Jan. 4, 1927. 1,613,020

L. S. CHADWICK

OIL BURNER

Filed Oct. 22, 1923 3 Sheets-Sheet 1

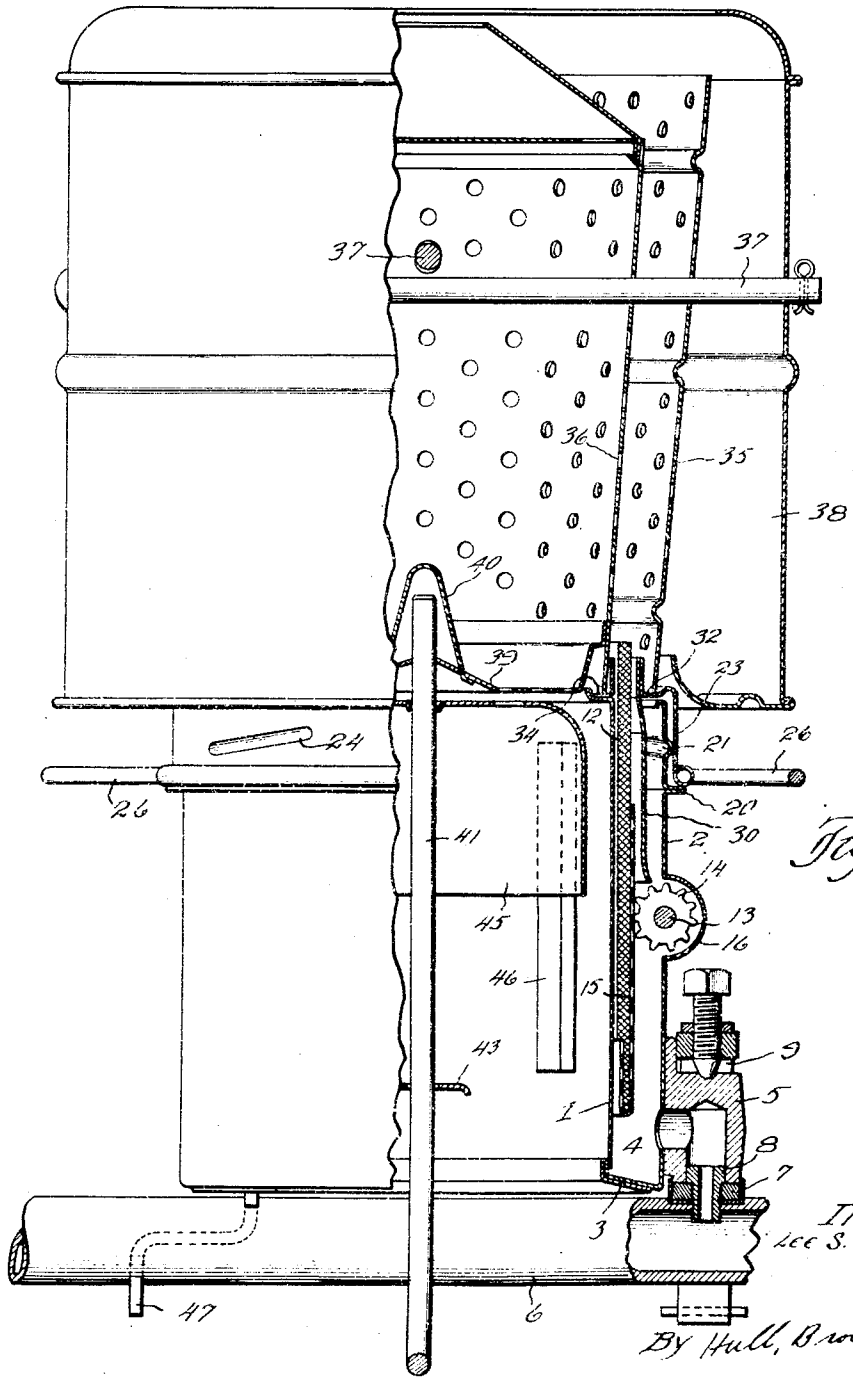


Fig. 1.

