

(No Model.)

H. D'ARCUS.  
Lamp Wick.

No. 235,215.

Patented Dec. 7, 1880.

FIG. 1.

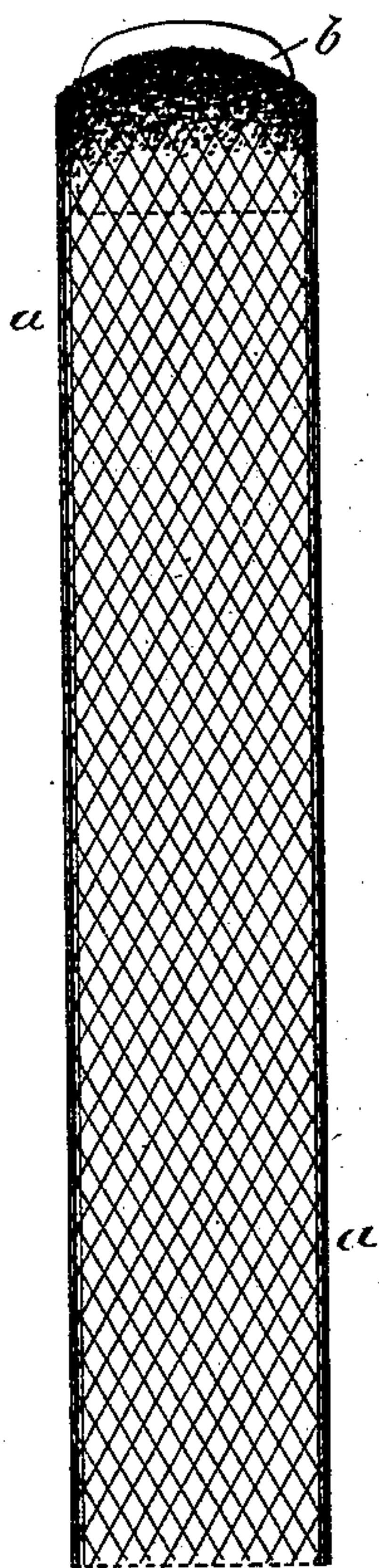
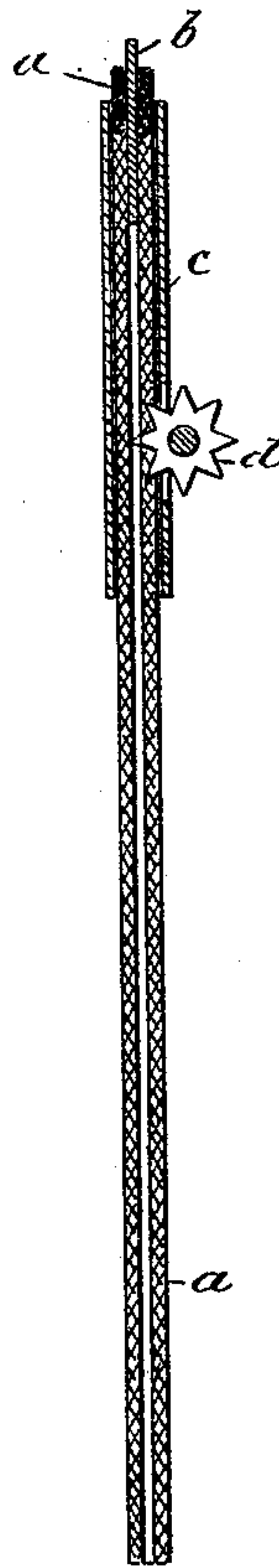


FIG. 2.



WITNESSES =

*Geo. E. Savin*  
*Chas. M. Higgins*

INVENTOR =

*Henry D'Arcus*  
*by S. Walcott*  
*Atty.*



# UNITED STATES PATENT OFFICE.

HENRY D'ARCUS, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO  
HORACE B. GRIFFING, OF SAME PLACE.

## LAMP-WICK.

SPECIFICATION forming part of Letters Patent No. 235,215, dated December 7, 1880.

Application filed October 28, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY D'ARCUS, of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Lamp-Wicks, of which the following is a specification.

In the annexed drawings, Figure 1. gives a side elevation of my improved wick, and Fig. 2 a vertical section thereof, viewed edgewise, and arranged in the wick-tube, which also appears in section.

My invention relates to that class of wicks constructed with metal tips or metal cores, and may be stated to consist in constructing the wick with a metallic strengthening-piece inserted in the upper extremity of the wick to support the carbonized section thereof, but insulated from contact with the wick-tube elevator or other metal portion of the burner, whereby an important improvement is effected, as hereinafter set forth.

