UNITED STATES PATENT OFFICE.

WALTER ERNEST ADENEY AND LLEWELLYN SAUNDERSON, OF KINGSTOWN, COUNTY OF DUBLIN, IRELAND.

ARC-LIGHT CARBON.

SPECIFICATION forming part of Letters Patent No. 421,469, dated February 18, 1890.

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To all whom it may concern:

Be it known that we, WALTER ERNEST ADENEY, residing at 20 Crosthwaite Park, East Kingstown, county of Dublin, Ireland, and LLEWELLYN SAUNDERSON, residing at 10 De Vesci Terrace, Kingstown, county of Dublin, Ireland, subjects of the Queen of Great Britain, jointly have invented certain new and useful Improvements in the Manufacture of Electric-Arc Carbons, of which the following is a specification.

Our invention relates especially to improvements or modifications of the composition of carbons in order to improve the steadiness and intensity of the electric-arc light and also to make the carbons more lasting.

In order to carry out our invention, we manufacture carbons from a mixture of coke, coal, and an infusible or a difficultly fusible material by heating the mixture under pressure in a mold.

The subject-matter of our invention is specifically designated in the claims at the end of the specification.

The manner of manufacturing the carbons is as follows: Powdered gas-coke is mixed with powdered coal in the proportion of coke varying from eighty to fifty per cent., and that of coal varying from twenty to fifty per cent. To this mixture is added one to ten per cent. of infusible or difficultly fusible substance, such as compounds of aluminum, silica, calcium, iron, &c., glass, cyanite, kaolin, bauxite, asbestus, pumice, feldspar, gadolinite, samarskite, quartz, zircon, limestone, strontianite, dolomite, witherite, phosphate of lime, braunite, titanic iron, chrome iron ore, wolfram, molybdenite, fluorspar, cerite, cryolite, phosphate of aluminum, magnesite, or compounds of nickel and cobalt. These refractory substances are used to render the impurities in the coke and coal as difficultly fusible as possible, and hence increase the intensity and steadiness of the electric-arc light and the durability of the carbon. After careful mixing the ingredients are introduced into an iron mold and heated under pressure, first gently, but finally very strongly. The carbon rod thus made, if too porous, is heated, introduced into hot coal-tar, and the whole heated for some time, preferably in a vacuum. The carbon rod is then taken from the coal-tar, its surface cleaned, and again introduced into a mold and heated under pressure.

We claim—

1. The method, substantially as herein set forth, of manufacturing electric-arc carbons, which consists in mixing together powdered gas-coke, powdered coal, and an infusible or difficultly fusible material, inserting the mixture in a mold, heating it under mechanical pressure, removing the carbon pencil thus formed, immersing it in hot coal-tar and heating it, then taking it from the coal-tar and cleaning its surface, and again introducing it into a mold and heating it under mechanical pressure.

2. The method, substantially as herein set forth, of manufacturing electric-arc carbons, which consists in mixing powdered gas-coke, powdered coal, and an infusible or difficultly fusible material, inserting the mixture in a mold, heating it under mechanical pressure to form a carbon pencil, removing the pencil, immersing it in hot coal-tar, and then reheating the pencil under mechanical pressure in a mold.

3. The hereinbefore-described improvement in the manufacture of electric-arc carbons, which consists in mixing powdered gas-coke, powdered coal, and an infusible or difficultly fusible material, forming this mixture in a mold under heat and mechanical pressure and immersing it in hot coal-tar and reheating under mechanical pressure in a mold.

4. A carbon for electric lights consisting of a mixture of powdered gas-coke, powdered coal, and an infusible or difficultly fusible material in about the proportions specified impregnated with coal-tar and united under heat and pressure.

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