

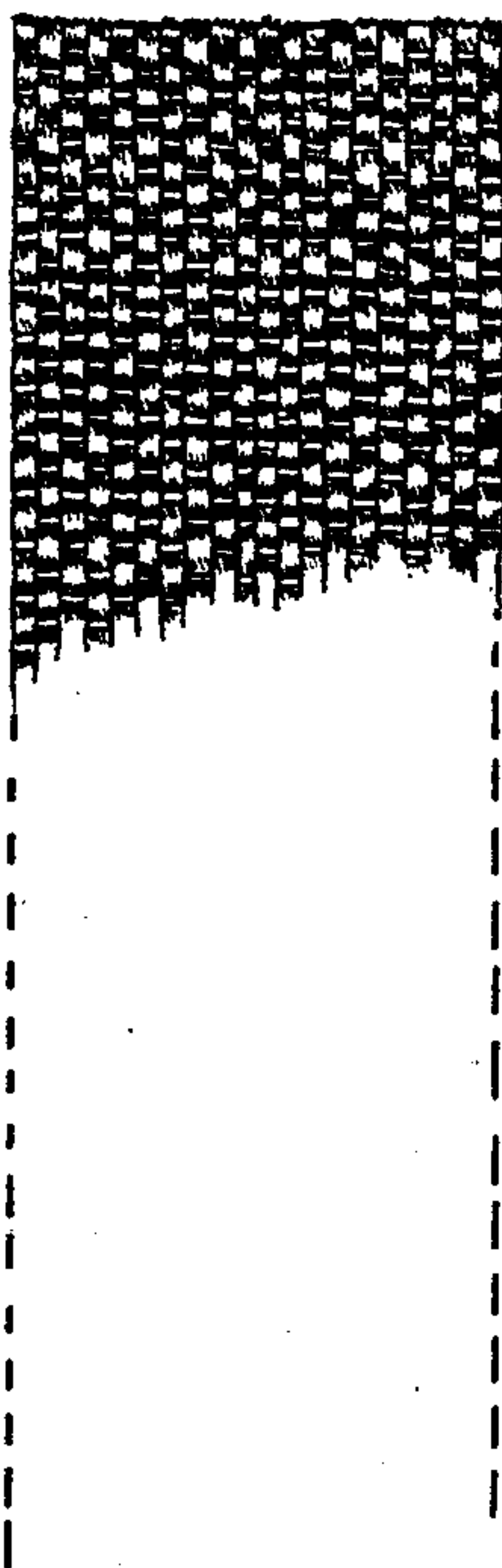
No. 632,902.

C. L. MARSHALL.
WICK.


Patented Sept. 12, 1899.

(Application filed Dec. 3, 1897.)

(No Model.)



Witnesses:

Fredrick B. Hill.
Edward H. McKee


INVENTOR:

Charles L. Marshall
By His Attorney,
Myron Francis Hill

UNITED STATES PATENT OFFICE.

CHARLES L. MARSHALL, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE
NEW JERSEY WICK COMPANY, OF SAME PLACE.

WICK.

SPECIFICATION forming part of Letters Patent No. 632,902, dated September 12, 1899.

Application filed December 3, 1897. Serial No. 660,601. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES L. MARSHALL, a citizen of the United States, residing at Newark, in the county of Hudson and State of New Jersey, have invented a new and useful improved process of treating wicks for lamps, stoves, &c., employing hydrocarbons for combustible purposes, of which the following is a full and accurate description.

In the drawing the figure represents one of my wicks. It may have any of the ordinary weaves, but that shown is preferred.

One of the great difficulties in the use of wicks of cotton or vegetable fiber is their acquisition of water, which reduces their capillary power, clogging or preventing the flow of oil in the lamp or stove. It has heretofore been proposed to boil wicks and then to dry them at 130° Fahrenheit, and thus cleanse them from dirt and the more volatile natural oils. This does not prevent the future accumulation of water, however, and it sometimes distorts the wicks, so that they will not fit the lamps for which they were made.

The object of my invention is to produce a wick in which these obstacles to good service are removed. In my process the first step is boiling or steeping. This removes the starches, refuse matter, and certain of the hydrocarbons which are removed by boiling. Some potash or lye helps this removal. Preferably before the wicks are dry and while they still contain water to some extent they are placed in an oven substantially free from oxygen, like that shown in my Patent No. 582,581, dated March 11, 1897, and gradually heated. First the water is vaporized, and in passing out of the wick loosens up the fibers. Next the heavier natural oils are vaporized successively at different temperatures, and their vapors act on the wick fibers in such a way that the fibers no longer facilitate or permit the absorption of moisture in the presence of oil. The temperature is raised for fullest benefits to 300° or 400° Fahrenheit, or even to 500°. The capillary power is still there to hold water in the absence of oil; but oil will quickly displace the water, and the wick when thus filled with oil will no longer hold water or become clogged.

In the boiling process pure and simple first mentioned no oil-vapors are generated. Boiling melts and carries away some oils to be sure; but the wicks are then dried at a lower temperature.

Incidental to this process the wick is carbonized sufficiently to lend brilliancy to the flame. For greatest commercial usefulness treatment of the wicks in the oven should be at 400° Fahrenheit and may last about twelve hours. Within certain limits a greater temperature with a shorter exposure, or vice versa, will secure substantially the same results.

I claim—

1. The process of treating wick fibers which consists in boiling them to cleanse them and melt out certain oily, fatty and waxy matters thus affected, and distilling them to try out certain other matters so affected.

2. The process of treating wick fibers which consists in filling them more or less with H₂O and distilling them at a temperature sufficient to volatilize some of the heavier oils fats and waxes.

3. The process of treating wick fibers which consists in boiling them, and while containing water, vaporizing the water and some of the oils, fats and waxes in a chamber substantially inaccessible to oxygen.

4. The process of treating wick fibers which consists in subjecting them to a raised temperature in H₂O, and then drying them at a greater heat sufficient to volatilize some of the heavier oils, fats and waxes.

5. The process of treating wick fibers which consists in subjecting them to a raised temperature in H₂O, and then drying them at a greater heat sufficient to volatilize some of the heavier oils, fats and waxes and to partially carbonize them.

6. The process of treating wick fibers which consists in subjecting them to water at about 212° Fahrenheit to permanently carry off certain of the oils, fats and waxes, and starchy and refuse materials, and then subjecting them to still greater temperatures to carry off the water and some of the heavier oils, fats and waxes, and at the same time to partially carbonize said fibers.

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7. The process of treating wick fibers which consists in boiling them with potash or an equivalent, to cleanse them of starches, refuse, and certain oils, fats and waxes thus affected, and then distilling said fibers to vaporize oils, fats and waxes not so affected.
8. The process of treating wick fibers which consists in boiling them, and then distilling them in an oven substantially inaccessible to oxygen.

CHARLES L. MARSHALL.

Witnesses:

CHARLES F. DAVIES,
FREDERICK B. HILL.