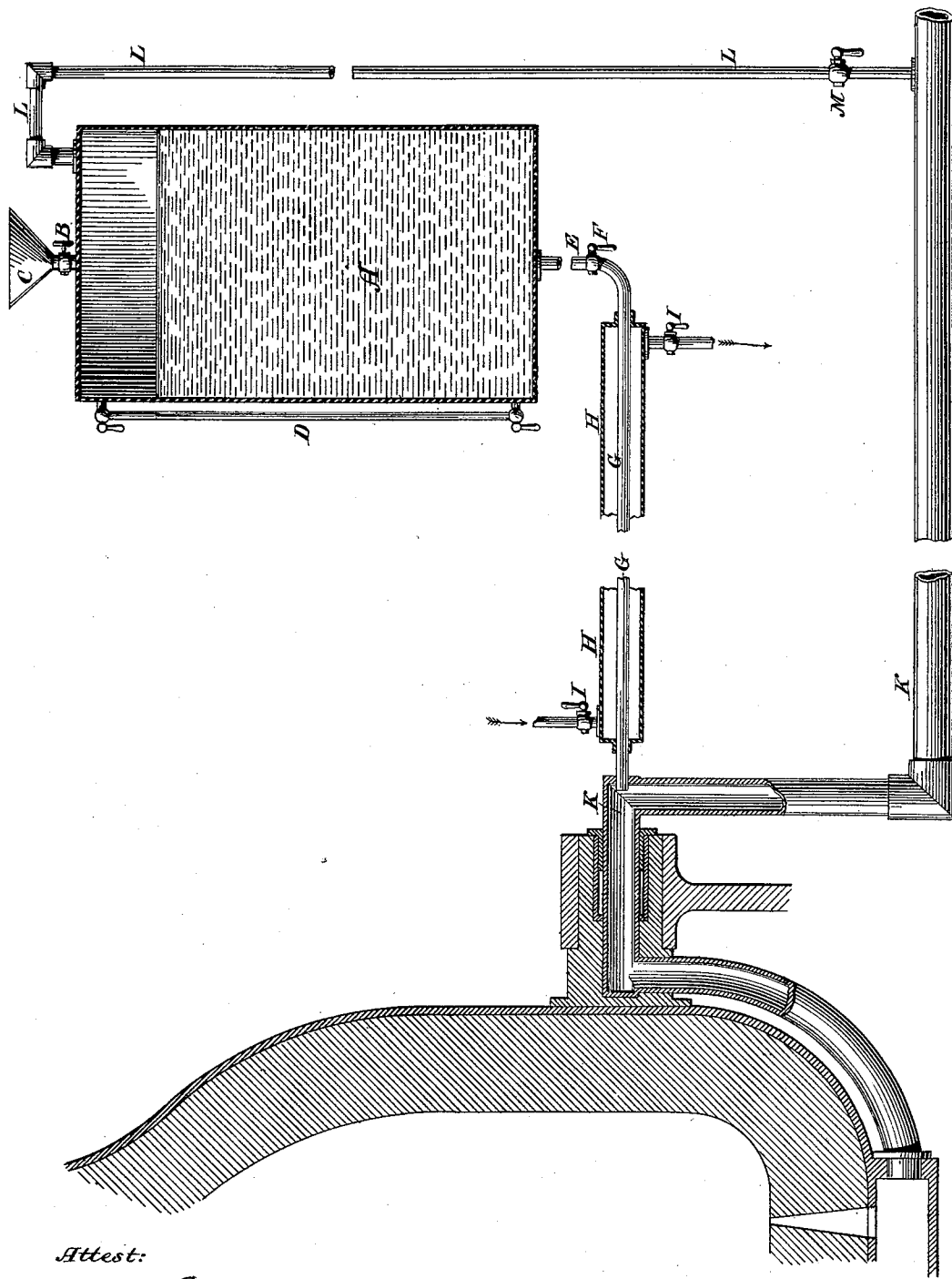


M. COVENTRY, Jr. & M. WILKS.
Apparatus for Supplying Hydrocarbons to
Metallurgic Furnaces.

No. 230,748.

Patented Aug. 3, 1880.



Attest:

Clarence Poole

Sw. July

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UNITED STATES PATENT OFFICE.

MILLIS COVENTRY, JR., AND MATTHEW WILKS, OF MANCHESTER, ENGLAND.

APPARATUS FOR SUPPLYING HYDROCARBONS TO METALLURGIC FURNACES.

SPECIFICATION forming part of Letters Patent No. 230,748, dated August 3, 1880.

Application filed September 11, 1879.

To all whom it may concern:

Be it known that we, MILLIS COVENTRY, the younger, of 60 King street, Manchester, in the county of Lancaster, England, Esq., and
5 MATTHEW WILKS, of 96 King street, aforesaid, merchant, have invented a new and useful Improvement in Apparatus for Introducing Hydrocarbons into Furnaces in which
10 Metals are Treated, which invention is fully set forth in the following specification.

Our invention consists in vaporizing hydrocarbon by means of steam in a closed jacket, and then injecting such vapor into the charge by an air-blast.

15 Heretofore hydrocarbon has been atomized by steam, which steam was afterward used to inject the spray into the charge, the steam being mingled with the hydrocarbon; and I wish to make a distinction between my process and
20 those just mentioned.

In the accompanying drawing is shown a view, partly in section, representing the device as applied to the trunnions of a Bessemer converter.

25 About sixteen feet above the level of the pipe which conveys the blast to the charge is placed a tank, A, of suitable capacity to contain the required amount of petroleum or other hydrocarbon in a fluid state. We prefer to give
30 it a capacity of at least one hundred gallons. On top of the tank is a funnel by which it is filled, and at the bottom is a discharge-pipe, E, provided with a cock, F, and this pipe E connects with a conducting-pipe, G, which extends on a level with the trunnion of the converter, and is tapped through the blast-pipe
35 K opposite the point where such blast-pipe enters the hollow trunnion.

In order to vaporize the fluid hydrocarbon
40 contained in the pipe G, we use the chamber or jacket H, which consists of a tube surrounding the pipe G and provided with steam inlet and exit pipes I I. As the purpose of the steam is simply to vaporize the hydrocarbon,
45 and as it performs none of the operation of

injecting the vapor into the charge, it is closed at the ends and attached to the pipe in any suitable manner.

The size of the jacket, as well as of the conducting-pipe, may, of course, be varied according to the amount of hydrocarbon required, and the proper relative sizes will readily be
50 learned in practice.

The blast-pipe K enters the trunnion of the converter and injects the air through tuyeres in the usual manner. A pipe, L, having a
55 cock, M, connects the blast-pipe with the tank A, in order to equalize the pressure, and such tank is provided with a glass gage to indicate the quantity of hydrocarbon contained therein.

The operation of our device is as follows: Steam is admitted into the jacket H and oil allowed to flow into the pipe G. The oil in the pipe becomes vaporized, and in that form enters the blast-pipe and is carried with the
60 blast into the charge. The steam may be drawn off by the discharge-pipe I.

It will be understood that our device is applicable to other varieties of furnaces, the modification required to adapt it thereto being within the scope of our invention.

Having thus described our invention, we claim—

In combination with a receptacle for containing a charge of metal, and an air-blast
75 pipe connected therewith, a tank for containing fluid hydrocarbon, a conducting-pipe from said tank entering said blast-pipe, and a steam-jacket having closed ends, the hydrocarbon being vaporized by the steam in such closed
80 jacket, and, so vaporized, injected into the charge by the air-blast, as described and shown.

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