B. F. SHERMAN.

Hydrocarbon Furnace.

No. 229,762. Patented July 6, 1880.

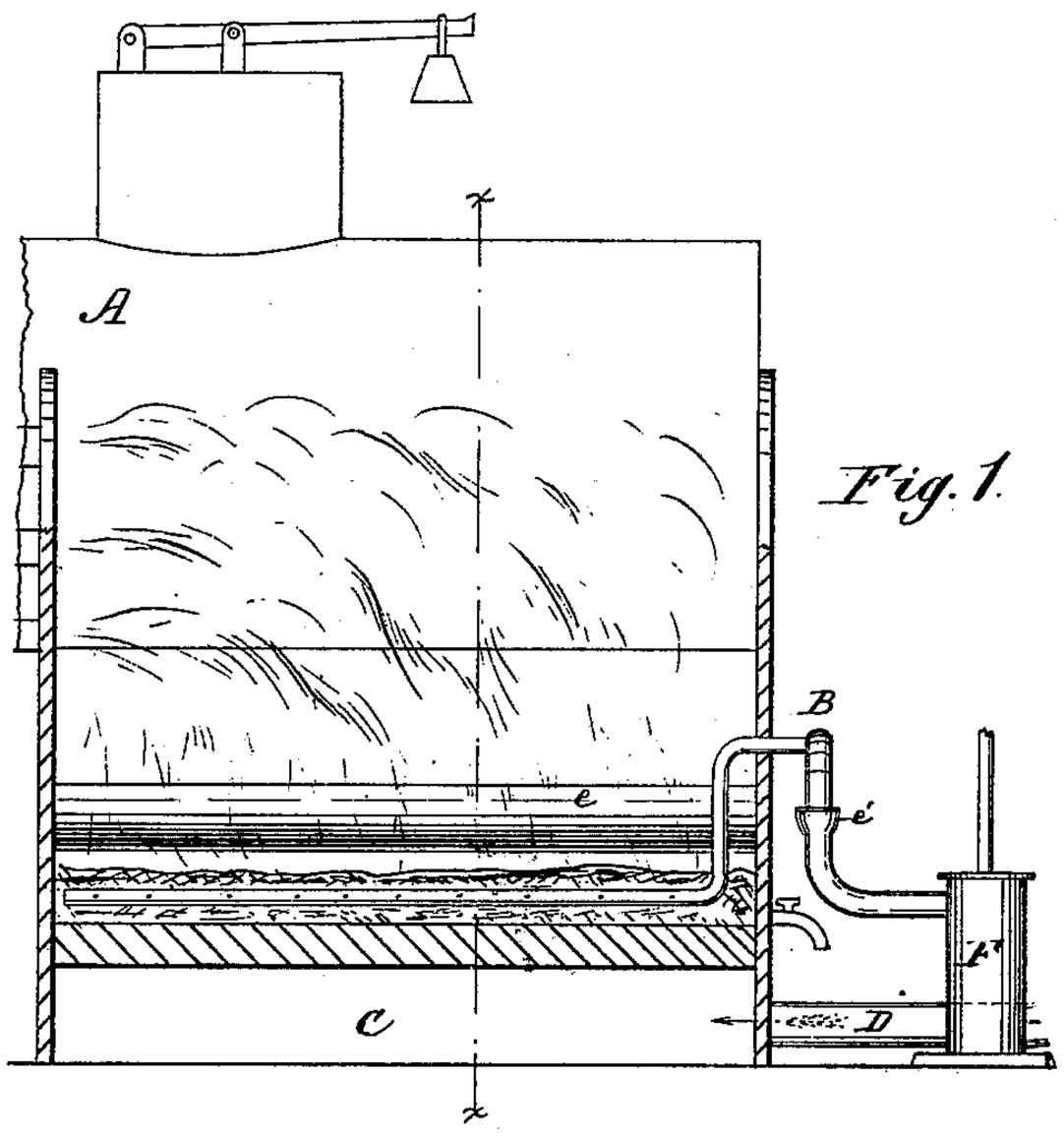
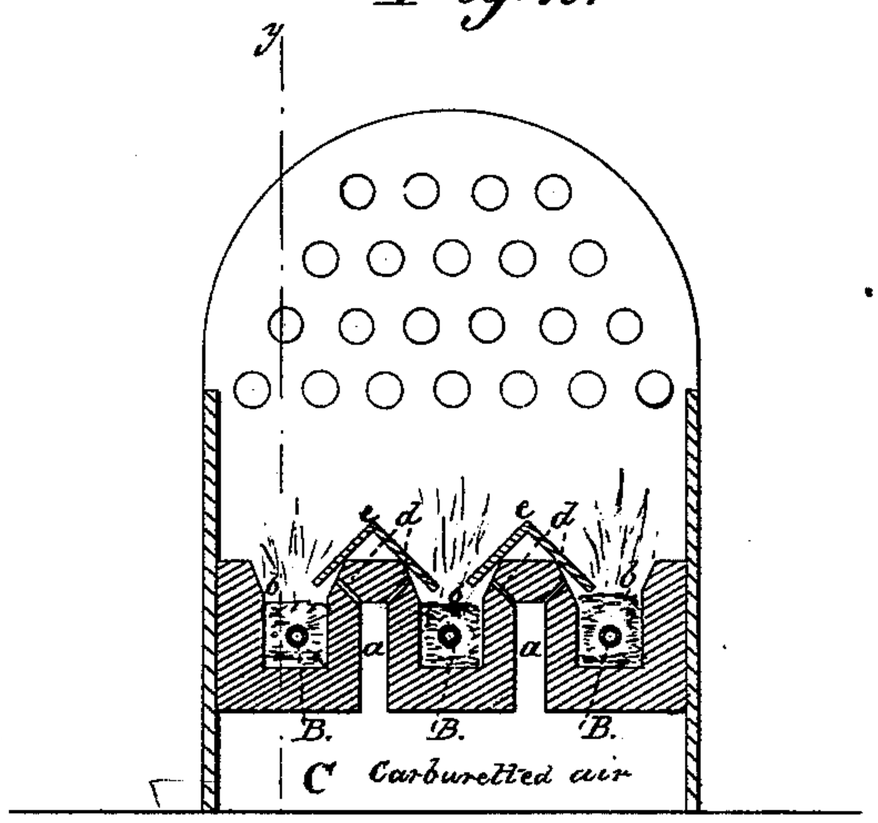