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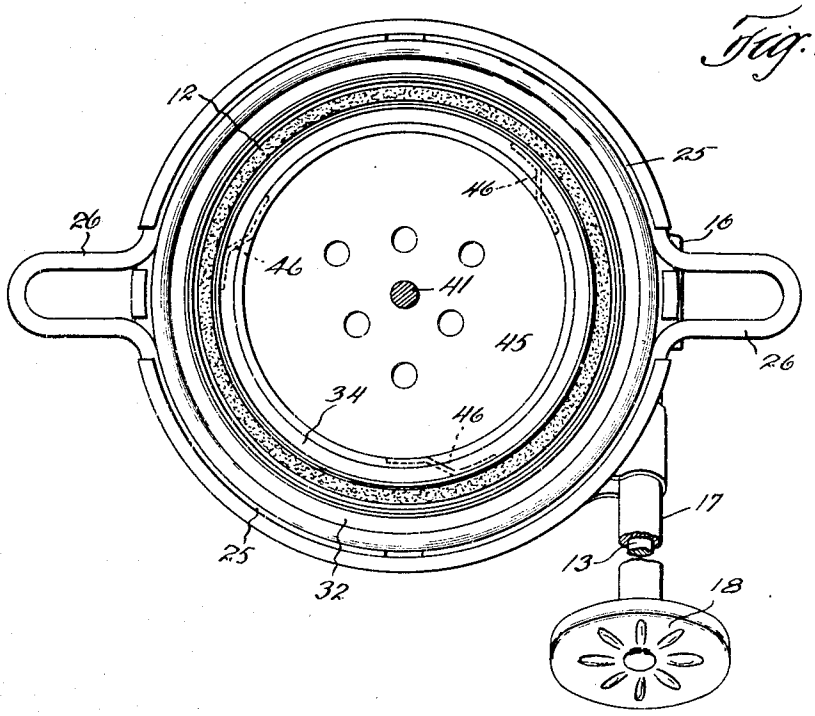
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Fig. 2.



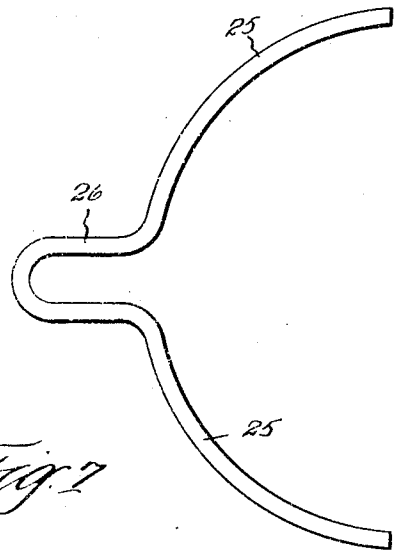


Fig. 7

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Fig. 3

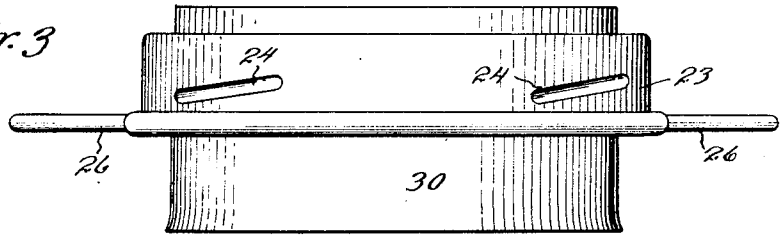
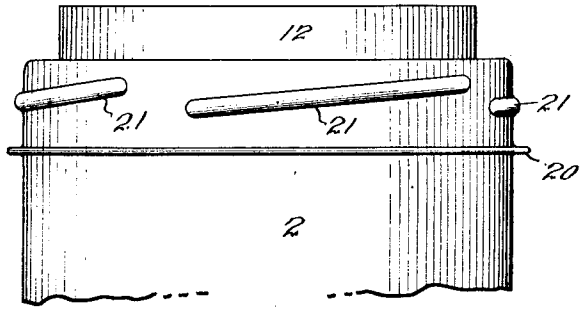


