

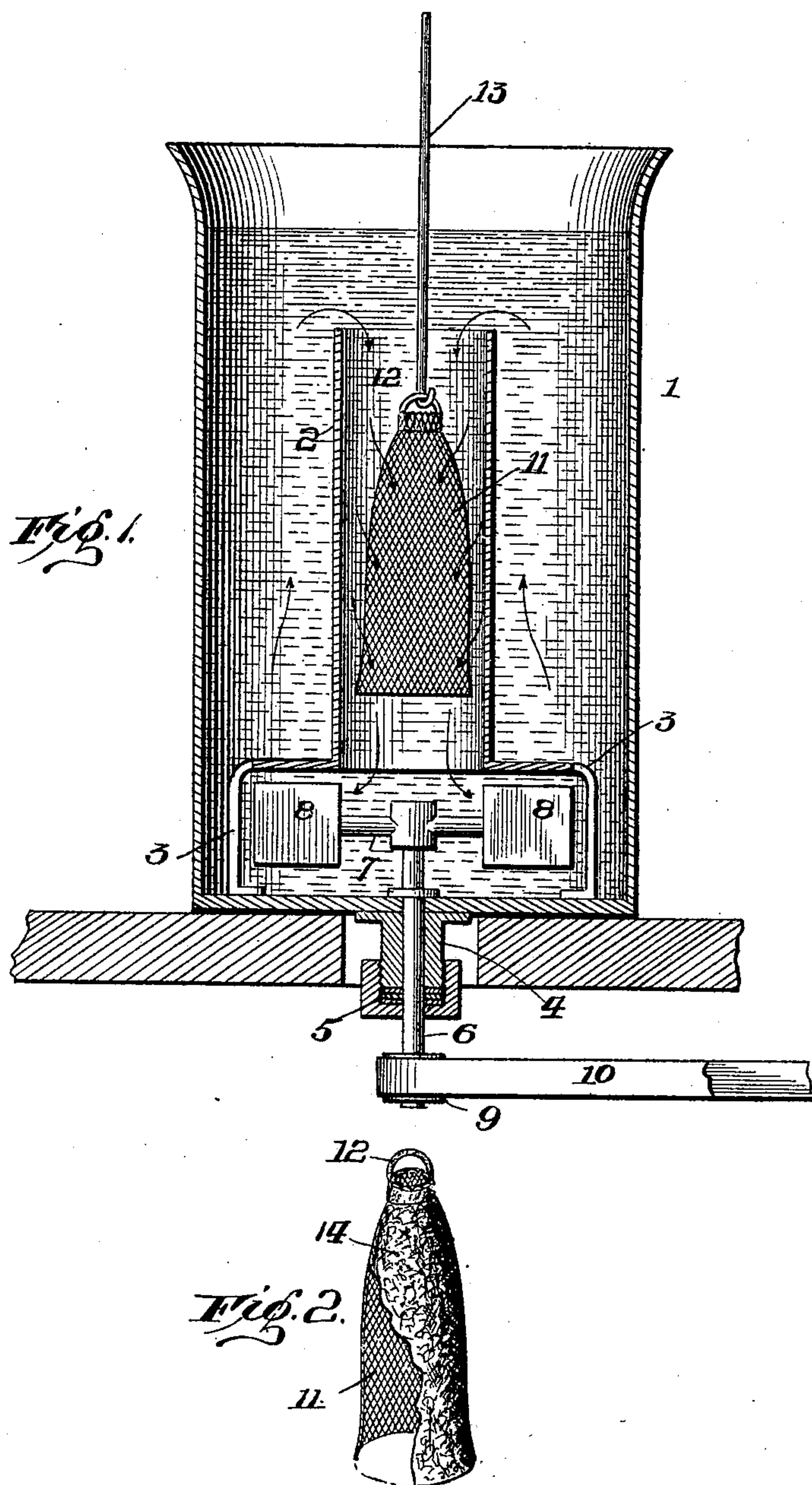
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Patented Aug. 22, 1899.

C. CLAMOND.
INCANDESCENT GAS LIGHT MANTLE.

(Application filed May 13, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE

CHARLES CLAMOND, OF PARIS, FRANCE.

INCANDESCENT GAS-LIGHT MANTLE.

SPECIFICATION forming part of Letters Patent No. 631,617, dated August 22, 1899.

Application filed May 13, 1899. Serial No. 716,699. (No model.)

To all whom it may concern:

Be it known that I, CHARLES CLAMOND, a citizen of the Republic of France, and a resident of Paris, France, have invented certain new and useful Improvements in Incandescent Gas-Light Mantles, of which the following is a specification.

My invention has reference to improvements in incandescing gas-light mantles, and has for its object the strengthening of such mantles, so as to fit the same for transportation and for such manipulation as they have to undergo before they are safely mounted upon the burners.

The invention is an improvement upon an old practice to which I resorted for strengthening incandescing gas-light mantles in connection with the magnesium baskets or mantles described in my Letters Patent of the United States No. 261,529, dated July 25, 1882. In that patent I described and claimed, among other things, an incandescing mantle or basket composed of magnesia threads. The magnesia threads of which the mantle was formed were made as thin as practicable, but were yet comparatively strong, so that the mantle could be handled without great danger of breaking if sufficient care and delicacy were observed. Still the mantle was unfit for transportation, and in order to overcome this difficulty I provided the mantle with a wrapping of paper or other combustible material, so as to strengthen it for transport and handling. This reinforcing-casing was burned away when the jet was ignited.

