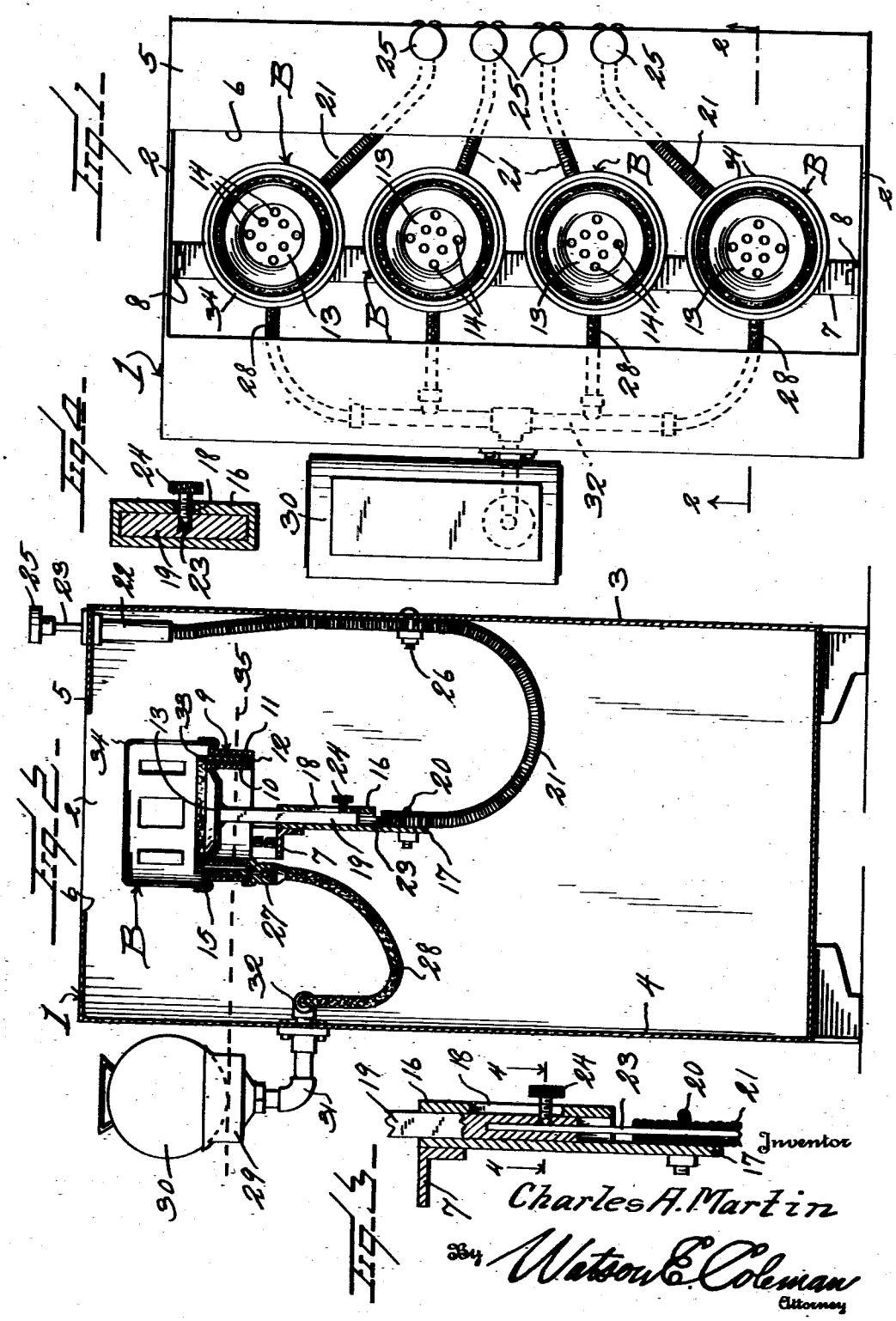
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LIQUID FUEL BURNING STOVE

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LIQUID FUEL BURNING STOVE

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1 Claim. (Cl. 126—45)

This invention relates generally to the class of stoves and pertains particularly to improvements in stoves of the oil burning type which are designed for domestic cooking purposes.

