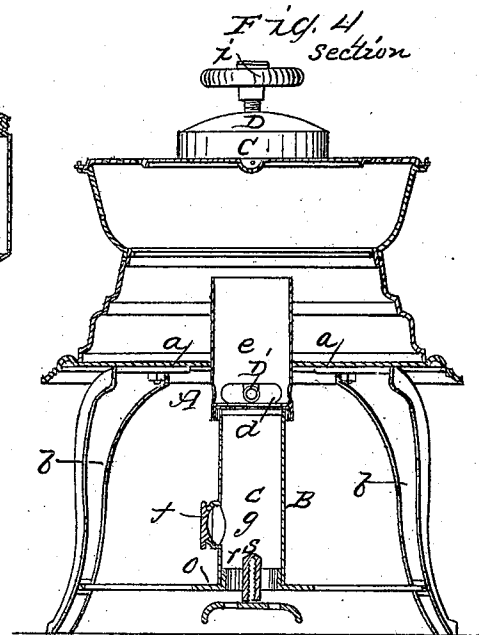
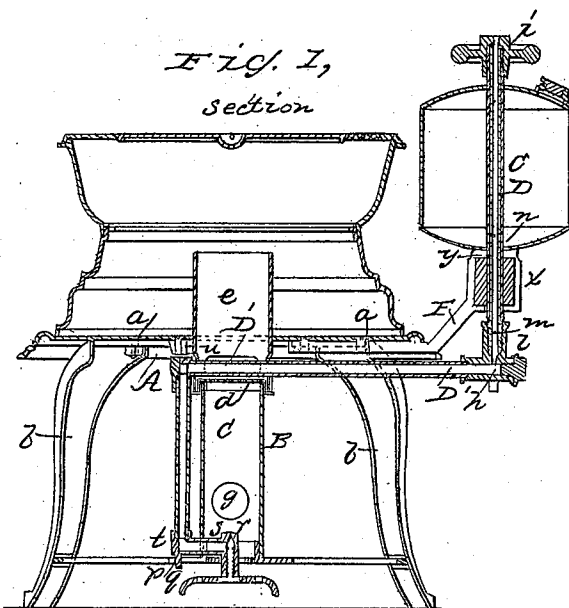
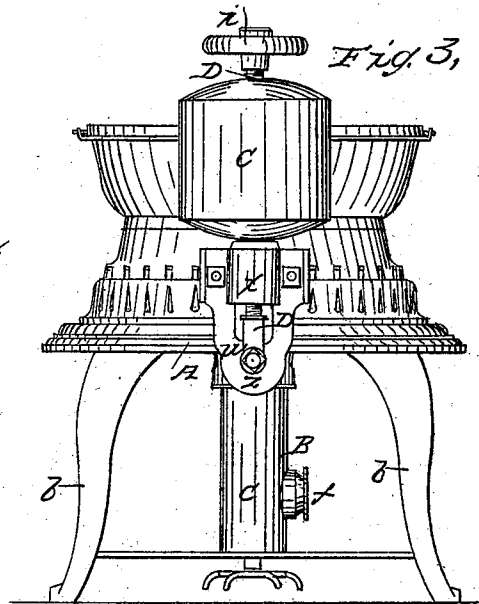
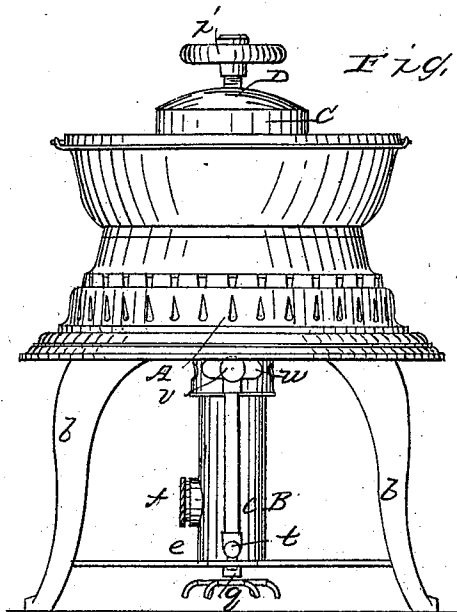


O. F. MORRILL

Vapor Stove.

No. 40,703.

Patented Nov. 24, 1863.



WITNESSES:
Frederick Curtis
Chas. P. Hale Jr

INVENTOR:
Oscar F. Morrill
per R. H. Eddy, Atty.

UNITED STATES PATENT OFFICE.

OSCAR F. MORRILL, OF CHELSEA, MASSACHUSETTS.

IMPROVEMENT IN VAPOR-BURNING COOKING-STOVES.

Specification forming part of Letters Patent No. 40,703, dated November 24, 1863.

