

(No Model.)

A. S. DINSMORE.

OIL STOVE.

No. 264,866.

Patented Sept. 26, 1882.

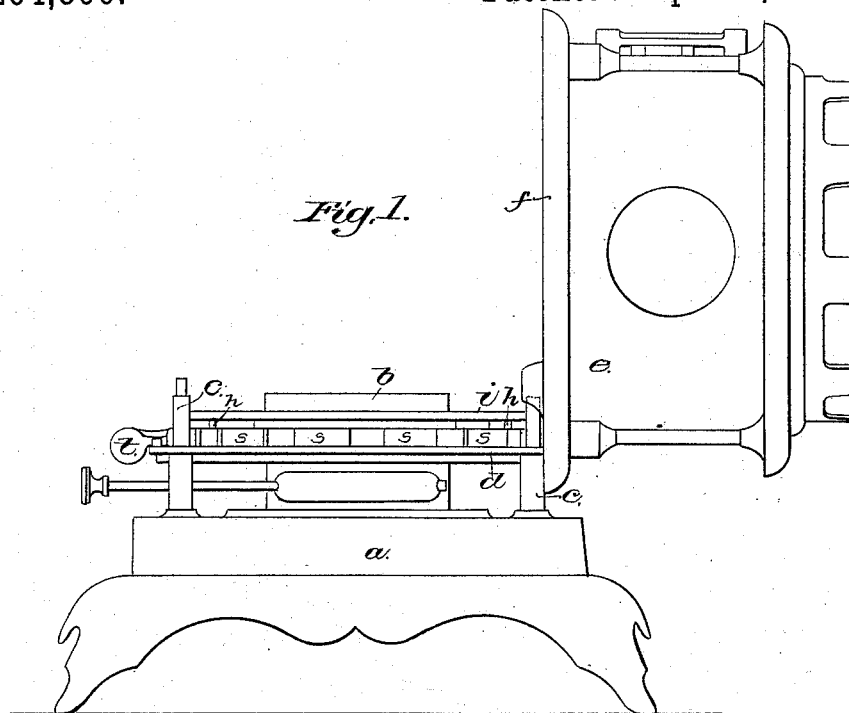


Fig. 2.

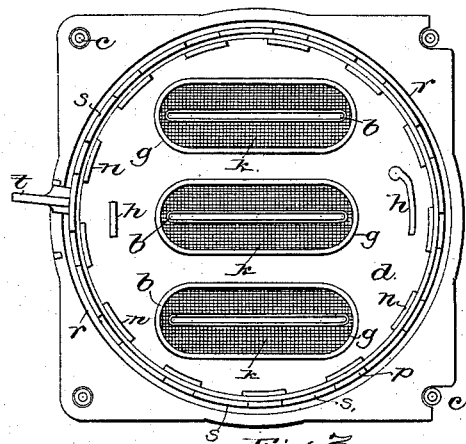
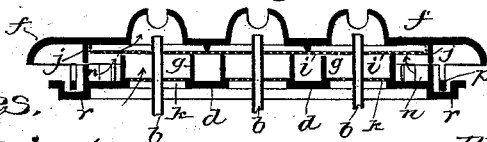


Fig. 3.



Witnesses,
John F. C. Printz
Fred A. Powell.

Inventor:
Alfred S. Dinsmore
by Crosby & Gregory
attys.

UNITED STATES PATENT OFFICE.

ALFRED S. DINSMORE, OF BOSTON, MASSACHUSETTS.

OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 264,866, dated September 26, 1882.

Application filed July 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALFRED S. DINSMORE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Oil-Stoves, of which the following description, in connection with the accompanying drawings, is a specification.

My invention, relating to oil-stoves, has for its object to enable the operation of the stove to be regulated according to the circumstances or varying atmospheric conditions in which it may be burning.

The simplest and most efficient oil-stoves all consist essentially of a base which forms a support for the parts above it and also comprises a reservoir or receptacle from which the oil to be burned is supplied to the wicks. The wick-tubes arise from the said receptacle and enter the under side of what may be termed the "stove-body," which forms or comprises the chimneys, in which the flames burn and by which the said flames are protected and their heat conveyed to the cooking utensils. The stove-body is supported above the said base and the air for the flame passes in laterally through the space above the top of the oil-receptacle and below the stove-body, and its passage is in all stoves of this general construction interrupted by gauze or perforated metal plates. When, however, a stove of this construction is burned in a strong current of air too much air is supplied to the flame, thus rendering the combustion imperfect, cooling the stove, and greatly disturbing the flame or causing it to flicker.

My invention consists in providing the stove with a damper controlling the space between the base and stove-body through which the air passes to the flame, the said damper being constructed to provide sufficient air when wide open for proper combustion in a quiet atmosphere, and when closed wholly cutting off or breaking up the direct passage of violent air-currents to the flame. The said damper is closed when the stove is operating in a strong air-current or wind, and a sufficient amount of air passes through the small cracks or spaces to feed the flame, but arrives at the said flame with comparative quietness, so as not to disturb it or cause it to flicker.

