S. CABOT, Jr.

PROCESS OF MANUFACTURING ANTHRACENE.

No. 184,142. Patented Nov. 7, 1876.

Fig. 1.

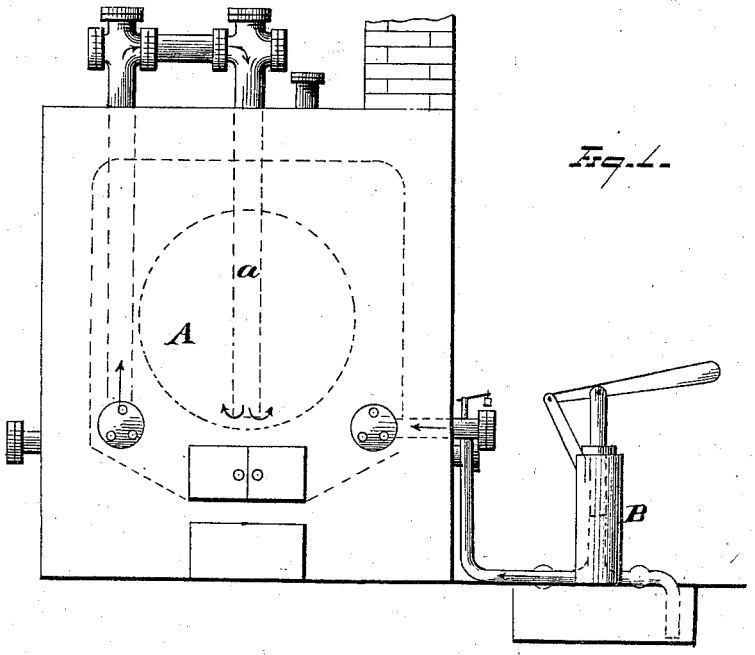
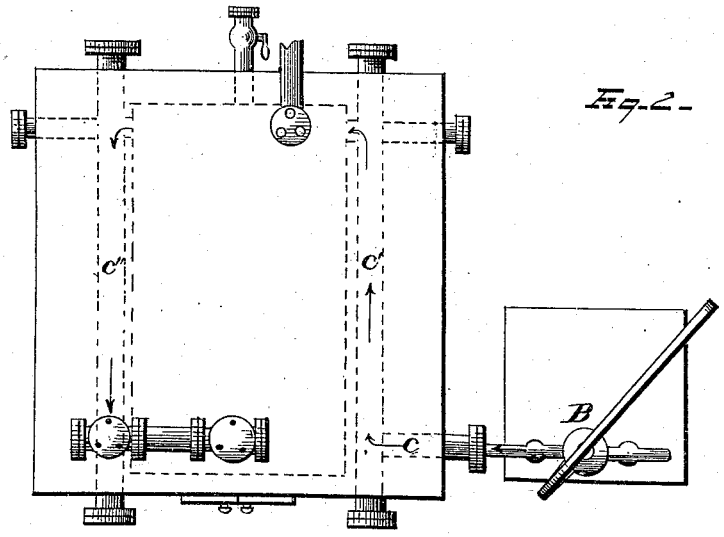


Fig. 2.



WITNESSES

Edw. Nottingham.

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INVENTOR

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UNITED STATES PATENT OFFICE.

SAMUEL CABOT, JR., OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PROCESSES OF MANUFACTURING ANTHRACENE.

Specification forming part of Letters Patent No. **184,142**, dated November 7, 1876; application filed October 31, 1876.

To all whom it may concern:

Be it known that I, SAMUEL CABOT, Jr., of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in the Art of Manufacturing Anthracene or other heavy hydrocarbons from coal-tar or wood-tar; 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 it, reference being had to the accompanying drawings, which form part of this specification, and the following is a description of my improved process.

The tar having been heated up to the temperature, or near to the temperature, at which the hydrocarbon desired distils, the vapor of some light liquid the latent heat of which is less than that of steam is forced into the heated tar by pumping a little with the force-pump B into the large hot pipes *c c' c''*, &c., which volatilize and superheat it, and then the heated vapor passes down the vertical pipe *a* to or nearly to the bottom of the still A. By this means the heavy vapor of the hydrocarbon—for instance, anthracene—is raised out of the still by the lighter vapor, and is obtained at a much lower temperature, thus leaving a more valuable pitch behind than if the temperature were raised sufficiently to distil and carry over the heavy vapor without this artificial aid. The use of superheated steam has been proposed for this purpose; but the latent heat of steam is so great that the cooling and condensing is a more difficult and troublesome process than with a light hydrocarbon. I prefer for this purpose one of the petroleum ethers on account of their cheapness, and from the fact that the light oil which condenses is useful in the subsequent purification of the crude anthracene, enabling this to be performed with less benzine or petroleum ether, as the distillate consists of such ether mixed with the anthracene or heavy hydrocarbon. While I prefer for this purpose the petroleum ethers or the lighter oils of tar, I do not restrict myself to these, but only to the vapor of any liquid the latent heat of which is less than that of steam.

What I claim as my invention is—

1. The process of manufacturing anthracene or other heavy hydrocarbons, consisting, essentially, in injecting into the still a vapor having less latent heat than steam to raise anthracene or heavy hydrocarbon out of the still or retort, substantially as and for the purpose set forth.

2. The process of manufacturing anthracene or other heavy hydrocarbons, consisting in first vaporizing any of the petroleum ethers or other light hydrocarbons by passing the same through pipes or other vessels located in close proximity to the still, and then injecting said vapors into the still for the purpose of raising anthracene or any heavy hydrocarbon out of the still, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of October, 1876.

SAMUEL CABOT, JR.

Witnesses:
HENRY A. SEYMOUR,
THOMAS B. HALL.