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CONTROLLING UNIT FOR OIL BURNERS

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*Fig. 1.*

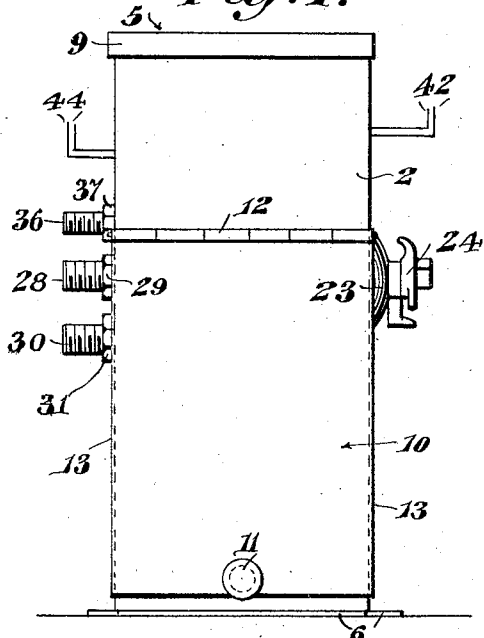


*Fig. 2.*

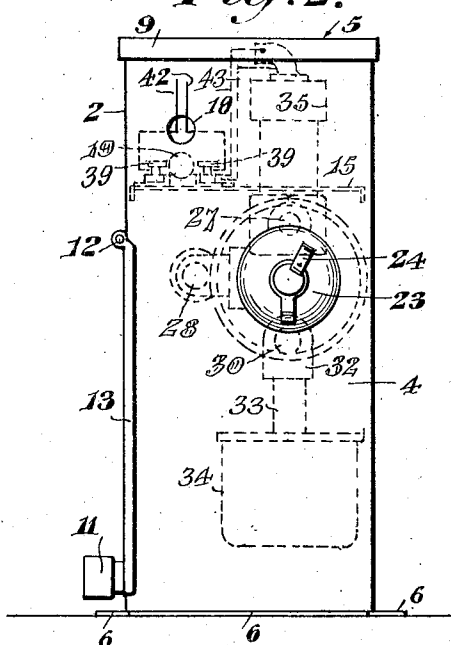


*Fig. 3.*

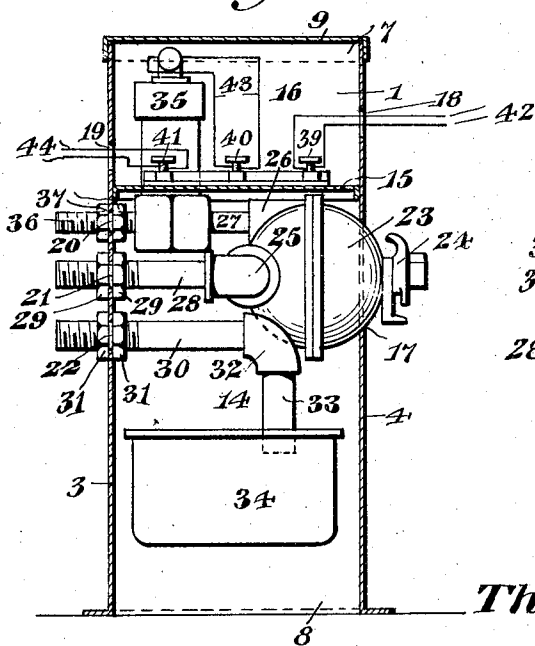
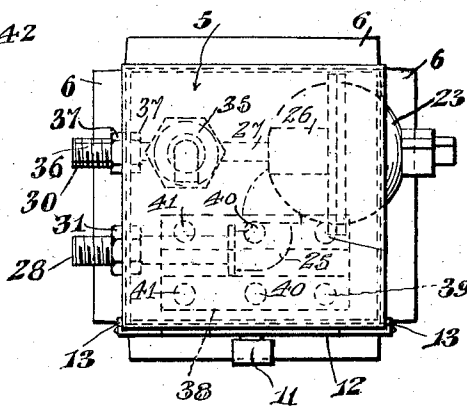


*Fig. 4.*



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## UNITED STATES PATENT OFFICE.

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## CONTROLLING UNIT FOR OIL BURNERS.

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This invention relates to a controlling unit for motor driven oil burners more particularly to a combined valvular, overflow collecting and terminal block unit for use in connection with oil burner installations, and has for its object to provide, in a manner as hereinafter set forth, a unit of the character referred to, for simplifying oil burner installations, and further so constructed and arranged that the overflow collector, electrically operated controlling valve, manually operated regulating valve and electrical connections are completed in one unit without danger of wrong electrical feed or job connections whereby, when the unit is employed the installation of an oil burner is expeditiously had.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a controlling unit for oil burners, which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, quickly installed with respect to a burner, that is to say with respect to the electrical connections, oil and overflow lines, including an enclosing casing having means to permit of convenient access to the elements arranged therein, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a front elevation of a controlling unit in accordance with this invention.

