

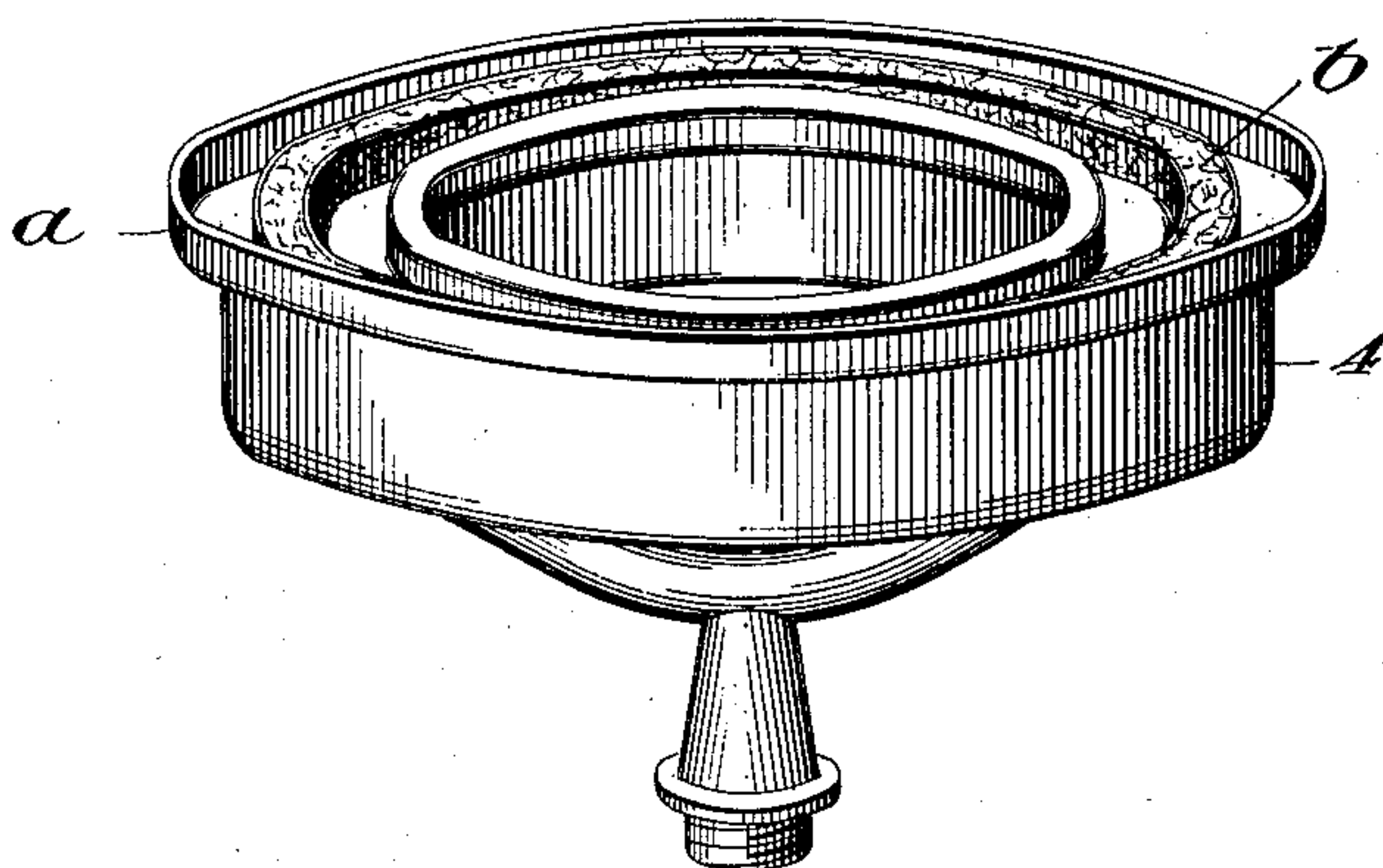
No. 832,305.

PATENTED OCT. 2, 1906.

