B. D. SANDERS.

Candle.

No. 15,821. Patented Sept. 30, 1856.

Fig. 1.

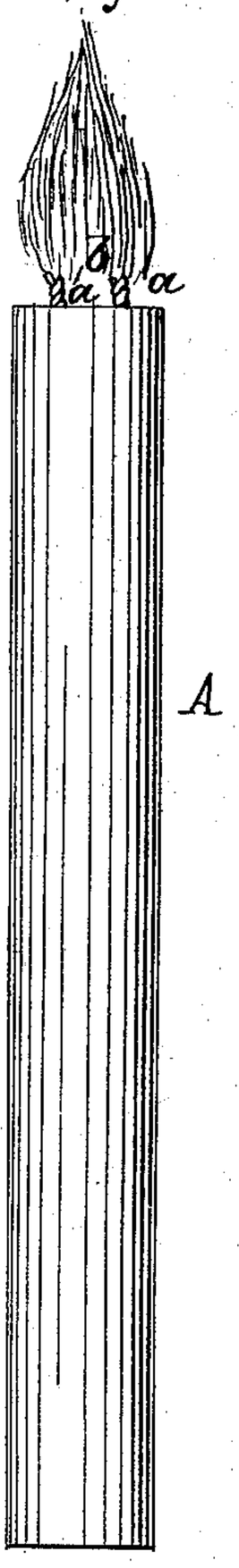


Fig. 2.

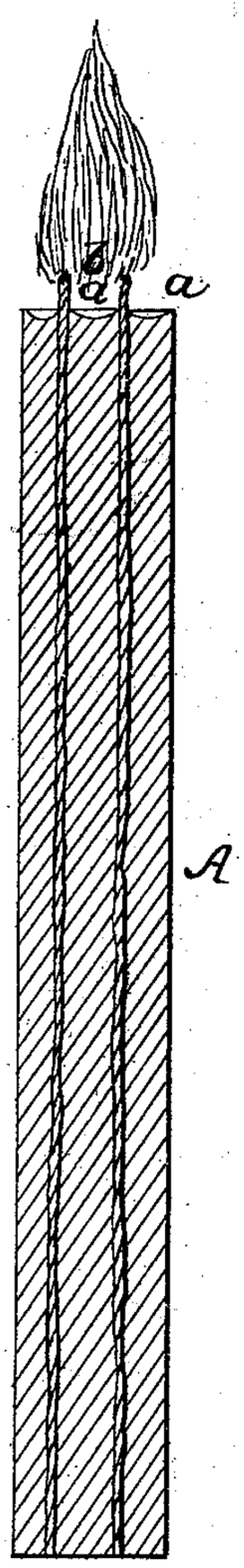
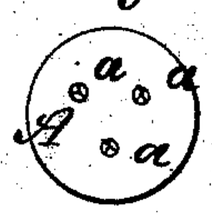


Fig. 3



UNITED STATES PATENT OFFICE.

BENJN. D. SANDERS, OF HOLLIDAYS COVE, VIRGINIA.

MANY-WICKED CANDLE.

Specification of Letters Patent No. 15,821, dated September 30, 1856.

To all whom it may concern:

Be it known that I, BENJAMIN D. SANDERS, of Hollidays Cove, in the county of Brooke and State of Virginia, have invented a new and useful Improvement in Candles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents an outside edge view of a two-wicked candle and Fig. 2 a longitudinal section thereof; and Fig. 3 a top view or plan of a different disposition of several wicks in a candle, which latter figure is in direct illustration of my improvement: the candle being represented by A in all the figures.

Candles it is well known have been variously constructed, and in merely providing a candle with a duplication of wicks there is nothing new. Where two or more wicks however have been used in the one candle the wicks have either been twisted the one around the other or have been arranged side by side with each other so that a straight line would intersect them as in Figs. 1 and 2 for a two, or three, wicked candle, as the case may be. This double arrangement of the wicks and blending of the two or more flames mainly into one (the wicks being arranged parallel to each other at a slight distance apart) is found to economize the consumption of tallow, or whatever the oleaginous material may be, as well as to improve the light of the candle, as compared with the ordinary solid one wicked candle; but these advantages are only partially attained by such description of candle and never sufficiently so to warrant their general adoption in this country.