Figure 2 is an elevation looking towards one side thereof.

Figure 3 is a vertical sectional view of the controlling unit.

Figure 4 is a top plan view thereof.

Referring to the drawings in detail a controlling unit, in accordance with this invention, comprising a casing or housing including a rear wall 1, a front wall 2, and an inner and an outer side wall 3, 4 respectively. The casing or housing which is referred to generally by the reference character 5 in-

cludes an open top and open bottom body portion which is provided by the walls 1, 2, 3 and 4. The walls of the body portion at their lower ends are formed with right angularly disposed supporting flanges 6 and any suitable means can be associated with the flanges 6 for fixedly securing the body portion in an upright position. The open top of the body portion of the casing 5 is indicated at 7 and the open bottom thereof at 8. The open top 7 of the body portion is closed by a removable flanged lid or cover 9. The front wall 2 of the body portion is constructed with a lower hinged section 10 provided at its lower end with a knob 11 to facilitate the opening movement thereof. The hinge for the section 10 is indicated at 12 and said section is set up with inturned flanges 13 to overlap the side wall of the housing. The section 10 provides a door or closure for the casing 5 whereby access can be had to the chamber 14 which is provided in the casing 5 by a partition member 15 arranged below the top of the body portion. That part of the body portion above the partition 15 provides a chamber 16 which is normally closed by the lid 9 and the latter when removed from the body portion permits of access being had to the chamber 16. The chamber 14 is of greater height than the chamber 16.

The side wall 4 in proximity to the partition 15 is formed with an opening 17 having the wall thereof extending upon an arc. The side wall 4 above the partition 15 is formed with an opening 18 of materially less size than the opening 17. The side wall 3 above the partition 15 is formed with an opening 19 and below the partition 15 with a series of spaced offset openings 20, 21 and 22. The purpose of the openings formed in the side walls 3 and 4 will be presently referred to.

Arranged within the chamber 14, at the upper portion thereof, and extending through and bearing against the edge of the opening 17 is the globular casing of a manually adjusted regulating valve 23. The means for manually adjusting the regulating valve 23 is arranged exteriorly of the casing 5 and indicated at 24. The regulating valve 23, at one side is provided with an inlet nipple or connection indicated at 25 and the top of the regulating valve 23 is provided with an outlet 26 having a discharge nipple 27 connected therewith. The regulating valve 23 is secured in any suitable manner within

the chamber 14. Extending through the opening 21 and connected to the inlet nipple or connection 25 is a pipe connection 28 which leads from the oil tank not shown. Clamping nuts 29 engage with the pipe connection 28 and abut against the inner and outer faces of the wall 3. The pipe connection 28 in connection with that part of the casing of the valve 23 which is mounted in the opening 17 also act as supporting means for the said valve 23.

Extending through the opening 22 is a pipe connection 30 which leads from the overflow pipe for the burner, said pipe and burner are not shown, and threadably engaging with the pipe connection 30 is a pair of clamping nuts 31 which secure the pipe connection 7 to the wall 3 and said nuts 31 engage the outer and inner faces of said wall 3. The inner end of the pipe connection 30 is formed with a depending coupling 32, having a discharge nipple 33 depending therefrom and which opens into a collector 34 which is suitably secured or suspended within the chamber 14.

Extending through the partition 15, as well as being suitably secured therewith is a controlling valve of the electrical solenoid type and which is indicated at 35. The major portion of the valve 35 is arranged within the chamber 16 and has one side at its lower end connected to and communicating with the discharge nipple 27 and its other side at its lower end connected to and communicating with a pipe branch 36 which is attached to and opens into the feed line leading to the burner. The feed line and the burner is not shown. The nipple 27 and pipe 36 form a connection between the valve 23 and the feed line and is intersected by the valve 35. Clamping nuts 37 threadably engage with the pipe branch 36 for securing it to the wall 3 and said nuts abut against the inner and outer faces of said wall.

Mounted on, as well as being suitably connected with the partition 15, is a terminal block 38, provided with pairs of binding posts. One pair is indicated at 39, the other pair at 40 and the other pair at 41, see dotted line showing in Figure 4. The main electrical leads are indicated at 42 and are connected to the binding posts 39. The circuit connections for the solenoid valve 35 are indicated at 43 and are connected to the binding posts 40. The circuit connections for the motor of a burner, said motor and burner not shown, the burner being of the motor driven type, are indicated at 44 and are connected to the binding posts 41. The main leads 42 extend through the opening 18 and the circuit connections 44 for the motor extend through the opening 19.