To all whom it may concern:

Be it known that I, OSCAR F. MORRILL, a citizen of Chelsea, in the county of Suffolk and State of Massachusetts, have made a new and useful invention having reference to aerovapor-burners or apparatus for generating heat from a mixture of air and the vapor of a hydrocarbon; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a longitudinal and vertical section of such apparatus. Figs. 2 and 3 are end elevations, and Fig. 4 is a transverse and vertical section, of it.

In the said drawings, A represents a stand, which consists of a circular disk or platform or table, *a*, and a suitable number of legs, *b b*, extending therefrom. Within this stand there is arranged an aerovapor-burner, B, which consists not only of a tube, *c*, (open at its lower end,) but of a foraminous plate or wire-gauze diaphragm, *d*, over which there is a perforated chimney, *e*, which extends upward and concentrically through the part *a*, and rises above it, as shown in Figs. 1 and 4. Raised some distance above the said stand A is a reservoir or close vessel, C, for holding "petroleum-naphtha," or "carbon-spirits," or any other liquid easily vaporizable and combustible, the said vessel C being supported by a conduit or tube, D, which not only passes entirely through and extends a short distance above the said vessel, but also projects downward from it toward the stand A and through an insulator or block of wood, E, (or some other suitable non-conductor of heat,) held in place not only by means of an arm or projection, F, fastened to and extended from the said stand, but by a cap, *x*, secured to the arm by screws and nuts. The arm and its cap constitute a clamp for holding the insulator, they or the cap being provided with a projection, *y*, extending from the cap, and over and on the top of the arm, and clasping the conduit D. Furthermore, a hanger or stirrup, *z*, extends downward from the clamp or its cap and receives and supports the elbow-joint *w* of the horizontal part D' of the conduit. The said horizontal part D' of the conduit passes directly over the burner and through its chimney, and has another elbow-joint, *v*, which goes through a

steadying-fork or notched projection, *u*, projecting downward from the stand. From the elbow-joint *v* the conduit passes vertically downward, and by means of a third elbow-joint, *t*, it is turned horizontally into the lower part of the burner, where it is furnished with a jet-tube, *s*, provided with an adjustable valve, *r*, the whole being as shown in Fig. 1. From the elbow *t* a tenon, *q*, projects, and enters a corresponding mortise, *p*, formed in the connecting-cross *o* of the stand. While the hanger prevents the conduit from becoming depressed when within the insulator, the notched projection *u* and the tenon and mortise serve to maintain the conduit in its proper position in other respects with regard to the burner. That part of the conduit which is within the reservoir is furnished with one or more openings, *n*, for the passage of the fluid from the said reservoir, and into the conduit, as well as for other purposes. The elbow-joint *w* of the conduit has a valve-seat, *m*, and also a conical valve, *l*, which is formed on the lower part of a rod, *k*, placed within the conduit, as shown in Fig. 1. This rod has a hand-wheel, *i*, on its upper end. The hub of the hand-wheel screws on the upper part of the conduit and serves as a cap therefor. From the valve-rod, and below its valve, there is a tapering projection or clearer, *h*, which goes down through the valve-opening and serves to prevent it from becoming clogged by deposits from the material or fluid of the reservoir while the apparatus may be in use. Furthermore, the burner, or the mixer or tube *c* of such burner, has a lateral port, *g*, provided with a screw-cap or cover, *f*, the said port being so arranged as to enable a person to readily gain access through it to the top of the jet of the conduit for the purpose of clearing it of any matter which may collect either on or in it.

The principal portions of the above-described apparatus—viz., the stand, the burner, the conduit, its valves, and reservoir—are not new, they being described in the specifications of some one or more patents which have been granted to me. My present invention or improvements are exhibited as applied to such portions, or to parts connected to or necessarily operating with them.

I have found much difficulty in properly supporting and adjusting the conduit and prevent-

ing it from getting out of place; and, furthermore, I have found in practice that deposits collect in the valve-passages, as well as either on or in the jet-tube, by which the vapor formed in the conduit by the heat of the burner is discharged into the burner. To obviate these difficulties I have added to the aerovapor apparatus sundry improvements, as hereinbefore described, and therefore

What I claim as such and of my invention is as follows—that is to say—

1. The insulator-clamp as constructed or provided with the projection *y*, and with the hanger or stirrup *z*, they being for the purposes as specified.

2. The combination of the clearer *h*, as above

described, with the conduit-valve and its seat-passage.

3. The improved burner, as made or provided with the lateral clearing-port *g*, and with a cap or cover, *f*, therefor, the same being arranged with respect to the jet-tube of the conduit, substantially in manner and for the purpose as described.

4. The combination of the steadying-fork or notched projection *u* and the tenon *q* and its mortise *p* with the conduit and the supporting-stand.

OSCAR F. MORRILL.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.