

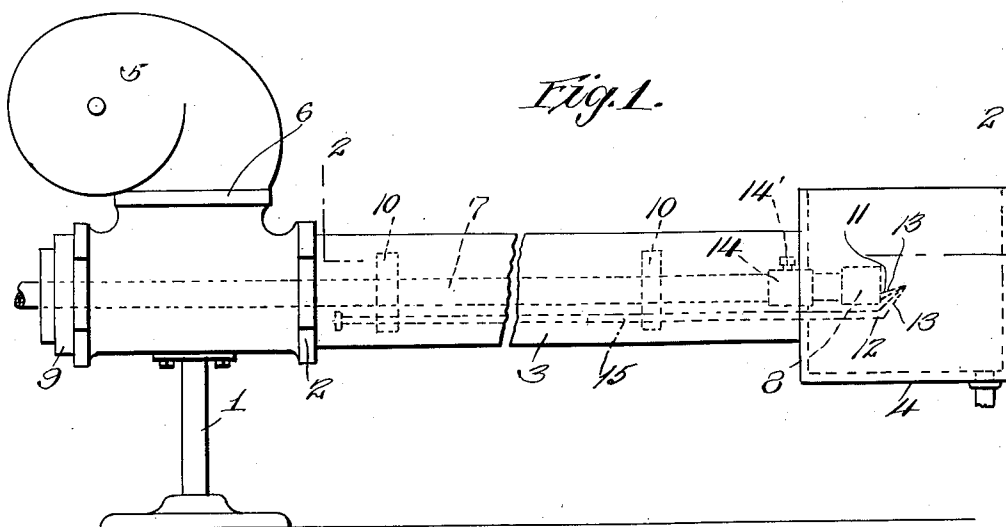
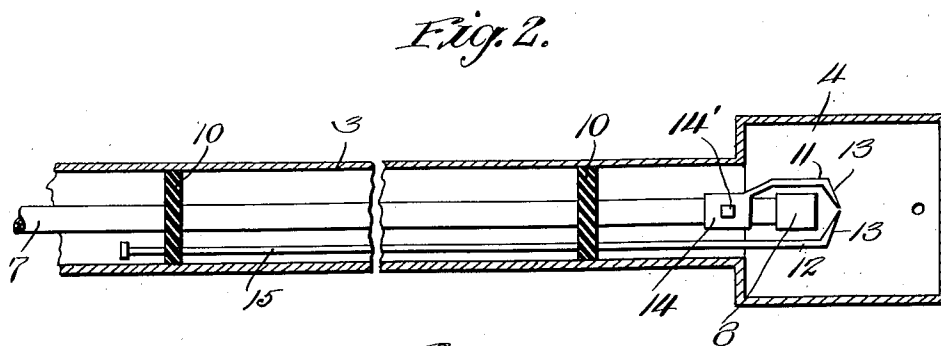
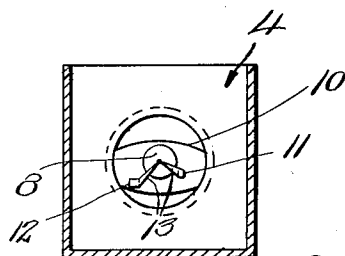
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1,609,956

L. MAY

LIQUID FUEL BURNER

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LIQUID-FUEL BURNER.

Application filed May 20, 1924. Serial No. 714,631.

This invention relates to improvements in liquid fuel burners wherein kerosene and similar fuels are ignited and cause to burn non-explosively within a confined chamber.

5 The object of this invention is to provide a burner having means for electrically igniting the fuel as it flows therefrom.

A further object of the invention is to provide a plurality of elements adapted to cause a spark for igniting the fuel as it flows from the burner, and said elements being so arranged that their points will always be clean and the accumulation of oil, and the like thereon will be eliminated.

15 These results are attained in the manner set forth in the following specification and illustrated in the accompanying drawings, in which:

20 Figure 1 is a side elevation of a burner having applied thereto the improved means for igniting the fuel as it flows therefrom.