In the drawings, *a* indicates the absorbent portion of the wick or wick proper, which is preferably made of the usual woven cotton fabric made in a hollow or tubular web, as seen best in Fig. 2, in about the ordinary manner. In the upper end of this tubular wick is inserted a thin, short piece of metal, *b*, which preferably protrudes a slight distance from the tip of the wicking, and extends down into the wick but a slight distance, or just below the section which becomes carbonized in ordinary use, as illustrated. The metal tip thus terminates within the wick at a point well above or remote from the point where the ratchets *d* of the wick-elevator seize the fabric of the wick; and, furthermore, the inserted portion of the metal is completely inclosed in the wicking, and is thus out of contact with, or insulated from, the sides of the wick-tube *c*, and from the wick-elevator or other metallic part of the burner, which secures important advantages.

The metal plate is secured in the wicking by a silicate cement, or by stitching, or any other suitable fastening, so as to prevent its displacement.

Now, as the cotton around the upper part of the metal plate becomes carbonized during use, it forms an incombustible tip of the best

character, being in a high degree absorbent, non-conductible, and fire-proof; but, owing to its fragile nature, if unsupported, as in a common wick, would easily break off so as to present an irregular edge, which, as is well known, would require constant trimming to give a regular flame.

In my invention, however, the metal plate, by rising from the uncarbonized portion through the carbonized part of the wick, strengthens this fragile portion, and prevents its becoming broken off by the movements of the wick up or down in the wick-tube, and as the metal plate protrudes slightly from the carbonized edge it thus preserves the fragile edge from being frayed by contact with matches used in lighting the wick. Hence the improved wick preserves a regular edge, which will constantly give a regular flame and requires no trimming, thus presenting an improved form of incombustible wick.

Furthermore, as the metal plate is confined entirely to the tip of the wick, and is inclosed within the same and completely insulated from contact with any portion of the wick-tube or burner, or with the oil in the reservoir, no heat is conducted thereby from the flame to the burner or to the oil of the reservoir, nor is the oil in the wick itself unduly heated or too rapidly vaporized. Hence the flame is under perfect control, and is as responsive to the action of the wick-regulator to raise or lower the flame as is the case with a common wick; whereas were the metal plate to contact in any way with the burner, or extend into the top of the oil-reservoir or into the oil, vaporization would be so rapid as to render the flame uncontrollable by the raising or lowering of the wick, besides rendering the lamp quite unsafe by heating the burner and reservoir and tending to vaporize and heat the oil therein beyond a safe limit.

My invention is thus a distinct and important improvement over the metal-tipped or metal-cored wick heretofore invented; for in cases where the metal has been placed within the wick only, as in Patent No. 110,188, of 1870, it has extended entirely through the wick, down through the oil-reservoir, and into the oil, and has been engaged by the wick-



elevator, its stated objects having been to stiffen the wick throughout and offer an enduring engagement for the wick-elevator to operate the wick, as well as to increase the vaporization, which objects it appears well fitted to accomplish; but, as may be observed, possesses the serious defects of unduly vaporizing the oil throughout the wick and conducting the heat from the flame to the burner and oil-reservoir and directly into the body of the oil.

In other wicks of this class to which it may be proper to refer, where the metal is applied to the tip of the wick only the metal addition has been in the form of a cap of sheet metal or wire-cloth upon the exterior of the wick where it comes in direct contact with the wick-tube, and is thus open to the same serious objection, which, in fact, renders such wicks inoperative on account of the rapid conduction of heat to the burner and the enforced vaporization of the oil, which not only renders the lamp unsafe, but renders the flame uncontrollable, except within wide limits by the movements of the wick-elevator.

In the practical operation of my improved wick it has been found that the flame is perfectly responsive to the adjustments of the wick-regulator; and, moreover, a wick of this kind has been in constant use for six months, yet still preserves a regular edge and gives a broad regular flame. Hence my improved wick becomes very desirable for general household use, but particularly so for many public purposes where a large number of lamps are constantly employed and where the necessity of frequent trimming is objectionable—

such as for street or railway cars, street-lamps, &c.—and it is believed that the failure of former wicks of this class to come into use is due to the serious defects before noted, which my construction obviates.

My improved wick may, of course, be made in all sizes for ordinary lamps or oil-stoves and for flat-wicked or Argand burners, and it may be observed that perforated metal or wire-cloth may be substituted for the continuous metal plate *b* illustrated; but the latter is found much preferable, both in action and cheapness. A piece of mica may be used instead of the metal plate *b*; but I find that this is liable to become laminated or misshapen by the heat, and is otherwise not so well adapted for the purpose as is metal plate.

The wick may, of course, be made, also, of two layers of felt stitched together, with the metal plate sewed into the tip of the same, in the manner already illustrated; but the tubular cotton webbing is, of course, preferable.

What I claim is—

A lamp-wick constructed with an incombustible or metallic tip inserted in and confined to the flame end of the wick and terminated within the wick at a point above the location of the wick-elevating ratchets, where by the said metal tip acts to protect and support the carbonized section of the wick, and is insulated from all parts of the lamp-burner and from the oil of the reservoir, substantially as and for the purpose herein set forth.

HENRY D'ARCUS.

Witnesses:

H. B. GRIFFING,  
CHAS. M. HIGGINS.