 is a horizontal view taken substantially on the line 3—3 of Figure 2.

Figure 4 is a fragmentary detail sectional view through the stove illustrating the use of a grate.

Figure 5 is a fragmentary detail view showing the manner of mounting the grate.

Figure 6 is a top plan view of an oil cup or pan.

Figure 7 is a plan view of a ring-like bottom wall for the stove.

Figure 8 is a perspective view of a collar hereinafter more fully referred to.

Referring to the drawings by reference numerals it will be seen that the improved stove comprises a base 1 supported on legs 2. Suitably mounted on the base 1 is the drum or casing 3 of the stove. At the front thereof, the casing or drum 3 is provided with a fire door 4 and a clean out door 5. The top of the stove is indicated by the reference numeral 6 and is removable as will be clear from a study of Figure 2.

Provided at the bottom of the stove is an annular seat 7 that supports a removable ring-like bottom wall 8. The wall 8 is provided with perforations 9 for the passage of air upwardly therethrough.

At the proper distance above the bottom wall 8 the stove is provided with a substantially frusto-conical fire bowl 10 having an opening 11 in the bottom thereof.

Leading from the stove is the flue 12 and below the connection between the stove and the flue is a suitable baffle 13.

When it is intended to use oil as a fuel, there is used in conjunction with the stove an oil cup or pan 14 that is preferably circular and is accommodated within an opening 15 provided in the bottom 8 of the stove.

For releasably securing the pan 14 in position, the latter is provided at circumferentially spaced points with pairs of aligned lugs 16, and at the opening 15 the bottom 8 is notched as at 17 to accommodate these lugs. Obviously, in assembling the pan 14 and bottom 8, the lugs 16 are aligned with the notches 17 and the lower lugs 16 pass through the notches to the underside of the plate or bottom 8. The bowl 14 is then given a turn in either direction so as to engage the lugs 16 with the inner edge of the plate 8 at one side of the notches 17 as suggested in Figure 7 and as shown in Figure 2 to thereby support the pan or cup 14 on the bottom 8.

At the top of the bowl or pan 14, the wall thereof is provided with a groove 19 forming a shoulder 20 and an upstanding rim 21.

A perforated cylinder 22 of materially less diameter than the rim 21 has its lower edge resting on the shoulder 20 and at its upper end the cylinder terminates in slightly spaced relation to the bottom of the fire bowl 10.

There is also provided a collar 23 that is of less diameter than the perforated cylinder 22. This collar 23 extends downwardly through the opening 11 in the bottom of the bowl 10 to terminate within the upper portion of the cylinder 22. At its upper end, the collar 23 is provided with an outstanding flange 24 that is formed at its edge to engage the wall of the fire bowl 10 to provide a false bottom for said bowl.

In connection with the above it will be noted that the perforations at the upper end of the cylinder 22 opposite to the collar 23 are materially larger than the intermediate perforations while also the perforations of the end portion of the cylinder 22 within the confines of the rim 20 are also materially larger than the intermediate perforations. Further by having the perforations in the lower portion of the cylinder large, and the space 19 between the rim 20 and the lower end of the cylinder, provision is made whereby a greater volume of air is permitted to pass through the lower portion of the cylinder and into the burner pan or cup 14 and directly upon the vaporizer 25 to promote quick combustion. Also, by having the holes in the

upper end of the cylinder larger there will not be any material reduction of air through the perforations of the cylinder as would be the case were the upper perforations as small as the intermediate perforations. Thus, a sufficient draft is assured with the result that maximum combustion will be obtainable whereby the greatest heat will result.

The vaporizing pan **25** fits within the oil pan or cup **14** directly over the oil inlet nozzle **26** that extends upwardly through the bottom of the pan or cup **14**. This vaporizer **25** is in the form of a concave plate having a down turned marginal edge notched at intervals to provide spaced legs **25***a* between which the oil, vaporizing beneath the vaporizer **25** as it discharges from the nozzle **26** escapes to insure a thorough commingling of the oil and air so that a hot flame will result.

It will be understood that vaporizer **25** serves to concentrate the heat at about the point where the oil enters the bowl or pan **14**. Also, the space between the legs **25***a* of the vaporizer will permit the free flow of the vaporized gases toward the peripheral wall of the bowl or pan **14** preventing the formation of a cold spot in the center of the oil pan **14**, such a "cold spot" being undesirable for the reason that it causes the accumulation of carbon and soot, interfering with the proper and desired operation of the burner.

Attention is also called to the collar **23** and its flange **24**. The collar **23** serves to direct some of the combustion air downwardly while its flange **24** serves as a false bottom for the fire bowl **10**. As is well known the fire bowl must be replaced when the bottom thereof burns out and this happens more or less frequently due to the fact that the same is subjected to the greatest heat and is about the first part of a stove to burn out. Thus, with the flange **24** serving as a bottom for the bowl **10** in the event the flange burns out the collar **23** and its flange may be easily replaced, such a replacement being much more economical than where an entire new fire bowl must be replaced. It will also be noted from a study of Figure 2, that the arrangement of the bowl **10** and collar **23** is such that the latter is readily accessible and may be easily removed.