In certain types of oil burning cooking stoves there are employed wicks which are enclosed within chimneys and are supported to be raised and lowered for controlling the burning of the wick and consequently the temperature of the cooking flame. At the present time the wicks are controlled by various types of devices involving toothed units and lever mechanisms whereby the wick may be raised and lowered as desired with respect to the level of the fuel oil in the holder in which the wick is located, and with these controls there are used slip joints in the fuel pipes which include packing nuts, which may be so loose as to leak or so tight as to interfere with the smooth operation of the wick, causing the same to jerk and the flame to sputter. These means of controlling the wick are unsatisfactory for the reasons that they get out of order, the slip joints wear and leak, forming a fire hazard and also because of the fact that it is necessary for the attendant of the stove to stoop down when making adjustments.

The present invention has for its primary object to provide an improved wick carrier or support with means associated therewith whereby the adjustment of the wick can be made easily and quickly by a vertically slidable carrying stem or support which may be operated by a flexible cable.

Another object of the invention is to provide in association with a wick adjusting means of this character a flexible tubular connection between the liquid fuel reservoir and the channel or moat in which the wick is mounted, whereby such channel or moat may be raised and lowered as desired to control the working level for the fuel oil with respect to the wick, without employing slip-couplings which may develop leaks.

Another object of the invention is to provide in a domestic cooking stove a wick control means and carrier of improved design and construction, by means of which the raising and lowering of the wick as desired may be accomplished easily and smoothly by the operator of the stove while standing erect in front of the same and also whereby a fine adjustment of the wick with respect to an overlying object may be accomplished.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing, it being understood, however, that the invention is not to be considered as limited by the specific illustration or description but that such illustration and description constitutes a preferred embodiment of the invention.

In the drawing:

Figure 1 is a view in top plan of a four burner stove in which the present invention is shown for regulating the wick and for supplying the same with fuel oil.

Figure 2 is a vertical section taken substantially on the line 2—2 of Figure 1.

Figure 3 is a vertical section taken through the guide for the wick supporting stem and adjacent associate parts.

Figure 4 is a sectional view on the line 4—4 of Figure 3.

Referring now more particularly to the drawing the numeral 1 generally designates the body or frame of a stove having the end walls 2, the front and rear walls 3 and 4 respectively and a top 5 in which is formed an opening 6 over which a receptacle may be placed to cover one of the burners hereinafter described.

In accordance with the present invention there is provided a suitable support within the stove frame for one or more of the burners, such support being here shown as comprising a bar 7 in the form of angle iron, at each end of which is an upstanding ear 8 which is bolted or otherwise secured to an end wall 2 so that the bar extends from one side of the stove structure to the other below the top 5 and within the area defined by the edges of the opening 6.

In the present stove construction there are shown four burner units each of which is indicated by the character B. Each burner unit comprises an annular receptacle indicated generally by the numeral 9 and which has the spaced vertical inner and outer walls 10 and 11 respectively which are in relatively closely spaced relation and are joined at their lower edges by the bottom 12.

The central portion of the annular receptacle 9 is closed by the dish-like horizontal wall 13 which is joined at its periphery to the top edge of the inner wall 10 and which is provided with a plurality of air transmitting apertures 14.

The top edge of the outer wall 11 of the channel is turned outwardly and downwardly and then extended vertically to form the surrounding gutter 15.

Secured to the burner supporting bar 7 directly beneath the center of the horizontal wall 13 of each burner is the vertically disposed guide 16 which is here shown as being of rectangular

cross-section and having the back wall extended downwardy a substantial distance to form the tail-piece 17. The front wall of the guide 16 is provided with a longitudinal slot 18 for the purpose hereinafter stated.

Secured to the center of the under side of each wall 13 is a supporting stem 19 which extends into the guide 16 and has a close sliding fit therein.

Secured to the face of the tail-piece 17 of each guide by means of a "U bolt" 20 or in any other suitable manner, is an end of tubular sheath 21 which at its other end is secured in a rigid tubular guide 22 which is secured vertically to and has its other end extending through the front part of the top wall 5 as shown in Figure 2. Where a number of these sheaths 21 are employed in association with a corresponding number of burners it is preferred that they all be grouped together at their outer ends as shown in Figure 1 so that the hereinafter described flexible wire control buttons may be easily accessible to an operator of the stove.

Slidably disposed within the flexible sheath 21 is a control wire 23 which, as shown in Figure 3, has one end extended into a bore in the lower end of the stem 19 where it is removably secured by the knurled thumb-screw or binding-screw 24, the stem of which extends through the slot 18 of the guide 16. This slot therefore limits the movement of the stem by limiting the extent to which the screw may move when the flexible actuating wire 23 is longitudinally shifted in its protecting flexible sheath.

