

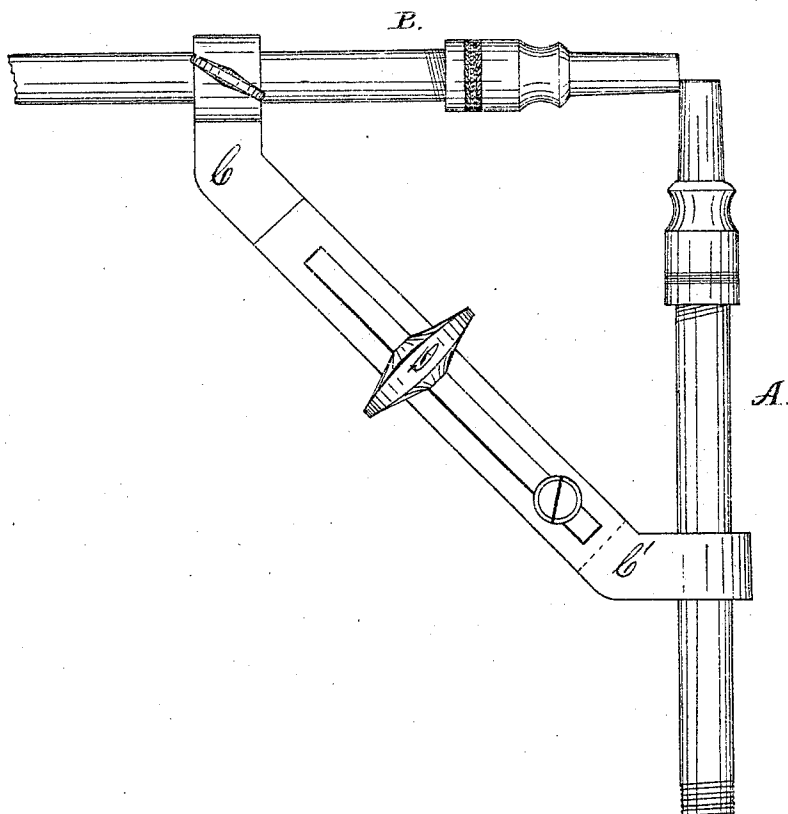
[77.]

JOSEPH KAY CALDWELL.

Improvement in Vaporizing Hydro-Carbons.

No. 118,903.

Patented Sep. 12, 1871.



Witnesses:

Chas. E. Plummer
Wm. Niedersheim.

Inventor:

Joseph Kay Caldwell
by Wm. Niedersheim
att'y.

Revised Revy. 6-18/81.

118,903

UNITED STATES PATENT OFFICE.

JOSEPH KAY CALDWELL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN APPARATUS FOR VAPORIZING HYDROCARBONS.

Specification forming part of Letters Patent No. 118,903, dated September 12, 1871.

To all whom it may concern.

Be it known that I, JOSEPH KAY CALDWELL, of the city and county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Vaporizing Hydrocarbons; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand and use the same, reference being had to the accompanying drawing making part of this specification, in which the figure is a side view of an arrangement of pipes that may be employed in carrying out my invention.

This invention consists in an arrangement of two or more pipes, adjustably connected together in such a manner that the passage of steam, heated or superheated, through one pipe produces a vacuum in the other pipe, by means of which oils of any gravity are drawn out, driven into a mist or spray, and, combining with the steam, formed into hydrocarbon vapor.

Referring to the drawing, A may represent the pipe for the passage of oil, and B the steam-pipe, both of which, respectively, communicate with suitable oil-receivers and steam-generators. These pipes are arranged with their jets or nozzles at or about at right angles to each other, and should be provided with proper valves, cocks, or equivalent means for the admission, adjustment, and shutting off of the supply of oil and steam. C C' are arms connected with the pipes, and are so constructed as to permit the pipes to be moved toward or from each other and be retained in position by a set-screw or other device.

The steam may be heated or superheated, and when admitted into its corresponding pipe its passage therethrough produces a vacuum in the other pipe. The oil is thus drawn out and driven into a mist or spray, combines with the steam, and is converted into hydrocarbon-vapor. The entire product of the oil being completely disintegrated by the pressure instantly and readily combines with the steam, furnished in proper quantities, thus forming hydrocarbon vapor, which will burn with an intense heat without smoke, cinders, or residuum of any kind whatsoever, thereby completely utilizing the carbon and other inflammable properties of the oil.

This invention also enables me to dispense with generators, which are expensive and apt to become clogged with the residuum of the oil.

By these means I produce a burning medium which can be introduced directly into the fire-chamber or box and there consumed.

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

The pipes A B, each provided with a nozzle, and connected together so as to be adjusted at any angle, and held in position by a set-screw or its equivalent, substantially as and for the purpose set forth.

The above signed by me this 11th day of August, 1871.

JOSEPH K. CALDWELL.

Witnesses:

JOHN A. WIEDERSHEIM,
THOS. CALDWELL.

(77.)