My present invention also provides a reinforcing-casing of paper for incandescing mantles, and particularly for mantles of great delicacy, such as the Welsbach mantles or other like mantles composed of filaments or earthy oxids obtained by impregnating fabrics with a solution of the salts of the rarer metals, then burning away the combustible fabric and leaving a skeleton hood or frame of earthy oxids. With such mantles it is impracticable to provide the reinforcing-casing of paper by wrapping the paper over the mantle, since the latter is altogether too fragile to be subjected to such process. My present method overcomes this difficulty, since by the same the delicate mantle receives a closely fitting and adhering envelop of paper with-

out being at any time subjected to the pressure or impact of paper in its formed state, but has the paper deposited upon it in the same manner in which paper is deposited upon metal gauze in the ordinary manufacture of paper. By this new method the article is also greatly improved, so that my invention comprises both a method of producing a reinforcing combustible casing for incandescing filaments and also a new and improved casing of this character.

The invention further comprises a new apparatus for practicing the new process.

All this will more fully appear from the following detail description with reference to the accompanying drawings, in which I have illustrated, in—

Figure 1, a vertical section of one form of apparatus that may be used in the practice of my improved method, and in Fig. 2 a perspective view of the improved reinforced mantle with a portion broken away.

The method or process practiced with the apparatus shown consists in coating incandescing mantles with a perfectly-fitting and closely-adhering layer of paper by filtering through the meshes of the mantle a mixture of paper-pulp and water or other fluid.

Referring now to Fig. 1, there is shown a vessel 1, of metal or other suitable material, and in the same is supported a tube 2 upon legs 3, which may be secured to the bottom of the vessel in any suitable manner. A journal-block 4, secured to the under side of the bottom of the vessel 1, is provided with a stuffing-box 5, and through both passes a shaft 6, to which are fixed within the vessel a number of radial arms 7, which carry at their outer ends blades or fans 8. To the outer end of the shaft is fixed a pulley 9, receiving a belt 10 from any suitable source of power. In this manner the shaft can be rotated with the requisite speed. The paddles or blades clear the opening of the tube 2, but are rather close to the latter, and when a fluid of any kind is filled in the vessel the centrifugal force imparted to it by the movement of the paddles produces a current of the fluid in the direction of the arrows indicated—that is to say, the fluid rises outside of the tube and descends within the same.

With this apparatus my process is prac-

ticed in the following manner: An incandescent mantle 11, provided at its top with the usual loop 12, is hooked onto a rod 13 and is lowered into the fluid contained in the vessel and into the tube 2. Owing to the currents of the fluid produced by the rotation of the paddles, this fluid will pass through the meshes of the mantle from the outside to the interior in the manner indicated, and if the fluid contains in suspension matters or particles that are too large to pass through the meshes such particles will be deposited on the outer surface of the mantle and will eventually form a closely-fitting continuous casing upon the same. Now the liquid which I employ in this process is paper-pulp thoroughly mixed with water or other fluid, and it follows from what I have so far described that the filaments of cellulose suspended in the fluid will be caught on the outer surface of the mantle, while the fluid itself will pass through the same. In other words, the mixture is filtered through the mantle. After a very short time—between ten and fifteen seconds—the whole mantle is covered on its outer surface with a closely-fitting continuous layer of felted cellulose, which is nothing but a film of paper. During the first few seconds the deposition of paper progresses very fast, but diminishes in speed perceptibly after a little while; but it will be seen that in this manner any desired thickness of paper may be deposited upon a mantle if the process is continued for a sufficient length of time. It will also be seen that the speed of depositing the paper also depends upon the percentage of paper-pulp that is mixed with the fluid. When a sufficient thickness of paper has been deposited, the mantle is withdrawn and is allowed to dry in the open air or in any other suitable manner, and it may then be handled with impunity and may be packed for transportation without danger of breakage. The mantle thus produced is illustrated in Fig. 2, in which the strengthening-envelop is indicated at 14 by suitable shading. In the interior of the mantle no deposit of paper is obtained, as is quite natural. There the threads or filaments of the mantle retain their original aspect.

When the reinforced mantle is placed upon the burner and the gas is lighted, the envelop

burns away instantly and leaves no perceptible or injurious residue.

Having now fully described my invention, I claim and desire to secure by Letters Patent—

1. The process of reinforcing incandescing mantles with a closely fitting and adhering, continuous film of paper, which consists in filtering through the meshes of the mantle a mixture of paper-pulp with a suitable fluid, substantially as described.

2. The process of coating the exterior surface of incandescing mantles with a closely fitting, adhering, continuous film of paper, by subjecting the mantle to a current of a mixture of paper-pulp and water, substantially as described.

3. As an article of manufacture, an incandescing mantle having on its outer surface a closely fitting, adhering, continuous coating of paper, substantially as described.

4. The herein-described apparatus for depositing paper upon incandescing mantles, composed of a vessel for receiving a mixture of paper-pulp and water, a vertical tube, open at both ends, supported within the vessel, and means for producing the circulation of the fluid within the vessel and through said tube, substantially as described.

5. An apparatus for coating incandescing mantles with paper, composed of a vessel adapted to receive a mixture of paper-pulp and water, a tube open at both ends adapted to receive an incandescing mantle, supported centrally within the vessel, and rotatable paddles mounted below the tube and clearing the opening of the same, whereby the rotation of the paddles causes the fluid to flow upwardly outside of the tube, and downwardly inside of the same, substantially as described.

6. As an article of manufacture, an incandescing mantle having on its outer surface a deposited coating of paper, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES CLAMOND.

Witnesses:

ERNEST F. KRAULT,
HARRY KEENE.