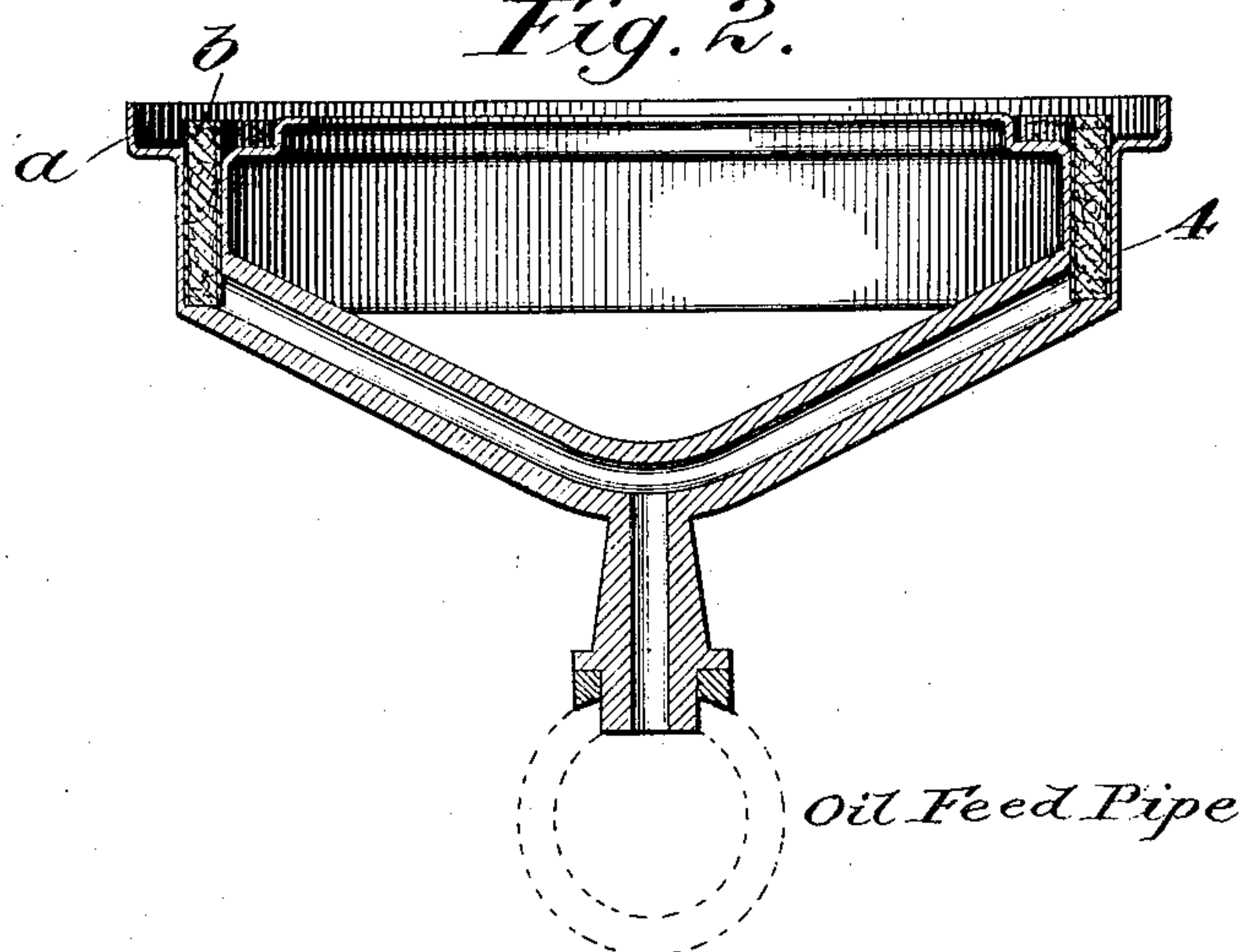
G. W. FERDON.  
HYDROCARBON BURNER WICK.  
APPLICATION FILED FEB. 1, 1905.

