H. HALVORSON.

Lamp-Wick.

No. 161,118. Patented March 23, 1875.

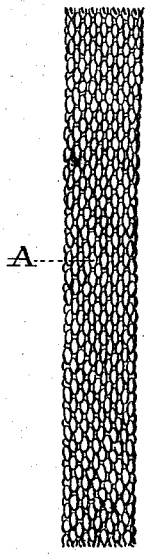

Fig. 1.

Witnesses;
F. G. Parker
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Inventor;
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UNITED STATES PATENT OFFICE.

HALVOR HALVORSON, OF CAMBRIDGE, ASSIGNOR TO CHARLES ALBERT SHAW, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN LAMP-WICKS.

Specification forming part of Letters Patent No. **161,118**, dated March 23, 1875; application filed February 10, 1875.

To all whom it may concern:

Be it known that I, HALVOR HALVORSON, of Cambridge, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Lamp-Wicks, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a side elevation, A representing the body of the wick.

My invention relates more especially to that class of wicks which are designed for use in lamps adapted for burning kerosene or the hydrocarbon oils; and consists in a wick composed of cotton or similar fibrous material, and oxidized or treated as hereinafter fully set forth and claimed, the object being to increase its capillary action and render it more easily cut or trimmed.

It is well known by all conversant with such matters that it is difficult to cut the ordinary woven, knit, felted, or braided wicks used in lamps for burning kerosene, in such a manner as to trim the lamp evenly and properly, especially while the wick is in the tube, and after it becomes saturated with oil. It is also well known that when a wick of this character is woven, knit, felted, or braided too closely, or when its strands contain too many short hirsute projections or loose fibers, it will "mat" or indurate, having its capillary action so much reduced as to insufficiently supply the flame with oil.

My invention is designed to obviate these difficulties and objections; and to that end I subject the wick to the action of permanganate of potash, or oxidize it by chemical action, rendering it more brittle or easily cut, increasing its capillary properties, preventing hardening or induration, and causing it to maintain its form better than the ordinary wick.

In carrying out or putting my invention into practice, I take the ordinary knit, woven, braided, or felted wicks of commerce, and immerse them in a concentrated cold solution of permanganate of potash or soda—potash being preferable—and raise the temperature to a boiling-point while the wicks are immersed in the solution, the operation being repeated until the wicks are sufficiently oxidized, after which they are removed and thoroughly rinsed in clear soft water, and well dried.

A dark-brown color will be imparted to the wicks during the process by the manganic oxide, while the freed alkali and the ozone liberated from the permanganic acid will render them sufficiently brittle to enable them to be cut or trimmed easily. A kindred result is obtainable by treating the wick with chromic acid liberated from bichromate of potash by the addition to a solution of the same of an atomic equivalent of sulphuric acid, although such a method is not so desirable as the first, as a green color is given to the wick, caused by a deposit of oxide of chromium.

I have found that these processes, more especially the first, render the fibers or substance of the wick rigid in a slight degree, enabling it to maintain its form in the wick-tube much better than the ordinary wick.

It will be obvious to all conversant with such matters that, in oxidizing the wick, a great variety of means may be employed, of the same general nature and with substantially the same results. I therefore do not confine myself to the special method herein set forth, or to the formula given.

On the 15th day of December, 1874, Letters Patent of the United States numbered 157,685 were granted to Charles Albert Shaw, as my assignee, for an improved lamp-wick, and an application for Letters Patent for an improved lamp-wick was filed by me on the 3d day of February, 1875, the wick described in said Letters Patent, and also in said application, having some of the characteristics of the wicks produced by the foregoing process. I therefore do not herein claim anything shown or described in said Letters Patent or said application, when in and of itself considered; but

What I claim is—

As a new article of manufacture, a fibrous lamp-wick, oxidized by means of permanganate of potash, substantially as and for the purpose specified.

HALVOR HALVORSON.

Witnesses:

C. A. SHAW,

H. E. METCALF.