The invention is shown in this instance as embodied in a stove substantially such as de-

scribed in Letters Patent No. 176,609, dated April 25, 1876, having an oil-reservoir at its base, a stove-body or series of chimneys or flues supported on pillars arising from the said base, and wick-tubes passing from the said oil-reservoir to the under side of the stove-body through what is called an "insulating-plate," it being a horizontal partition in the spaces between the top of the oil-reservoir and bottom of the stove-body, by which the oil-reservoir is protected from the heat of the flame radiating downward. The said insulating-plate is substantially parallel with the bottom plate of the stove-body, and in this construction the main portion of the air passes in laterally between the said insulating-plate and stove-body, and thence upward to the flames through a perforated plate at the bottom of the said stove-body. I have in this instance of my invention provided the insulating-plate with an annular damper controlling the passage of air through the space between the said plate and the bottom of the stove-body. The insulating-plate is provided with upwardly-projecting tubular passages around the wick-tubes, through which an upward current of air can pass from beneath the insulating-plate to the flame, and I have provided the space between the wick-tube and the surrounding portion of the insulating-plate with a perforated diaphragm by which the upward current of air is broken and its violence reduced.

Figure 1 is a side elevation of an oil-stove embodying this invention, the stove-body being shown as turned back from its operative position to expose the wick-tubes and other parts below the said stove-body. Fig. 2 is a plan view of the parts below the said stove-body, which is removed from its supporting-pillars; and Fig. 3, a transverse vertical section of the lower portion of the stove-body and the wick-tubes and insulating-plate.

The oil-reservoir *a*, forming the base of the entire apparatus and provided with wick-tubes *b*, and sustaining-pillars *c*, to receive the insulating-plate *d*, and the stove-top *e*, may be of any usual construction, they being shown substantially as in the patent hereinbefore referred to. The insulating-plate *d* is notched and provided with holes to enable it to be engaged and supported by the pillars *c* between the oil-reservoir *a* and the bottom or base plate, *f*, of

the stove-top *e*, as shown in Letters Patent No. 260,461, granted to me July 4, 1882. The said insulating-plate *d* is provided with upwardly-projecting tubular portions *g* around the wick-tubes *b*, and with lugs *h*, upon which the perforated plate *i* is supported, as in the said patents referred to, it forming a horizontal foraminous partition, through which the wick-tubes pass, and through which the air is compelled to pass on its way to the flames at the ends of the said wick-tubes. A downwardly-extended annular flange, *j*, from the bottom or base piece, *f*, of the stove-body *e* surrounds the said perforated plate *i*, so that the air that arrives at the flame at the top of the wick-tubes *b* has to pass through the perforations of the said plate, it entering below the bottom piece, *f*, of the stove-body, as shown by the arrows, Fig. 3. The air thus supplied in the stoves heretofore constructed has a free passage laterally between the insulating-plate *d* and perforated plate *i*, and also upwardly through the tubular projections *g* of the insulating-plates.

In the present invention the lower end of the upwardly-projecting tubes *g* is closed by perforated diaphragms *k* to break up and reduce the flow of the upward currents of air through the said spaces to the under side of the plate *i*. The insulating-plate *d* is also provided with an annular series of upward projections *n*, extending to the flange *j* of the bottom plate, *f*, of the stove-body, thus forming a broken partition, through the spaces of which the air must pass to arrive beneath the perforated plate *i*, so as to pass upward therethrough to feed the flame at the end of the wick-tubes. The amount of opening in the said partition is controlled by an annular damper, *p*, in an annular groove, *r*, of the insulating-plate *d*, the said damper having a series of projections, *s*, which may be made to register with and close the space between the projections *n*, or to register with the said projections themselves, thus leaving the said spaces open, by a slight rotary movement of the said damper, which is provided with a handle, *t*. By means of this damper the amount of air supplied to the flame can be regulated with great nicety, the said damper being opened to permit the air to be drawn in by the rising current of heated air, in the usual manner, in a still atmosphere, and being partly or wholly closed to prevent too much air being forced in by violent outside currents.

If desired, the spaces around the wick-tubes between them and the insulating-plate may also be positively controlled by dampers; but the diaphragm *k*, in connection with the dampers *p*, will usually be sufficient to insure proper operation of the stove under any circumstances with which it is likely to be surrounded.

I am aware that oil-stoves have been made

in which the entire oil-reservoir is inclosed in a tight case extending down from the stove-body, so that no air is admitted directly through the space between the top of the base and bottom of the stove-body. In such construction the air is admitted to the said case below the oil-reservoir and the inlet passage has been controlled by a damper or register. Such construction is inconvenient and expensive, and the oil-reservoir is exposed to the direct heat of the flame.

The present invention is not limited to the precise construction and arrangement of the parts shown, the essential feature of the invention being the employment of a damper properly located to control the passage of air between the stove-body and the top of the oil-receptacle or base above which the said stove-body is supported.

I claim—

1. The supporting-base comprising an oil-reservoir provided with wick-tubes, and the stove-body supported above the said base, affording a space for the passage of air between the top of the said oil-reservoir and the under side of the said stove-body to the ends of the wick-tubes, combined with a damper located in the said space between the base and the stove-body, whereby the passage of air through the said space to the flame may be regulated, substantially as described.

2. In an oil-stove, the combination of the oil-reservoir provided with wick-tubes, and the insulating-plate and stove-body, of perforated diaphragms between the wick-tubes and insulating-plate, and a damper controlling the passage of air between the said insulating-plate and stove-body substantially as described.

3. In an oil-stove, the combination of the oil-reservoir and stove-body with the insulating-plate between them, provided with a series of projections forming a broken annular partition, and the damper controlling the openings in the said partition, substantially as described.

4. The oil-receptacle provided with wick-tubes, and the stove-body supported above it, combined with a foraminous partition surrounding the said wick-tubes at the under side of the stove-body, and a damper, whereby the passage of air through the space between the oil-receptacle and the stove-body to the under side of the said foraminous partition is regulated, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED S. DINSMORE.

Witnesses:

JOS. P. LIVERMORE,
FRED A. POWELL.