The pipe connection 28 is arranged to one side of the pipe branch 36 and the pipe connection 30 is arranged in substantial alignment

with respect to the nipple 27 and pipe connection 28. See dotted line showing in Figure 2.

It is thought the many advantages of a controlling unit, in accordance with this invention, can be readily understood, particularly in view of the fact that it materially simplifies oil burner installations, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:

1. A controlling unit for the purpose set forth comprising an electrically operated oil feed controlling valve, a terminal block, a manually operated oil supply regulating valve arranged in proximity to said block, positioned below, spaced from and rearwardly of the controlling valve, an oil supply connection opening into the inner side of said regulating valve, an oil feed line connection extended from said regulating valve at the top thereof, intersected by said controlling valve and positioned above said supply connection, and a housing common to said valves and having one side common to and providing means for supporting said pipe connections.

2. A controlling unit for motor driven oil burners comprising an electrically operated oil feed controlling valve, a terminal block common to said valve and to the motor of the burner, an oil supply regulating valve spaced from, positioned rearwardly of and below the controlling valve, an overflow collector, an oil supply line connection opening into the inner side of said regulating valve, an oil feed line connection extended from the inner side of said regulating valve at the top thereof, intersected by said controlling valve and positioned above said supply connection, an overflow line connection positioned below said supply connection and opening into said collector, and a housing common to said valves, block and collector and having one of its walls common to and providing means for supporting said connections.

3. A controlling unit for oil burners of the motor driven type comprising a housing, an electrically operated oil feed controlling valve arranged at the upper portion thereof, a manually adjusted oil supply controlling valve arranged within the housing below and to one side of the controlling valve and projecting from one side wall of the housing, an overflow collector positioned within the housing below said regulating valve, an oil supply line connection opening into the inner side of said regulating valve, an oil feed line connection extended from the inner side of said regulating valve at the top thereof

of intersected by said controlling valve and positioned above said supply connection, an overflow line connection opening into said collector, and said connections projecting from said housing and clamped to the other side wall thereof.

4. A controlling unit for oil burners of the motor driven type comprising an electrically operated oil feed controlling valve, a terminal block common to said valve and to the motor of a burner, a manually adjusted oil supply regulating valve positioned below and to one side of the controlling valve, an oil supply line connection opening into the inner side of said regulating valve, an oil feed line connection extended from the inner side of said regulating valve and intersected by said controlling valve, and a housing common to said valves and block and having one side wall thereof common to and providing means for supporting said connections, said regulating valve projecting from the wall of said housing.

5. A controlling unit for oil burners of the motor driven type comprising a housing provided at its top and one side with means whereby access can be had thereto, an electrically operated oil feed controlling valve positioned within said housing, a terminal block within the housing and common to said valve and to the motor of the burner, a manually operated oil supply regulating valve positioned within and extended from the housing, said regulating valve positioned below said controlling valve, an overflow collector positioned below said regulating valve within the housing, an oil supply line connection opening into said regulating valve, an oil feed line connection leading from said regulating valve and intersected by said controlling valve, an overflow line connection opening into said collector, said connections projecting from said housing, and means for clamping the connections to the housing.

6. A controlling unit for oil burners of the motor driven type comprising a housing formed with a partition to provide an upper and a lower chamber, an electrically oper-

ated oil feed controlling valve arranged in the upper chamber and extended into the lower chamber, a terminal block mounted on said partition and common to said valve and to the motor of the burner, a manually adjusted oil supply regulating valve positioned in the lower chamber and extended through one of the walls thereof, an overflow collector positioned within the lower chamber below said regulating valve, an oil supply line connection opening into said regulating valve, an oil feed line connection leading from said regulating valve and intersected by said controlling valve, an overflow pipe line connection opening into said collector, said line connections projecting from said housing, and means for clamping said line connections to the housing.

7. A controlling unit for the purpose set forth comprising a housing, an electrically operated oil feed controlling valve arranged in the upper portion thereof, a terminal block within the housing, a manually operated oil supply regulating valve positioned within said housing in proximity to said block and below and to one side of said controlling valve and having its operating means extended from the housing, an oil supply connection extending through one side wall of and into the housing and opening into one side of said regulating valve, an oil feed line connection extending from the said side of said regulating valve at the top thereof, projecting from the housing at the said side wall thereof and intersected by said controlling valve.

8. A controlling unit for the purpose set forth constructed in accordance with claim 7, an overflow collector positioned within the housing below and independent of the supply valve, and an overflow pipe extending into the housing through the said side wall of the latter and discharging into said collector, said housing provided with a normally closed door whereby access can be had to said valves, connections and collector.

In testimony whereof, I affix my signature hereto.

THOMAS B. ALLARDICE.