Fig. 4



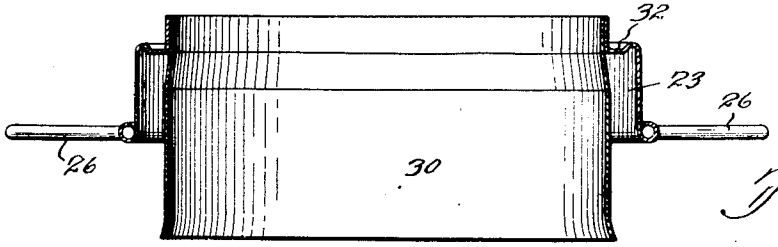


Fig. 5

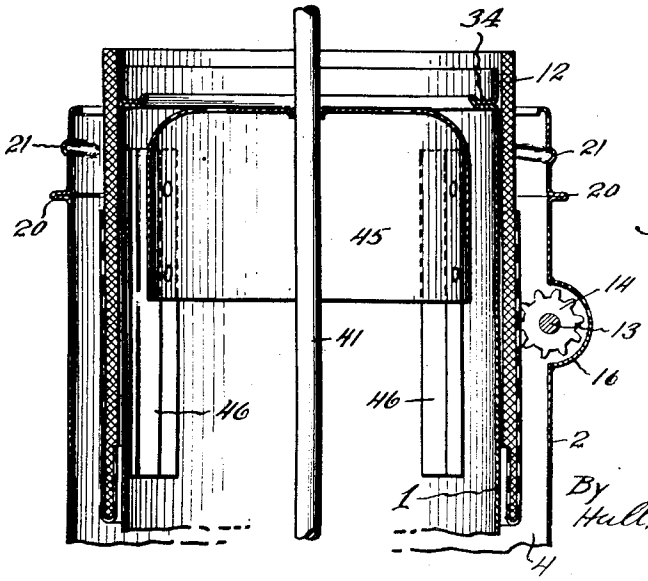


Fig. 6

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Patented Jan. 4, 1927.

1,613,020

UNITED STATES PATENT OFFICE.

LEE S. CHADWICK, OF SHAKER HEIGHTS VILLAGE, OHIO, ASSIGNOR TO PERFECTION STOVE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

OIL BURNER.

Application filed October 22, 1923. Serial No. 670,207.

My present invention has to do with that type of oil burners that are used extensively in cooking stoves and which are comprised of inner and outer wick tubes enclosing between them an oil reservoir or wick space wherein a tubular wick is vertically adjustable and above and in operative relation to which tubes are supported so-called commingling tubes that are surrounded by a drum; and the primary purpose of the invention is to improve the construction and operation of such burners and render more convenient their use by providing a readily removable top for the outer wick tube by virtue of which free access may be had to the wick and wick space. The importance of this feature will be more fully appreciated when it is explained that in the use of burners of this class food stuffs, such as sticky liquids and cereals, frequently boil over and run down between the commingling tubes and into the wick space with the result that the burner becomes clogged and the operating parts stuck. This necessitates the scraping and cleaning out of the wick space and to expedite this operation the wick may be removed, all of which is rendered especially easy by reason of the removable top of the outer wick tube. It should also be pointed out that, in constructing the burner with the removable top, the diameter of the outer wick tube is considerably increased over what is found in the standard burner, with the marked advantage of affording the wick perfect freedom of movement at all times notwithstanding the accumulation of foreign matter in the wick space; and this enlargement of the outer wick tube allows quite a quantity of the material to gather at the bottom of the wick space without interfering with the operation of the wick, or of the burner in general. That this freedom of movement of the wick because of the increased diameter of the outer wick tube may be better understood it should be explained that in this type of burner the wick and wick carrier ride on the inner wick tube, and particularly on the side thereof next to the wick raising spindle because the pinion which is carried by the spindle and which meshes with the perforations in the carrier forces the wick and carrier against said side of the inner tube. The wick and carrier are therefore relatively free on the opposite side of the inner tube and with the additional room between the inner and outer tubes afforded by the present construction, there is no liability of the wick being forced over by the pinion far enough to engage it or the carrier with the remote side of the outer tube, a fault not uncommon in the older types of burners.

Further and more specific objects are to provide, in a burner of the foregoing nature, a removable top for the outer wick tube, which is impossible of becoming stuck; is provided with handles for facilitating its application and removal; incorporates a very desirable form of support for the outer commingling tube; is simple and economical of construction and manufacture; and is provided with a definite stop which insures the proper relation between the upper ends of the wick tubes.