My invention, as depicted in Fig. 3 has for its aim a great improvement over this description of candle.

The principle of the Argand lamp is too well known to need discussion here, and the same principle, namely of supplying air, to improve the combustion and so forth, to the interior as well as the exterior of the flame, by means of a hollow or tubular wick, has been applied to candles by Desormeaux, Hutchings, Gay Sussac and others, and, as it might naturally be expected from the application of such a principle, the improvement of the candle in point of illumination, for the amount of oleaginous material consumed, has been considerable. But the hollow or tubular wick is much better applicable to a lamp that a candle; it renders the process of candle making more intricate and expensive, and, in a candle, such hollow wick having no central support readily collapses and fills up at the top where burning, and thus chokes or closes the mouth or outlet of the tubular passage which was designed to freely supply the interior of the flame with oxygen by the admission of air; and further, the tallow penetrating or swealing down into the tubular wick not infrequently entirely closes it, thus wholly destroying its action upon what has been termed the "Argand principle." Such tubular wick candles also require a special construction of candlestick to burn them in so as to freely admit the air through them from below. My improvement has a similar object in view, namely, providing a circular or body flame—in distinction from a sheet one,—in the one candle, with a central air space or cavity which closed in on all sides and at top by the flame is freely open at bottom for the admission of air to the interior of the flame to aid the supply of air on the outside in keeping up the combustion and so improve the light as before referred to, and this I do in a most simple and effective manner by constructing the candle (mold or dip as may be) with three or more solid wicks arranged it may be termed angularly to each other that is so that a straight line will not intersect them and at such distances apart that the several flames in uniting leave a central air space or cavity between or up them for a certain distance covered all around and at top by the flame but open at bottom between the flame and top surface of the tallow for admission of air which entering this central cell, as it may be termed, becomes highly heated and has no exit but through the combined flame and in this manner forms a better supply of air, so far as the combustion and light of the candle are concerned, than the supply of air on the exterior of the flame does and than a tubular wick air passage could do.

Fig. 3 in the drawing exhibits such an arrangement of the wicks, three (*a a a*) being shown parallel to each other longitudinally but, as regards the cross area of the candle, arranged to occupy a position forming the figure of a triangle. The flames, it will be obvious, from the wicks thus arranged,

though uniting to form a common body flame (the wicks being at a suitable distance apart) will leave, for a certain distance up them from below, a central air space or cell widely open at the base but gradually tapering to a point upward, and in this way a supply air cavity is formed closed in on all sides and at top by the flame but open below, between the top surface of the tallow and lower part of the flame, so that the air entering the flame internally not only becomes highly heated but has no escape except through the flame as before referred to. Two, three or more wicks arranged in line, as in Figs. 1 and 2 would not accomplish this, the two flames from the wicks (*a a*) in said figures forming a sheet not body flame and pinched together or meeting near their base leaving but a small cavity (*b*) between them and this cavity open at two of its sides so that the effect is very inferior, and merely duplicating the wicks to stand in line would effect no difference; but by an angular arrangement of the wicks, as depicted in Fig. 3 I get all the advantages of the best hollow wick arrangement, producing a flame that encircles or covers in at sides and at top the central air passage, without any of the defects (as before specified) of such tubular wick arrangements as applied to candles and my improved candle may be manufactured either in the dip or mold form, cheaply, easily and expeditiously with a smaller amount of wick, though divided into three wicks, for a given size of candle, and giving more than double the amount of light, than the ordinary single solid wick candle.

What I claim as my improvement on the many, solid-wicked candle, and desire to secure by Letters Patent, is—

A candle constructed as described with three or more wicks (*a*) when said wicks are arranged angularly to each other or in the path of a circle struck from the center of the candle, at equal distances apart or thereabout, essentially as shown in Fig. 3 and for the purposes specified.

B. D. SANDERS.

Witnesses:
S. H. Wales,
William Tusch.