The opposite end of the wire, which extends through the rigid guide 22 and above the top 5 of the stove, carries a button 25 as shown, by which the wire may be shifted as desired.

In order that the several sheaths 21 may be firmly secured against movement each is coupled to the front wall of the stove by a "U bolt" 26.

The bottom 12 of the annular channel has secured thereto the nipple coupling 27 to which is attached an end of a flexible liquid fuel conducting pipe 28.

Upon the back of the stove there is mounted a sump 29 or sub-tank in which is placed the usual removable fuel tank 30 from which the fuel runs through a suitable outlet into the sub-tank. The support for the sub-tank may comprise a pipe-line or conduit indicated generally by the numeral 31 which is secured in any suitable manner to the back wall 4 of the stove and which, in a stove having a plurality of burners, may lead to a distributing manifold 32, as shown, mounted within the body of the stove. This manifold is provided with a number of outlets corresponding to the number of burners and flexible pipes for coupling the manifold with the burner so that each burner is separately supplied from the manifold.

The numeral 33 designates a wick which is of circular form and which is disposed within the annular receptacle 9 and each burner includes a chimney 34, the lower edge of which rests in the annular gutter 15 and consequently encircles the top edge of the wick.

The relative positions of the burners and the sub-tank are such that by manipulating the control wire 23 the wick carrying annular receptacle can be raised so that the bottom thereof will be above the fuel level in the sub-tank, which level is indicated by the broken line 35 and consequently, because of the lack of oil, the burner, if lighted, will go out. When it is desired to light a burner the annular receptacle 9 is lowered so that the bottom of the receptacle will be below the fuel level 35 consequently fuel will flow from the flexible pipe into the annular receptacle to be absorbed by the wick.

Because of the employment of the flexible pipe 28 and the consequent elimination of any slip joint this stove construction is leak proof and consequently fire hazards are completely removed or reduced to a minimum.

There are also relatively few parts to wear and no moving parts to get out of adjustment. The fuel pipes and burner are easily and quickly cleaned in case water or food boils over and runs down into the annular fuel receptacle in which the wick is placed. If this should happen it is merely necessary to remove the chimney, take out the knurled binding-screw 24 and lift the entire wick receptacle from the burner unit after which it can be inverted so that water or other material may be poured out.

Because of the adjustment mechanism described the up and down action of the burners is smooth and uniform and is also noiseless.

The flexible fuel pipes 28 may be of any suitable character such, for example, as those used in motor vehicles for conducting gasoline and oil. Such material may be rubber of the oil resistant type or rubberized fabric. The fuel pipes may also be made of coiled metal tubes having sufficient flexibility to allow the burners B free up and down movement.

As previously stated, the construction of the present burner units is such that if water or other fluid boils over and gets into the annular channel in which the wick is supported, this may be readily removed and the channel cleaned by lifting the entire unit out of the stove, and this work may be performed in a few minutes, whereas with other types of burners, in order to put the device back into proper working order, hours may be required to disassemble the structure, clean the parts, and then reassemble them.

In the description, the form and arrangement of the parts shown has been particularly specified, but it is to be understood that the invention is not to be limited either to the type of material of which the parts are constructed, the location of the buttons 25, the shape of the guides for the stems 19, or the form and manner of mounting the bar 7 upon which the burner units are supported. Also, any suitable location may be employed for the fuel receptacle and sump, and any suitable means may be employed for securing the flexible sheath 21 to the stem guide and to the body of the stove, other than the U-bolts particularly shown and described.

What is claimed is:

A liquid fuel burning stove comprising a frame structure having a top, the top having an opening therein, a bar secured horizontally within the frame beneath said opening, a vertically disposed tubular guide secured to the bar, said guide having a skirt portion extending downwardly at one side below the lower end thereof, a stem slidably disposed within the guide and extending beyond the upper end thereof, a wick carrier comprising a plate portion having an annular channel thereabout for the reception of a wick, said plate portion being secured centrally to the top of said stem to be raised and lowered thereby, a liquid fuel receptacle, a flexible tubular fluid conductor leading from the lower part of the receptacle to the lower part of said wick channel, and means

facilitating the raising and lowering of the stem and wick carrying channel comprising a tubular sheath having one end secured vertically to said skirt in alignment with said stem and having its other end secured to and opening through said top, a flexible wire extending throughout the length of said sheath and having one end secured in the lower end of the stem, and an actuator button secured to the other end of the wire at the said other end of the sheath and disposed above said top to facilitate actuation of the wire through the sheath.

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