C. M. GEARING.

Stills for Hydro-Carbon Oils.

No. 212,084. Patented Feb. 4, 1879.

Fig. 1.

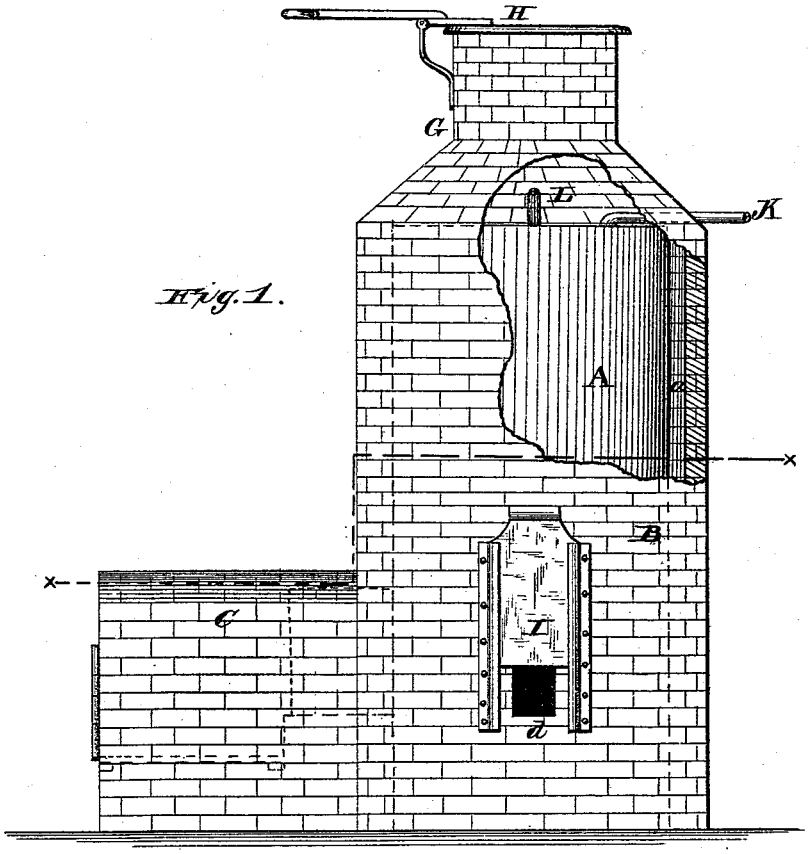
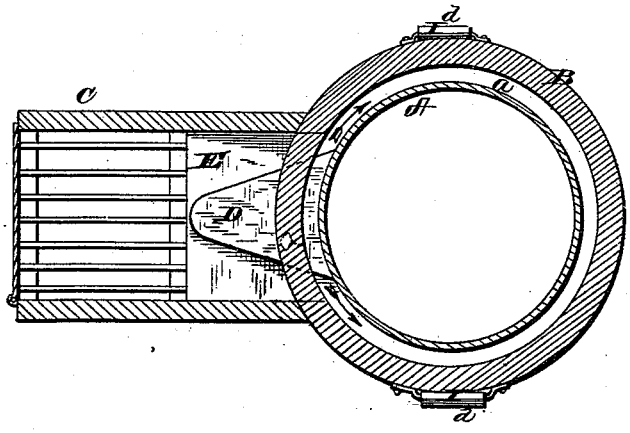


Fig. 2.



WITNESSES

Frank L. Ourand.

H. A. Toulmin

INVENTOR

Chas. M. Gearing

Alexander Mason

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES M. GEARING, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE NEVERGOLD, OF SAME PLACE.

IMPROVEMENT IN STILLS FOR HYDROCARBON OILS.

Specification forming part of Letters Patent No. **212,084**, dated February 4, 1879; application filed November 24, 1877.

To all whom it may concern:

Be it known that I, CHAS. M. GEARING, of Pittsburg, in the county of Allegheny, and in the State of Pennsylvania, have invented certain new and useful Improvements in Manufacture and Refining of Hydrocarbon Oils; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a still for distilling crude petroleum or other oils, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation of my improved still. Fig. 2 is a horizontal section on the line *x x*, Fig. 1.

A represents the still proper, made in cylindrical form and placed in an upright position, with a casing, B, of brick-work or masonry surrounding the same in such a manner as to form a chamber, *a*, entirely around the still. The bottom of the still rests on the brick-work, and is entirely covered thereby, so that the heat can under no circumstances reach the bottom of the still. On one side of the brick casing B is formed the furnace C, and over the bridge-wall E of this furnace is arranged a V-shaped deflector, D, which divides the flame and heat in such a manner as to envelop the still at a point above the bottom. From this point the heat and products of combustion pass upward around the still and out at the dome G above the casing. At the top of this dome is a valve or damper, H, arranged in such a manner that it can be adjusted to regulate the draft. In the lower portion of the casing B are one or more openings, *d*, with slides I, to regulate the admission of cold air.

In this construction of the still it will be noticed that the heat strikes the sides of the still, while the bottom is entirely protected; hence no residuum will be left in the bottom of the still, but all the material will be distilled and utilized.

In the stills now generally in use the heat is applied to the bottom of the still, and the formation of tar in the bottom of the still soon causes the bottom of the still to burn out, while this is entirely obviated in my invention.

The still is provided with an inlet-pipe, K, for supplying the still with the crude oil, and with an outlet-pipe, L, for the escape of the distilled oil.

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

The combination of the upright still A, with inlet and outlet pipes K L, the exterior casing B, furnace C, with V-shaped deflector D, and the dome G, with damper H, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of November, 1877.

CHAS. M. GEARING.

Witnesses:
FRANK GALT,
HARRY AUBREY TOULMIN.