Figure 2 is a horizontal sectional view taken on the line 2—2 of Figure 1, and

25 Figure 3 is an end view of a burner showing the position and structure of the sparking elements.

Referring to the accompanying drawings in detail, the corresponding parts throughout the several views being denoted by like reference characters, the numeral 1 indicates a vertical support having secured to its upper end a T connection 2, one leg of which has connected thereto a horizontally disposed pipe 3 through which air is forced to a combustion chamber 4 carried at the free end of the pipe, the air being supplied by a suitable fan 5 connected to the leg 6 of the connection 2.

40 The connection 2 and the air pipe 3 have positioned concentrically therein a fuel pipe 7, the free end of which is provided with a suitable burner or jet 8 extending within the combustion chamber 4.

45 The pipe 7 is maintained in fixed relation with respect to the air pipe 3 by a plug 9 entering the open leg of the connection 2 and by a plurality of transverse arms 10 positioned at intervals within the air pipe 3, the length of the arms being slightly less or equal to the inside diameter of the air pipe 3. These arms 10 are formed of a suitable insulating material, the purpose of which will be fully apparent as the description proceeds.

55 From the hereinbefore description, it will be apparent that by reason of the fuel en-

tering the fuel pipe 7 under pressure and being conveyed to the jet 8 positioned within the combustion chamber 4 where it is ejected and caused to mingle with the body of air flowing through the air pipe 3, an ignitable mixture will be delivered to the combustion chamber.

This invention has reference, particularly, to the means for igniting this mixture, and by reference to the drawings, it will be noted that the same is composed of a pair of sparking points 11 and 12 which are positioned adjacent the jet 8 in such a manner that the mixture will be ignited as it flows therefrom.

Each of the points 11 and 12 is provided with a tapered body portion 13, that of the former being formed integral with a sleeve 14 slidable upon the pipe 7 and secured thereto by a set screw 14'. The other point 12 is formed upon the end of a rod 15 which is supported within the air pipe 3 by the arms 10. It is necessary that the rod 15 be of such a character as to be a good conductor of electricity.

Referring to Figure 3 of the drawings, it will be noted that the rod 15 is preferably square in cross-section and that the position it assumes in the arms 10 is below the horizontal plane of that occupied by the fuel pipe 7. The body portion of the point 11 is likewise below the horizontal plane of the pipe 7, but in both it will be noted that the points 11 and 12 assume a horizontal plane common to the jet 8, which is generally concentric with the pipe 7.

The purpose of such a structure being to prevent the oil as it flows from the jet 8 and strikes the points 11 and 12 from collecting upon the points, and in the structure just described it will be apparent that by reason of the fact the body portion of each point is inclined downward from the gap any oil that does fall upon the points will be conducted away from the points.

In order to cause a spark to occur at the points 11 and 12, the point 11 is grounded through the pipe 7 to the ground connection of a suitable spark producing unit, not shown, while the point 12 is a part of the rod 15, which is insulated from the pipe 7, the end portion of which has connected thereto the positive side of such a unit.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described inven-

tion will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In a liquid fuel burning mechanism, an air pipe having connected thereto a combustion chamber, a fuel pipe extending in said pipe and having a jet in said chamber, arms for supporting said fuel pipe within the air pipe and insulating the same therefrom, sparking elements for igniting the flow from said jet, one of said elements being connected to said fuel pipe, the other element

positioned parallel to said fuel pipe and supported with respect thereto by said arms, and both elements being positioned below the horizontal plane of said jet and having their points converging upwardly and falling in said plane.

2. In a liquid fuel burning mechanism, an air pipe, a burner pipe in said air pipe, a jet on the extremity of said pipe, sparking elements for igniting said mixture, one of said elements being mounted upon said burner pipe, the other of said elements being mounted in said air pipe and insulated from said burner pipe, and the points of said elements extending upwardly and inwardly to a common horizontal plane.

In testimony whereof I affix my signature.

LAWRENCE MAY.