

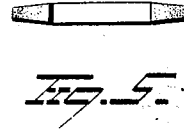
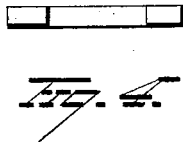
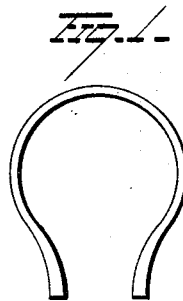
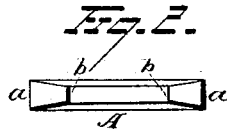
(No Model.)

H. A. SEYMOUR.

CARBON FOR INCANDESCENT LAMPS.

No. 261,261.

Patented July 18, 1882.



WITNESSES

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CARBON FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 261,261, dated July 18, 1882.

Application filed December 17, 1881. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. SEYMOUR, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Carbons for Incandescent Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improvement in bent or curved incandescent carbons for electric lamps, its object being to equalize the conductivity of such carbons throughout their surfaces in respect to both heat and electricity, and thus to prevent breakage from expansion and contraction from changes of temperature, and to obviate unequal wasting of the carbons at various points on account of an unequal division of heat resulting from differences of conductivity of the electric current over different portions of the carbon surface. Referring to the common horseshoe form of carbon, for example, it is well known that in such carbons as ordinarily prepared the interior or concave surface, being shorter than the convex or outer surface, furnishes the most direct route for the current between the extremities of the carbon, and that a preponderance of the current will therefore flow over this surface, and it will be raised to incandescence sooner and expand more rapidly than the outer surface, the result being a tendency to break the carbon as the inner portion expands against the resistance of the outer portion. An inverse relation of opposing strains is set up when the carbon begins to cool after the current is turned off, having, however, an equally disruptive tendency. Should the carbon withstand the breaking strain from unequal expansion, the preponderance of current still flows over the inner or concave surface, which consequently is subjected to more intense heat and wastes more rapidly than the outer surface, so that the strength of the carbon, as a whole, decreases much more rapidly than it would were the conductivity equal in these several surfaces. The same disadvantages attend bent or curved carbons, whatever may be their form, as the concave and convex sur-

faces have the same relation. In overcoming these disadvantages I so construct a bent or curved carbon that as its outer or convex surface increases in length it also increases in density and strength to resist strain, and in conductivity both of heat and electricity. This I accomplish by forming my carbons from a plastic pulp or compressible carbonaceous substance and subjecting it to a pressure which gradually increases from the inner or concave to the outer or convex surface.

In the accompanying drawings, Figure 1 is a view in side elevation of one form of carbon constructed in accordance with my invention. Fig. 2 is a cross-section of one form of blank before compression. Fig. 3 is a cross-section after compression. Fig. 4 is a cross-section of another form of blank before compression, and Fig. 5 a cross-section after compression.

In Fig. 2, A represents a cross-section of a blank composed of pulp of any desired kind of vegetable fiber and practically uniform in density. This blank is placed under a suitable die and its outer margin compressed in a greater degree than its inner margin or portion, so that its outer portion or edge, *a*, will be more dense, and consequently stronger and a better conductor of electricity, than its inner portion or edge, *b*, the increase of strength and conductivity compensating for the difference in length.

Fig. 4 shows another form of blank before being subjected to pressure, and Fig. 5 the resulting carbon-blank after having been subjected to pressure. The blank, after compression, may be carbonized in any suitable manner, or instead of compressing the outer edge of the carbon-blank before carbonization it may be done after carbonization.

The blank may be cut from sheets of pulp or from paper, or the pulp may be placed in a forming-die and the blank formed and pressed in a single operation.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In the manufacture of curved or bent carbons, the method of varying the conductivity of the different lengthwise layers of the carbon proportionate to their respective lengths,

consisting in subjecting the outer and longer portion of the carbon to greater pressure than its inner or shorter portion.

2. A bent or curved carbon having its outer
5 portion or edge more compressed or dense than its inner portion or edge, so as to compensate for the difference in length between the outer and inner edges of the carbon, substantially as set forth.

10 3. As a new article of manufacture, a bent or curved carbon in which the conductivity of

its different lengthwise layers is in proportion to their respective lengths, substantially as set forth.

In testimony whereof I have signed this 15 specification in the presence of two subscribing witnesses.

HENRY A. SEYMOUR.

Witnesses:

HERMAN MORAN,
F. O. MCLEARY.