In the drawings accompanying and forming a part hereof, Fig. 1 is a front view of the burner showing one side of it in central section; Fig. 2 is a plan view of the burner with the drum and commingling tubes removed; Figs. 3 and 4 are elevational views of the removable top, and the upper portion of the burner, respectively; Figs. 5 and 6 are central sections through the respective parts shown in Figs. 3 and 4; and Fig. 7 is a detail of one of the handles of the removable top.

Describing the construction by the use of reference characters, 1 designates the inner wick tube and 2 the outer wick tube which are connected at their lower ends by an annular wall 3 thereby to enclose an oil reservoir or wick space 4 which has communication, through an elbow fitting 5, with an oil supply pipe 6, as is customary in burners of this character. The elbow fitting is secured by suitable means to the lower portion of the outer wick tube 2 and its lower end engages a seat 7 about a nipple 8 which connects the seat to the supply pipe, the parts being bound together by a clamp 9.

A tubular wick 12 occupies the oil reservoir or wick space 4 and is guided on the tube 1, and the same may be raised and lowered by means of a spindle 13 which has driving connection with the wick through a pinion 14 that is secured to the spindle and meshes with perforations in the wick carrier 15 wherewith the wick is equipped. The pinion 14 is housed within a lateral extension

16 of the outer wick tube 2, and the spindle 14 extends forwardly therefrom through a tube 17 and is adapted to be manipulated by a hand wheel 18 that is fastened to its forward end. It will be observed that the outer wick tube 2 is spaced a material distance from the inner wick tube—a distance considerably greater than the thickness of the wick, and a suitable distance from its upper end is provided with a shoulder 20. Comparatively short sections 21 of a steep pitch multiple thread are formed within the portion of the outer wick tube 20 above the shoulder 22 by displacing portions of the material of said tube outwardly.

Adapted to fit down over the upper portion of the outer wick tube is a removable top or cap 23 which has thread sections 24 similar to, and for cooperation with, the thread sections 21 of the wick tube. The lower edge of the removable top 23 is curled about base portions 25 of wire handles 26 which extend from diametrically opposite portions of the top, the base portions 25 of said handles being formed to fit about the top, as clearly shown in Figs. 2 and 7. The curled over edge portion of the top is notched where the handles 26 extend outwardly from their base portions. By this simple means the top is provided with very rigid handles which greatly facilitate the application and removal of the top.

The top carries a sleeve 30 that is flared outwardly at its lower end and at its upper end is slightly contracted and fits within the reduced upper end of the top 23. The purpose of this sleeve is to properly guide the wick carrier as the latter is elevated, and to this end is flared at the bottom to insure an unobstructed entrance of the carrier and large enough in diameter to afford freedom of movement. Between the reduced upper end of the top, and the body portion thereof, is a ledge 32 which is given a channel formation by beading the outer edge portion of the ledge where it joins said body portion. The sleeve and top may be secured together by any suitable method, as by spot welding. The inner wick tube is formed with a ledge 34 which is in the same horizontal plane as the ledge 32.

Resting upon the respective ledges 32 and 34 are commingling tubes 35 and 36 which are connected together by cross rods 37. These rods support a drum 38 which encloses the commingling tubes. The bottom wall 39 of the inner commingling tube 36 has connected to it, at its center, a thimble 40 within which the upper end of a lifter rod 41 engages, said rod extending down to a point below the burner where it is equipped with a suitable handle (not shown) by means of which the commingling tubes and drum may be lifted for the purpose of lighting the wick. The rod 41 is guided through apertures in a bracket 43 and in an air deflector 45 that is supported, through Z bars 46, from the inner wick tube.

A hook 47 extends downwardly and laterally from the side of the burner opposite the elbow fitting 5 and engages the supply pipe 6 to hold the adjacent side of the burner in fixed relation to the supply pipe.

When it is desired to remove the wick as for the purposes of replacement or inspection, the drum and commingling tubes may be lifted from the burner and by means of the handles 26 the top 23 may be unscrewed and removed from the outer wick tube. This gives ready access to the wick and greatly facilitates its removal and replacement. The lower end of the top 23 engaging the shoulder 20, insures proper relation between the upper ends of the inner wick tube and the sleeve 30 (which, in effect, constitutes a continuation of the outer wick tube) and prevents the parts from being screwed together far enough to bind the threads and cause the top to stick.