The feed jet **26** of the burner is suitably connected with the fuel feed pipe **27**. The pipe **27** extends from the back to about the center of bowl **14** and connected with the rear end of the pipe **27** is a barometric fuel feed device.

This barometric fuel feed device comprises a cup **28** suitably connected with the inlet end of the pipe **27** and receiving the inverted end of a fuel oil container **29**. The container **29** is provided with a filling plug **30** and a spring pressure outlet valve **31** the stem of which is arranged so as to engage the bottom of the cup **28** upon disposition of the container **29** with its upper end placed within the bowl **28** so that this valve **31** moves to open position and is maintained in said position while the container **29** remains inverted. Obviously, the fuel from the container **29** passes through the valve and into the cup **28**, passing from the cup **28** through the pipe **27** to the nozzle or jet **26**.

For controlling the supply of fuel to the jet **26** there is provided a conventional needle valve **32** the operating knob **33** of which is disposed at the front of the stove and is provided with an index to cooperate with a suitable dial **34** provided at the front of the stove whereby the operator may readily determine the position of the valve, and thus regulate the flow of fuel to the burner.

The barometric feed is located behind the stove and a shield **35** is disposed between the casing of the stove and the feed device, the shield **35** being fixedly braced and supported from the stove as at **36**.

In connection with the above it may be noted that the barometric feed container as well as the oil cup or pan **14** may be readily removed. To effect this removal all that is necessary is to manipulate the parts referred to so that the bowl or pan **14** is rotated to align the lugs **16** with the notches **17** whereupon the cup or pan **14** may be moved downwardly through the opening **15** to effect the removal of the bowl.

The collar **23** may be removed from the stove through the door **4**, and also the cylinder **22** may be withdrawn through the opening **11** and the door **4**. It will thus be seen that ready access is had to the parts of the oil burner permitting an easy removal and replacement of said parts.

When it is desired to use coal or wood for fuel, the parts of the oil burner are dispensed with and removed as above suggested, and in their stead, there is substituted a suitable dump grate indicated by the reference numeral **37**. (See Figure 4.) Again referring to this figure and to Figure 5, it will be seen that to support the grate **37** suspension brackets **38** depend from the fire bowl **10** in opposed relation to accommodate the pintles **37***a* of the grate.

Referring again to the needle valve structure for controlling the flow of fuel from the pipe **27** to the jet **26** it will be noted that the operating knob **33** for the needle valve **32** is provided on one end of a shank **33***a* formed at its free end with a socket receiving the squared end of the needle valve **32** so that a turning of the knob **33** will be transmitted to the valve **32** for adjusting the latter. The socket on the end of the shank **33***a* is yieldably held in engagement with the squared end of the needle valve **32** through the medium of a coil spring *s* confined on the shank **33** between the depending apron or skirt **1** of the stove and a cotter pin or the like *a* provided intermediate the ends of the shank **33***a* as clearly shown in Figure 2.

It is thought that full appreciation of the construction, utility and advantages of the invention will be had from the foregoing.

Having thus described the invention, what is claimed as new is:

1. In a stove, a bottom wall for said stove, said bottom wall being provided with a large opening and perforations about said opening, said opening being centrally located, an oil pan removably supported within said opening, said oil pan having a peripheral wall in its upper edge with an internal groove presenting a rim and a shoulder spaced downwardly from the upper edge of the rim, a perforated cylinder having a lower edge resting on said shoulder and spaced inwardly from said rim, said perforated cylinder having perforations in the lower portion thereof of materially larger diameter than the perforations in an upper intermediate portion thereof, said lower perforations being below the horizontal plane of the upper edge of the oil pan, means for feeding oil to said pan, a fire bowl supported above said bottom plate and having a bottom provided with an opening, and a col-

lar extending through said opening and terminating within said perforated cylinder in materially spaced relation to the wall of said cylinder, and said cylinder having perforations in the upper portion thereof of materially greater diameter than the intermediate perforations and positioned above the horizontal plane of the lower edge of said collar.

2. In a stove, a bottom wall for said stove, said bottom wall being provided with a large opening and perforations about said opening, said opening being centrally located, an oil pan removably supported with said opening, said oil pan having a peripheral wall provided in its upper edge with an internal groove presenting a rim and a shoulder spaced downwardly from the upper edge of the rim, a perforated cylinder having a lower edge resting on said shoulder and spaced inwardly from said rim, said perforated cylinder having perforations in the lower portion thereof of materialy larger diameter than the perforations in an upper intermediate portion thereof, said lower perforations being below the horizontal plane of the upper edge of the oil pan, and means for feeding oil to said pan, a fire bowl supported above said bottom plate and having a bottom provided with an opening, a collar extending through said opening and terminating within said perforated cylinder in materially spaced relation to the wall of said cylinder, said cylinder having perforations in the upper portion thereof of materially greater diameter than the intermediate perforations and positioned above the horizontal plane of the lower edge of said collar, and said down draft collar being provided with an outstanding flange engaging in the bottom of said fire bowl for removably supporting the collar therein, and providing a bottom for said bowl.

JAMES H. NUNN, JR.