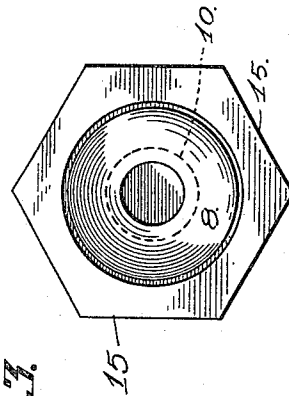
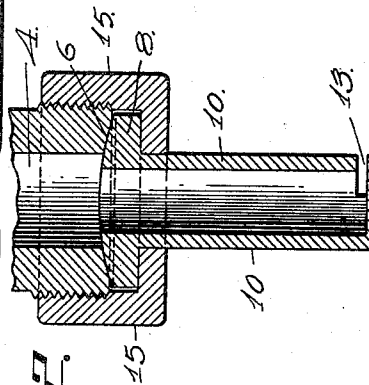


1,168,580.



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His Atty.

UNITED STATES PATENT OFFICE.

WALTER M. TROLL, OF BALTIMORE, MARYLAND.

OIL-BURNER TIP.

1,168,580.

Specification of Letters Patent.

Patented Jan. 18, 1916.

Application filed October 8, 1915. Serial No. 55,348.

To all whom it may concern:

Be it known that I, WALTER M. TROLL, a citizen of the United States, and a resident of the city of Baltimore and State of Maryland, have invented a new and useful Improvement in Oil-Burner Tips, of which the following is a specification.

My invention relates to oil burner tips wherein a double channeled body portion having opposed outlets provided with concave seats operates in conjunction with alined abutting tubular burner tips having convex ends arranged to be rigidly secured within said seats; and the objects of my invention are first, to provide an oil burner tip adapted to prevent the mixture of oil and steam preceding their emergence from the tips; second, to provide an oil burner tip having interchangeable parts which may be easily and readily removed or interchanged; third, to provide means for preventing the steam and oil apertures from being distorted by expansion of the parts due to heat; fourth, to provide an improved oil burner having leak proof joints between the tips and body; fifth, to provide an improved oil burner having the above features and one which may be simple and cheap of construction and operation.

I accomplish these several features by means of the preferred form of the invention disclosed in the drawings forming a part of the present specification wherein like characters of reference are used to designate similar parts throughout the said specification and drawings, and in which—

Figure 1 is a longitudinal sectional view of a burner disclosing the manner in which the tips are secured thereto. Fig. 2 is an enlarged broken vertical sectional view of one tip and a portion of the burner, and Fig. 3 is a plan view, on an enlarged scale, of one of the tips and the nut which secures the same to the body of the burner.

The present state of the art discloses drooling burners similar in operation and construction to the present invention except that such burners are provided with a one piece tip having two apertures therein, for the discharge of oil and steam respectively, and a partition within the tip and between the said apertures. In order to avoid leakage, the length of the tip must be exactly equal to the distance between the seats of the opposed outlets. When this tip is in position and the burner in operation the ex-

pansion due to the heat has a tendency to separate the ends of the unit tip from the seats, thereby causing a leakage and permitting the mixture of oil and steam in an improper manner before leaving the burner tip. A further disadvantage of the present type is that the integral tip must be replaced in its entirety when the steam apertures wear out and while the oil aperture is still in good condition and still serviceable, thereby causing an expensive waste of parts.

I propose to avoid the above disadvantages and provide an improved simple and cheap construction wherein the oil and steam tips may be adjusted or renewed independently of each other and may be easily and readily removed for cleansing purposes by means of the device which may be described as follows:

Referring to the drawings, the numeral 1 is used to designate a body portion having double channels 2 and 3 therein for the passage of oil and steam respectively. The channels 2 and 3 are provided with opposed outlets 4 and 5 respectively having arcuate concave seats 6 and 7, the radius of said arcuate portions being equal to approximately one-half of the distance between the said seats, viz; the arcuate concave seats 6 and 7 conform to opposite portions of a sphere whose center coincides with a point midway between said seats.