Having thus described my invention, what I claim is:—

1. In a burner of the class set forth, in combination, an inner wick tube, an outer wick tube, and a removable top surrounding and spaced radially from the upper end of the outer wick tube, the outer wick tube having a stop for positioning the top in a definite relation to the upper end of the inner wick tube, the top having inwardly embossed thread sections and the outer wick tube having outwardly embossed thread sections which cooperate to bind the top against the aforesaid stop.

2. In a burner of the class set forth, in combination, an inner wick tube, an outer wick tube terminating at its upper end below the upper end of the inner wick tube, a removable top having screw thread connection with the outer wick tube, and a handle constructed of wire and comprising a grip portion and a base portion, the latter extending about the edge portion of the top and secured thereto by having such edge portion curled about the base portion.

3. In a burner of the class set forth, in combination, an inner wick tube having adjacent its upper end an inwardly directed flange, an outer wick tube terminating at its upper end slightly below the plane of said flange, a top fitting over and spaced radially from the upper end of the outer wick tube and extending inwardly immediately above said end and then upwardly in spaced relation to the upper end of the inner wick tube, inner and outer commingling tubes arranged to rest, respectively, on the aforesaid flange and on the inwardly extending portion of the top, and means for removably securing the top to the outer wick tube and for locating it at a definite elevation with respect

thereto, said means consisting of inwardly embossed thread sections on the top and outwardly embossed thread sections on the outer wick tube, the outer wick tube having a stop flange against which the lower edge of the top is pressed by the cooperation of the aforesaid thread sections.

4. In a burner of the class set forth, in combination, an inner wick tube having spaced a suitable distance from its upper end an inwardly and then upwardly extending flange, an outer wick tube terminating at its upper end slightly below the plane of said flange, a top surrounding and spaced radially from the upper end of the outer wick tube, said top extending inwardly immediately over the upper end of the outer wick tube and thence upwardly in spaced relation to the inner wick tube, the inwardly extending portion of the top being surrounded by a slightly elevated bead, a sleeve having its upper end fitted within the corresponding end of the top and extending downwardly therefrom a material distance inside the outer wick tube, the outer wick tube having a flange that is arranged to be engaged by the lower end of the top, the top having inwardly embossed thread sections and the outer wick tube having outwardly embossed thread sections which cooperate to press the lower end of the top against the aforesaid flange, the top being provided with a handle, and inner and outer commingling tubes arranged to rest with their respective lower ends on the flange of the inner wick tube and on the inwardly extending portion of the top.

5. In a burner of the class set forth, in combination, an inner wick tube, an outer wick tube terminating at its upper end below the plane of the upper end of the inner wick tube, a top surrounding and spaced radially from the upper end of the outer wick tube, said top extending inwardly over the upper end of the outer wick tube and thence upwardly in spaced relation to the inner wick tube, the outer wick tube having a flange that is arranged to be engaged by the lower end of the top, the top having inwardly embossed thread sections and the outer wick tube having outwardly embossed thread sections which cooperate to press the lower end of the top against the aforesaid flange, wire handles extending from diametrically opposite portions of the top and attached thereto by having parts extending about the top, the edge portion of the top being curled about such parts thereby to secure the handles in place, and inner and outer commingling tubes supported in operative relation to the wick tubes, the latter being arranged to rest with its lower end on the inwardly extending portion of the collar.

6. In a burner of the class set forth, in combination, an inner wick tube, an outer wick tube, and a removable top surrounding and spaced radially from the upper end of the outer wick tube, said top having a laterally extending handle, the outer wick tube having a stop for positioning the top in a definite relation to the upper end of the inner wick tube, the top having inwardly embossed thread sections and the outer wick tube having outwardly embossed thread sections which cooperate to bind the top against the aforesaid stop.

7. In a burner of the class set forth, in combination, an inner wick tube, an outer wick tube, and a removable top surrounding and spaced radially from the upper end of the outer wick tube, said top having diametrically opposed handles, the outer wick tube having a stop for positioning the top in a definite relation to the upper end of the inner wick tube, the top having inwardly embossed thread sections and the outer wick tube having outwardly embossed thread sections which cooperate to bind the top against the aforesaid stop.

In testimony whereof, I hereunto affix my signature.

LEE S. CHADWICK.