2 SHEETS—SHEET 1.

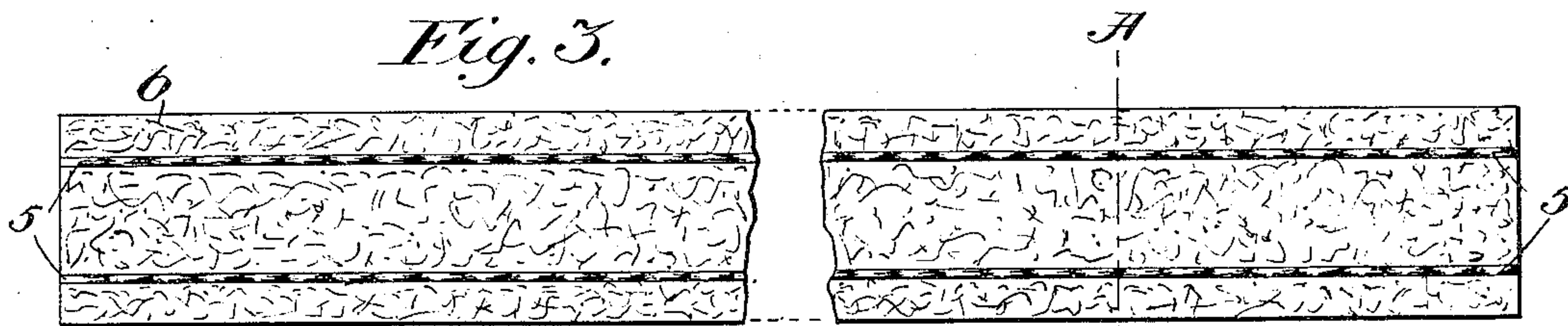
*Fig. 1.*



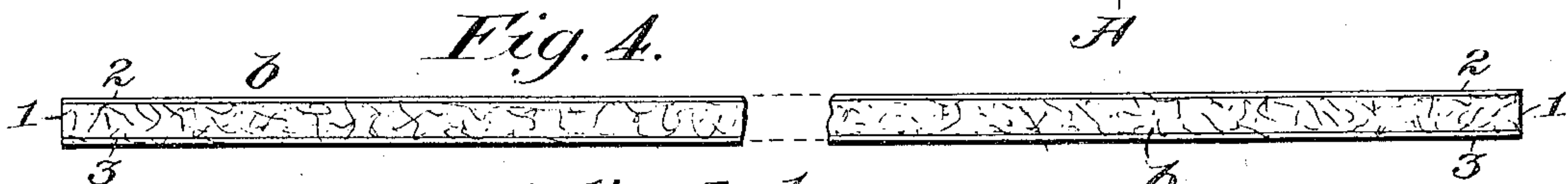
*Fig. 2.*



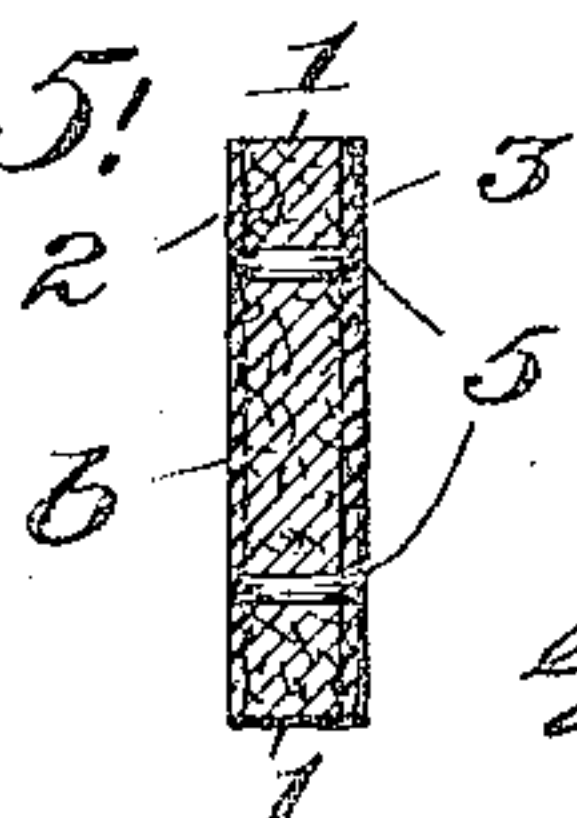
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses:

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E. Thos. Loftis

Inventor:

Geo. W. Ferdon  
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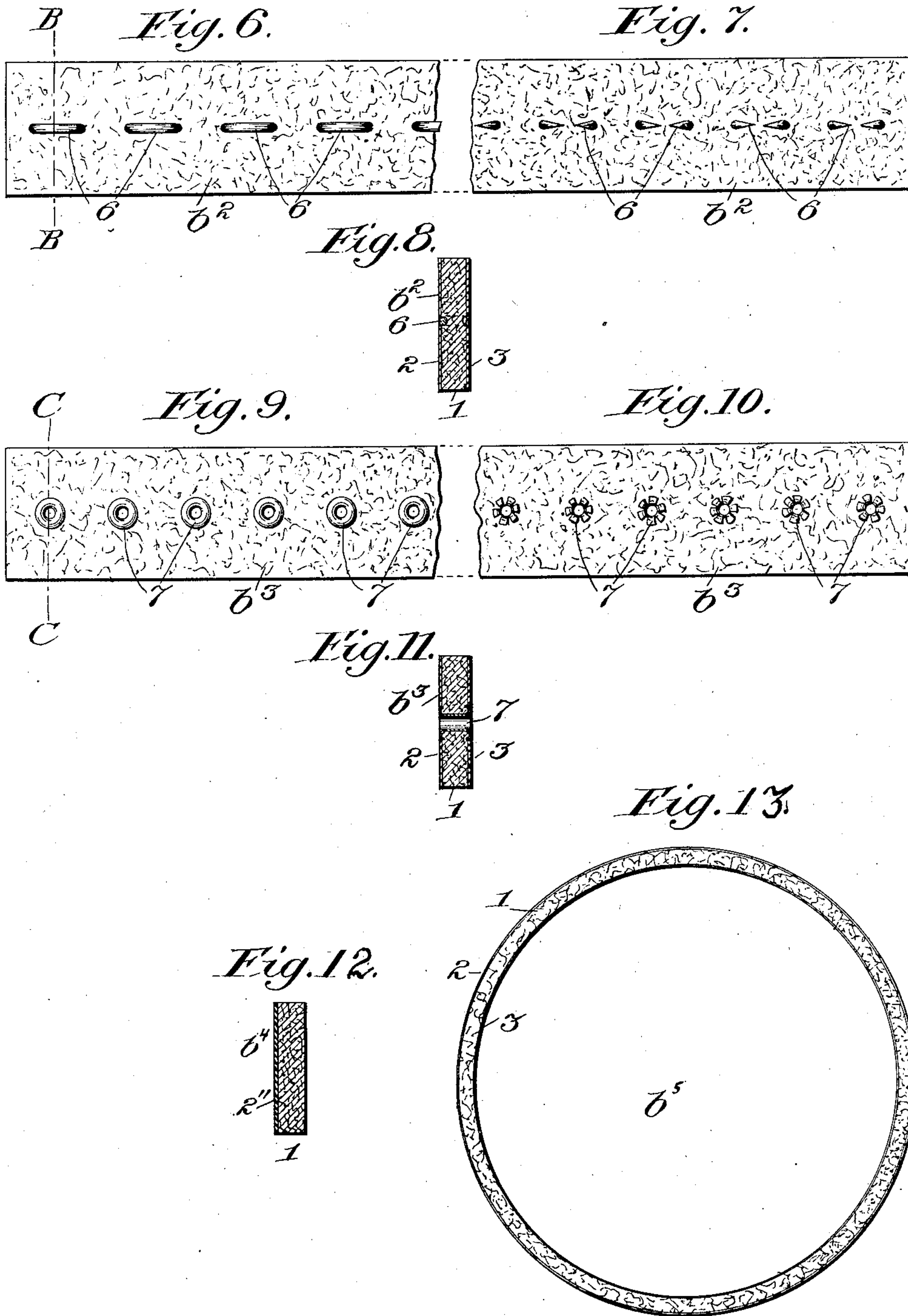
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2 SHEETS—SHEET 2.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

GUY W. FERDON, OF NEW YORK, N. Y., ASSIGNOR TO SILVER & COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

## HYDROCARBON-BURNER WICK.

No. 832,305.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed February 1, 1905. Serial No. 248,691.

*To all whom it may concern:*

Be it known that I, GUY W. FERDON, a citizen of the United States of America, and a resident of the borough of Brooklyn, New York city, in the State of New York, have invented a new and useful Improvement in Hydrocarbon-Burner Wicks, of which the following is a specification.

This invention relates to incombustible wicks for hydrocarbon-burners, and particularly to those wicks intended for use in the annular burner-troughs of blue-flame oil-stoves. Heretofore such wicks have most commonly been made with a thin body or core of asbestos compressed between two pieces of perforated sheet metal or wiregauze, and the whole has been corrugated to render it self-supporting within a relatively wide burner-trough.

The present invention consists in an incombustible wick of improved construction and in certain novel combinations of parts embodied therein, as hereinafter set forth and claimed.

