UNITED STATES PATENT OFFICE.

ANTONIO MEUCCI, OF CLIFTON, ASSIGNOR TO WM. E. RIDER, OF NEW YORK, N. Y.

IMPROVED MODE OF MAKING WICKS.

Specification forming part of Letters Patent No. **46,607**, dated February 28, 1865.

To all whom it may concern:

Be it known that I, ANTONIO MEUCCI, of Clifton, in the county of Richmond and State of New York, have invented a new and useful Wicking for Lamps, and for other purposes to which it may be applicable; and I do hereby declare that the following is a full, clear, and exact description of my said invention and of the mode of making the same.

Lamp-wicks have usually been manufactured of fibrous material—such as cotton—by spinning it into yarn and weaving or plaiting the yarn into the required form. The raw material required for such a mode of manufacture is costly and the labor involved in the manufacture is considerable.

The object of my invention is to produce a lamp-wick which will cost a materially less sum than the woven or plaited wicks; and my invention consists of a wick or wicking of recomposed vegetable fiber prepared and agglomerated by a process similar to that used in manufacturing paper from vegetable material.

The several modes in which I have contemplated the application of the principle or character by which my invention may be distinguished from other inventions are as follows: The vegetable fiber which I employ in the production of my new manufacture is paper-pulp made from wood or any other suitable material—such as straw, cotton, or linen rags and paper clippings. I employ this pulp in the wet state, in which it is used for the manufacture of paper, and I spread a quantity of it evenly upon a sheet of metallic gauze, in the same manner as is practiced in the manufacture of paper by hand, the metallic gauze being sustained by a frame of wood or in any other suitable manner. If flat wicks for kerosene-lamps are required, the quantity of pulp should be sufficient to produce (when drained and dried) a sheet of a thickness of about one-eighth of an inch, more or less, which is the usual thickness of woven wicks. The sheet of wet fiber is drained of water and is permitted to dry without pressure. It is then cut into strips of the required length and breadth for wicks.

Wicks produced in the above mode are not as tenacious as is desirable. In order to impart to them the desirable tenacity, I envelop them with bobbinet or similar gauze made of cotton by cutting the bobbinet into strips of sufficient breadth to encircle the wicks and permit their edges to be slightly overlapped, dampening the strips, wrapping the wicks in them, and permitting them to dry; or, I dampen the wicks and envelop them in the bobbinet and permit them to dry; or, I cut the damp sheet of recomposed fiber into strips as soon as it is sufficiently dry to permit this operation and envelop them in the bobbinet and permit them to dry. The gum or starch with which the bobbinet is dressed, as found in the market, is sufficient to cause the wicks and bobbinet to adhere to each other.

Another mode in which I contemplate the application of the principle of my invention is as follows: I spread, as before described, a sufficient quantity of the pulp upon the wire-gauze to form when dry a sheet of a thickness about half of that of the wick to be made. While the sheet of pulp is wet I cover it with a sheet of thin bobbinet or similar gauze made of cotton, and I cover this gauze with an additional quantity of pulp equal to the first deposit, so as to form a compound sheet of pulp and gauze, the latter within the former. The compound sheet, when thoroughly drained of water, is permitted to dry without pressure, and is then cut into strips of the required length and breadth for wicks.

I sometimes combine silica with my wicking, the effect of which is to lessen the formation of a crust while burning. The silica may be combined with the wicks in the process of manufacture in either of the following ways: First, by mixing powdered asbestus with the fiber in the pulp state before it is spread upon the wire-gauze in the proportion of about one or two per cent. of the weight of the fiber when dried; secondly, by dipping the wicks or wicking in a saturated solution of the silicate of potassa or soda and permitting them to dry. I also sometimes combine powdered charcoal with my wicking, the effect of which is to make the light more brilliant when the wick is employed in kerosene-lamps. The powdered charcoal may be combined with the wicks by dusting the wet sheet of recomposed fiber with the powdered charcoal before the bobbinet is applied to it, and when charcoal is used

I prefer to apply it in such manner that it is within the wick, which may be done by making the wicks of two thicknesses in the mode above described, and dusting the first thickness of fiber with the charcoal before or after the bobbinet is applied and before the second thickness of pulp is applied to the first.

Wicks or wicking made substantially as above set forth may be used for lamps or for any other purpose to which they are applicable; and, as they are not solidified by pressure or by a glutinous sizing, their highly-porous and open structure adapts them admirably to the transmission of the burning fluid from the reservoir to the aperture of the wick-tube, where the burning takes place. Their form may be varied to suit the particular purpose required. As the wicks are composed of paper-stock, the cost of which is greatly less than that of a fibrous material which is suitable for spinning and weaving, the cost of the article is considerably less than a plaited or woven wick of the same size.

What I claim as my invention, and desire to secure by Letters Patent, is—

The new manufacture of wick and wicking of recomposed vegetable fiber, substantially as herein set forth.

In testimony whereof I have hereunto set my hand this 12th day of January, A. D. 1865.

ANTONIO MEUCCI.

Witnesses:

DAVID WHITING,

E. S. RENWICK.