Fig. 1.

Fig. 2.



WITNESSES:

W. W. Hollingsworth

Edw. W. Byrn.

INVENTOR:

Benj. F. Sherman

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENJAMIN F. SHERMAN, OF BALLSTON SPA, NEW YORK.

HYDROCARBON-FURNACE.

SPECIFICATION forming part of Letters Patent No. 229,762, dated July 6, 1880.

Application filed August 29, 1879.

To all whom it may concern:

Be it known that I, BENJ. F. SHERMAN, of Ballston Spa, in the county of Saratoga and State of New York, have invented a new and Improved Hydrocarbon-Furnace; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section through plane *y y* of Fig. 2. Fig. 2 is a transverse vertical section of the fire-chamber through line *x x* of Fig. 1.

My invention relates to an improved construction of hydrocarbon-furnace; and it consists in a furnace having the bottom of its combustion-chamber made with a series of longitudinal pockets containing asbestus or analogous absorbent material, with perforated oil-pipes embedded therein, and with alternating air-chambers rising between said pockets and communicating below with the portion of the furnace corresponding to the ash-pit, the said air-chambers being perforated at the top and surmounted by inclined hoods or sheds, which deflect the currents of air down upon the surface of the saturated asbestus.

In the drawings, A represents the combustion-chamber of a steam-boiler furnace, the bottom of which is constructed with a series of longitudinal pockets, *b*, in which is placed a quantity of asbestus or other absorbent material. In these pockets, and embedded in the asbestus, are arranged the horizontal perforated oil-pipes B, communicating, through a pump, with a suitable supply of oil. Just between the pockets *b*, and opening into the air-space C below, are chambers *a*, which open through holes *d* into the combustion-chamber of the furnace. Just above said air-chambers, inside the furnace, are arranged also the V-shaped or double-inclined hoods *e*, whose function is to direct the blasts of air down upon the surface of the saturated asbestus.

The oil is forced into the pipe B by a pump, F, while the air is introduced under pressure from a blower through pipe D.

I am aware that it is not new in hydrocarbon-furnaces to employ a series of pockets filled with a mass of refractory material saturated with the oil, which pockets alternate with air-chambers which receive air at the bottom and discharge it at the top, where it combines with the gases evolved to effect combustion. I therefore do not claim these features, except when combined with the double-inclined hoods *e*, surmounting the air-chambers. These hoods have their sides or wings extending obliquely down into the asbestus-pockets, and by deflecting the air-currents down upon the surface of the asbestus contribute to the intimate mingling of the gases and produce a more active combustion. These hoods also, by covering the perforations in the top of the air-chambers, prevent them from becoming stopped up.

Having thus described my invention, what I claim as new is—

The hydrocarbon-furnace having elongated pockets *b*, opening into the combustion-chamber, alternating air-chambers *a*, opening into a compartment below the combustion-chamber, and also, through openings *d*, into the combustion-chamber, the horizontal perforated oil-pipes B, arranged in the pockets *b* and embedded in an absorbent material, as described, and the inclined hoods or sheds *e*, arranged above the air-inlets *d*, to direct the blast down upon the absorbent material in the pockets, all combined substantially as shown and described.

B. F. SHERMAN.

Witnesses:

EDWD. W. BYRN,

SOLON C. KEMON.