The objects of this invention are to render the wick substantially and sufficiently rigid so that it can be easily inserted edgewise into the burner-trough and readily removed therefrom; to protect the same against fraying at its sides and edges; to adapt the capillary body or core to be made of looser or more absorbent material than has heretofore been used in such wicks; to prevent the formation or accumulation of vapor within the burner-trough; to dispense with metallic side pieces, which tend to cause such vaporization and to a certain extent repel the oil from the wick and disturb its capillary action; to enable the burner-trough to be completely filled with absorbent non-heat-conducting material, and thus to keep the lower part of the burner-trough comparatively cool, and to prevent the sudden flaring and unevenness of the flame due to the presence of vapor.

Two sheets of drawings accompany this specification as part thereof.

Figure 1 of the drawings is a perspective view of a typical burner for a blue-flame oil-stove provided with an incombustible wick completely filling the trough and otherwise constructed according to the present invention. Fig. 2 represents a vertical transverse section through said burner, trough, and wick.

Figs. 3 and 4 represent side and edge views of one species of the improved wick. Fig. 5 represents a cross-section on the line A, Fig. 3. Figs. 6 and 7 show the respective sides of another species of the improved wick. Fig. 8 represents a cross-section on the line B, Fig. 6. Figs. 9 and 10 show the respective sides of another species of the improved wick. Fig. 11 represents a cross-section on the line C, Fig. 9. Fig. 12 represents a cross-section of another species of the improved wick; and Fig. 13 represents an edge view of an annular wick cut from a seamless tube, as hereinafter described.

Like reference characters refer to like parts in all the figures.

The hydrocarbon-burner (represented at *a* in Figs. 1 and 2) may be of any known or improved construction that is not inconsistent with the present invention, which relates exclusively to the construction of the wick, several species of which are shown at *b*, *b*<sup>2</sup>, *b*<sup>3</sup>, *b*<sup>4</sup>, and *b*<sup>5</sup>, respectively. In each of the species the improved wick comprises a capillary or absorbent body or core 1 and one or a pair of stiffening and supporting layers or side pieces 2 and 3 or 2'', the material of the whole being asbestos or a substantially similar incombustible and non-heat-conducting material and the stiffening and supporting parts being in the form of side pieces in close contact with one or both sides of the body or core 1, with the material thereof in a less absorbent, more compact, and less flexible state as compared with that of the body or core. The improved wick *b* or *b*<sup>2</sup> or *b*<sup>3</sup> or *b*<sup>4</sup> or *b*<sup>5</sup> in all the species is also specially designed and adapted for use within an annular burner-trough 4 in the burner *a*, as illustrated by Figs. 1 and 2, the wick as a whole having uniform upper and lower edges parallel with each other and being adapted to fill the relatively shallow trough and to project to a sufficient extent above the same and to constitute for such burners a wick having a suitable body or core 1 of quickly-absorbent material open to absorb oil at the bottom and to present the oil to the flame at the top and by its said stiffening and supporting layer or layers 2 and 3 or 2'' rendered substantially and sufficiently rigid so as to facilitate inserting it edgewise in the burner-trough 4 or removing it therefrom, and also effectively protected against fraying at its sides and edges without the addition of any part



tending to vaporize the oil within the trough or within the wick. For such purposes the incombustible non-heat-conducting material in the body or core 1 is in an absorbent state and relatively loose as compared with that of the stiffening and supporting layer or layers 2 and 3 or 2". The body or core 1 may be made of looser and more absorbent material than when perforated metal or woven wire is used in place of such non-metallic side pieces, because it is much easier to unite the body or core with side pieces of the same material. Even when the body or core 1 and a pair of said pieces 2 and 3 are fastened in close contact with each other there is ample provision for capillary action between the side pieces, so that the oil will climb up to the top of the wick, while vapor, which is incapable of capillary attraction, will neither form nor travel therein. The perforated metal or woven wire which has heretofore been used in such wicks causes vaporization within the wick and to a certain extent repels the oil from the wick and disturbs the capillary action. By using non-heat-conducting side pieces or layers vaporization within the wick is entirely prevented. Such non-metallic side pieces insulate the capillary body or core from the metallic walls of the burner-trough, and even if such walls become sufficiently heated to vaporize oil the capillary action of the body or core 1 will not be disturbed by such heat. By completely filling the burner-trough with the wick its lower part is kept comparatively cool, and the formation or accumulation of vapor therein is thus prevented, which also prevents the sudden flaring or unevenness of the flame due to the presence of vapor in such burner-troughs.

