

H. S. SARONI.
No. 126,158.

Petroleum Forge or Blow-Pipe.
Patented April 30, 1872.

Fig. 1.

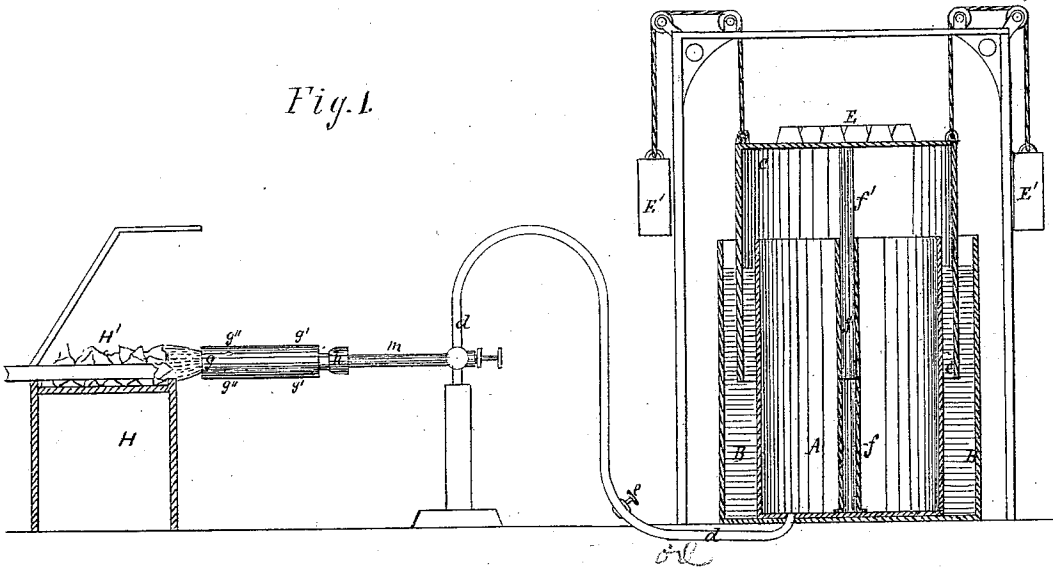
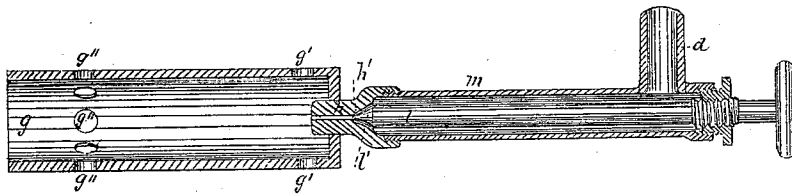


Fig. 2.



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IMPROVEMENT IN PETROLEUM-FORGES OR BLOW-PIPES.

Specification forming part of Letters Patent No. 126,158, dated April 30, 1872; antedated April 10, 1872.

Specification describing certain Improvements in Petroleum-Forges, invented by HERRMAN S. SARONI, of Cincinnati, in the county of Hamilton and State of Ohio.

The invention consists in a petroleum-forge, which is hereinafter fully described, and the peculiar features thereof subsequently pointed out in the claim.

Figure 1 of drawing represents a vertical and longitudinal section of my forge and all the parts connected therewith, including the air-compressing device. Fig. 2 is a longitudinal section of my vaporizer and combustion-chamber.

H is the forge-stand, provided with pumice-stone, fire-brick, soap-stone, asbestos, or other non-combustible material. With this the metal is surrounded while being heated, as is ordinarily and necessarily done in all coal or coke fires. In the same plane therewith is located a gas-burner, *g*, from which a flame is caused to impinge upon the artificial and non-combustible material H'. The gas-burner *g* is apertured at *g'* *g''*, as seen in Fig. 2. *h* is a vaporizer, having valve-seat *h'*. *l* is a valve-rod, having the valve *l'* to fit the said seat *h'*. *m* is a pipe leading from the vaporizer to a tube, *d*, and surrounding the valve-rod. The tube *d* is carried up to the bottom of a hydrocarbon-chamber, A, and is provided with a suitable stop-cock, *e*. The chamber A is surrounded by a water-jacket, B. C is an inverted chamber, whose sides surround chamber A, and are immersed in the water. *f* is a tubular guide to receive a guide-rod, *f'*, projecting from vessel C. E are weights, and E' counter-balance weights.

The mode of operation is as follows: The hydrocarbon liquid being caused to fill the chamber A, the vessel C is raised and some elastic fluid, as air or gas, brought into the chamber until a sufficient quantity is obtained to form an air-cushion. The chamber is then

allowed to rest in the water and upon the air-cushion until the necessary weight is applied to the chamber to expel the liquid through tube *d*. The cock *e* is then opened, when the liquid is expressed into tube *m* and against the closed valve *h'*. If the valve-rod is now withdrawn the liquid passes through the gas-generator *h* into the combustion-chamber *g*. The generator *h* or the combustion-chamber being heated, the hydrocarbon is evaporated as fast as it appears. Air entering at the apertures *g'* *g''*, combustion is produced immediately thereafter. This evolves from the mouth of the combustion-chamber *g* a projecting flame of intense heat, which plays constantly upon the pumice-stone H', and most effectually heats the metal covered by it.

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

1. The non-combustible material H', arranged on a forge-stand H, combined, as described, with a tubular gas-burning chamber, *g' g''*, aligned therewith and impinging a constant flame thereon, as and for the purpose specified.

2. The combination of hydrocarbon reservoir A, having discharge-pipe *d*, water-jacket B *f*, and vessel C G, constructed and applied as and for the purpose specified.

3. The combination, as described, of compressor C, reservoir A *f d*, water-jacket B, pipes *d m*, valved gas-generator *h h' l l'*, combustion-chamber and burner *g' g''*, and non-combustible material H in a suitable hearth, to form an improved petroleum or hydrocarbon forge, as set forth.

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