Seated within the arcuate concave seats 6 and 7 are the convex ends 8 and 9 of the hollow or tubular tips 10 and 11 respectively. The tips 10 and 11 are alined and have closed abutting ends with suitable apertures 13 and 14 for the discharge of oil and steam respectively.

The combined length of the tips 10 and 11 is equal to the distance between the seats 6 and 7 respectively, and the surfaces of the arcuate convex ends 8 and 9, when the said tips 10 and 11 are abutting, conform to opposite portions of a sphere whose center coincides with a point midway between the arcuate seats 6 and 7 of the opposed oil and steam outlets, so that the said tips may be rotated on said center, into and out of engagement with said seats as indicated in dotted lines in Fig. 1 of the drawings.

The tips 10 and 11 are rigidly secured to their respective seats by means of union couplings 15 and 16 which are adapted to engage the flanged convex ends 8 and 9 thereof and the bifurcated ends of the body

portion 1 containing the opposed outlets 4 and 5.

In order to remove the tips 10 and 11 from their respective seats the union couplings 15 and 16 are first disengaged from the body portion 1 and the alined abutting tips are partially rotated on a point coincident with their junction, as indicated in dotted lines in Fig. 1 of the drawings, until the convex flanged ends 8 and 9 have been removed from their respective arcuate concave seats 6 and 7 when the said tips may be easily removed or interchanged.

It is obvious from the above that any expansion due to the heat which might tend to separate the bifurcated ends of the body portion 1 and the seats or outlets therein will merely cause a slight separation of the adjacent ends of the burner tips 10 and 11 without straining any joints or apertures.

It is also evident that I have provided an improved burner tip wherein the said tips may be easily and readily removed and renewed independently of each other as well as an efficient and cheap construction.

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

1. An oil burner tip comprising a double channeled body portion having opposed outlets to the channels therein; a pair of tubular burner tips each having a suitable aperture therein for the discharge of oil and steam respectively, seated within the opposed outlets; and means adapted to secure each tip to its respective outlet.

2. An oil burner tip comprising a double channeled body portion having opposed outlets to the channel therein, each outlet being provided with a concave seat; a pair of tubular burner tips each having a suitable aperture therein for the discharge of oil and steam respectively and convex ends adapted to engage the concave seats of the opposed outlets; and means adapted to retain each tip within its respective seat.

3. An oil burner tip comprising a double channeled body portion having opposed outlets to the channels therein, each outlet be-

ing provided with a concave seat; a pair of alined burner tips arranged between the outlets, each tip having one end thereof closed, and a suitable aperture near said closed end for the discharge of steam and oil respectively, the other end of each tip being convex and adapted to seat in the concave seat of its respective outlet; and suitable means adapted to retain each tip within its respective seat.

4. An oil burner comprising a double channeled body portion having opposed outlets to the channels therein, each outlet having an arcuate concave seat, the radius of the arcuate portion of each seat being equal to one-half the distance between said seats; a pair of alined hollow burner tips arranged between the seats, said tips having closed abutting ends and suitable apertures near said closed ends for the discharge of steam and oil respectively, the opposite ends of said tips being convex and adapted to seat within the concave seats of the opposed outlets, the combined lengths of said tips being approximately equal to the distance between the arcuate seats of the opposed outlets; and means adapted to retain each tip within its respective seat.

5. An oil burner comprising a double channeled body portion having opposed outlets to the channels therein, each opposed outlet being provided with an arcuate concave seat, the radius of each arcuate seat being equal to one-half the distance between said seats; a pair of alined hollow burner tips arranged between the seats and having closed abutting ends and an aperture in each tip near said closed ends for the discharge of steam and oil respectively, the opposite ends of said tips being provided with convex flanges adapted to seat within the opposed outlets, the combined length of said tips being equal to the distance between the seats; and means adapted to engage the convex flanges of the tips and retain the same onto the concave seats.

In witness whereof I hereunto set my signature.

WALTER M. TROLL.