In the species represented by Figs. 1 to 5, inclusive, the strip-shaped absorbent body or core 1 of the wick *b* is of suitable asbestos fiber in a relatively loose and absorbent state and is permanently united with a pair of stiffening and supporting side pieces 2 and 3 of like form and dimensions and of the same material in a more compact state by longitudinal wire stitching 5, parallel with the top of the wick, extending through the wick from side to side, as represented in Fig. 5. Annealed iron or brass wire may be used for the stitching 5.

In the species represented by Figs. 6, 7, and 8 the absorbent body or core 1 and a pair of stiffening and supporting side pieces 2 and 3, all of incombustible non-heat-conducting material, are or may be identical with those of the first species, respectively, but are united with each other in a line parallel with the top of the wick by a sufficient number of metallic staples 6, extending through the wick *b* from side to side and suitably clenched, as shown in the figures.

In the species represented by Figs. 9, 10, and 11 the absorbent body or core 1 of the wick *b*<sup>3</sup> and a pair of stiffening and support-

ing side pieces 2 and 3 are or may be of the same material as compared with the corresponding parts in the first and second species, but are united with each other in a line parallel with the top of the wick by a sufficient number of metallic eyelets 7, the shanks of which extend through from side to side, as shown in Fig. 11.

In the species represented by Fig. 12 the absorbent body or core 1 of the wick *b*<sup>4</sup> is or may be similar or substantially similar to that of the first species, but is provided with only one non-heat-conducting side piece or stiffening and supporting layer 2" of the same description as the side pieces above set forth.

In the species represented by Fig. 13 the improved wick *b*<sup>5</sup> instead of being made in the form of an originally flat strip, as in the other species, is endless and adapted to be cut from a seamless tube; otherwise it may be of any of the descriptions above set forth with reference to the other species of the improved wick.

Other like modifications will suggest themselves to those skilled in the art. For example, in the first species there may be only one or more than two lines of the stitching 5, and other known or improved incombustible and non-heat-conducting material of substantially the same characteristics may be used in place of asbestos.

Having thus described said improvement, I claim as my invention and desire to patent under this specification—

1. A wick, for hydrocarbon-burners, comprising an absorbent body of asbestos in a relatively loose state, and stiffening and supporting means of asbestos in a more compact state.

2. A wick, for hydrocarbon-burners, comprising a flexible body or core of asbestos in an absorbent state, and stiffening and supporting layers of asbestos in a less flexible state in close contact with both sides of said body.

3. A wick, for hydrocarbon-burners, comprising an absorbent strip of asbestos in a comparatively loose state, stiffening and supporting strips of the same material in a more compact state in close contact with both sides of the strip first named and means permanently uniting said strips with each other.

4. A wick, for hydrocarbon-burners, comprising an absorbent strip of asbestos in a comparatively loose state, a stiffening-strip of the same material in a more compact state, and means passing through said strips parallel with the top of the wick for uniting the same.

5. A wick, for hydrocarbon-burners, comprising an absorbent strip of asbestos in a comparatively loose state, stiffening and supporting strips of the same material in a more compact state in close contact with both



sides of the strip first named, and means passing through said strips parallel with the top of the wick for uniting the same.

5 6. A wick, for hydrocarbon-burners, comprising an absorbent strip of asbestos in a comparatively loose state, stiffening and supporting strips of the same material in a more compact state in close contact with both sides of the strip first named, and wire stitching passing through said strips in lines parallel with the top and bottom of the wick for uniting the several strips with each other.

10 7. In a hydrocarbon-burner, the combination of an annular burner-trough and a wick adapted to be inserted edgewise into such trough and to completely fill its bowl and composed of quickly absorbent incombustible material extending from top to bottom open to absorb oil at the bottom and open at top to supply the oil to the flame, stiffening and supporting strips of non-heat-conducting incombustible material in a more compact state, and means passing through said

strips in lines parallel with the top and bottom of the wick and serving to permanently unite the several strips with each other. 25

8. In a hydrocarbon-burner, the combination of an annular burner-trough, and a strip-shaped wick adapted to be inserted edgewise into such trough and to completely fill its bowl and composed of quickly absorbent non-heat-conducting incombustible material extending from top to bottom open to absorb oil at the bottom and open at top to supply the oil to the flame, and provided with stiffening and supporting strips of the same material in a more compact state, and means passing through said strips in lines parallel with the top and bottom of the wick and serving to permanently unite the several strips with each other, substantially as hereinbefore specified. 30 35 40

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Witnesses:

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