H. HALVORSON.

Lamp-Wick.

No. 161,029. Patented March 23, 1875.

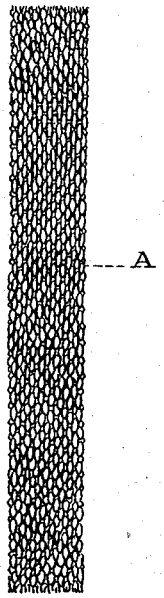

Fig. 1.

Witnesses;
H. E. Metcalf,
H. E. Remick.

Inventor;
Halvor Halvorson,
Per C. A. Shaw,
Atty.

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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. **161,029**, dated March 23, 1875; application filed February 3, 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 with an acid or gas, 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 acid or gas, or oxidize it by chemical action, rendering it more brittle or easily cut or trimmed than an ordinary wick, and, by destroying the fine hirsute projections or loose fibers which clog up the ducts or pores, greatly increase its capillary properties, and prevent induration or hardening.

In carrying out my invention I take the ordinary knit, braided, woven, or felted lamp-wicks of commerce, and immerse them in a bath or solution composed of one part of sulphuric acid and six parts of water, letting them remain in the bath about three hours. I then remove them and allow them to partially dry, or the water to evaporate, after which they are immersed for about ten minutes in a solution or bath composed of one part of chlorate of potassa and ten parts of water. After being removed from the potassa solution or neutralizing bath, the wicks should then be rinsed or washed in pure water until thoroughly cleansed.

The acid acts upon the substance of the wick to soften or disintegrate it, rendering it pulpy and brittle. The chlorate of potassa neutralizes the acid, the chlorate being decomposed, resulting in sulphate of potash and free chloric acid, and the chloric acid, coming into contact with the organic substance of the wick, is itself decomposed, and the wick oxidized and rendered still more brittle.

Nearly the same effects may be produced by continuing the use of the acid bath a greater length of time, and neutralizing with a solution of any of the soluble alkalies or their carbonates, soda being preferable on account of its low price and the extreme solubility of its sulphate. Or the oxidation of the wick may be effected by submitting the same to the action of dry chlorine gas.

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, having some of the characteristics of the wick produced by the foregoing process. I therefore do not herein claim anything shown or described in said Letters Patent, when in and of itself considered; but

What I claim is—

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

HALVOR HALVORSON.

Witnesses:

GEO. G. SHAW,

H. E. METCALF.