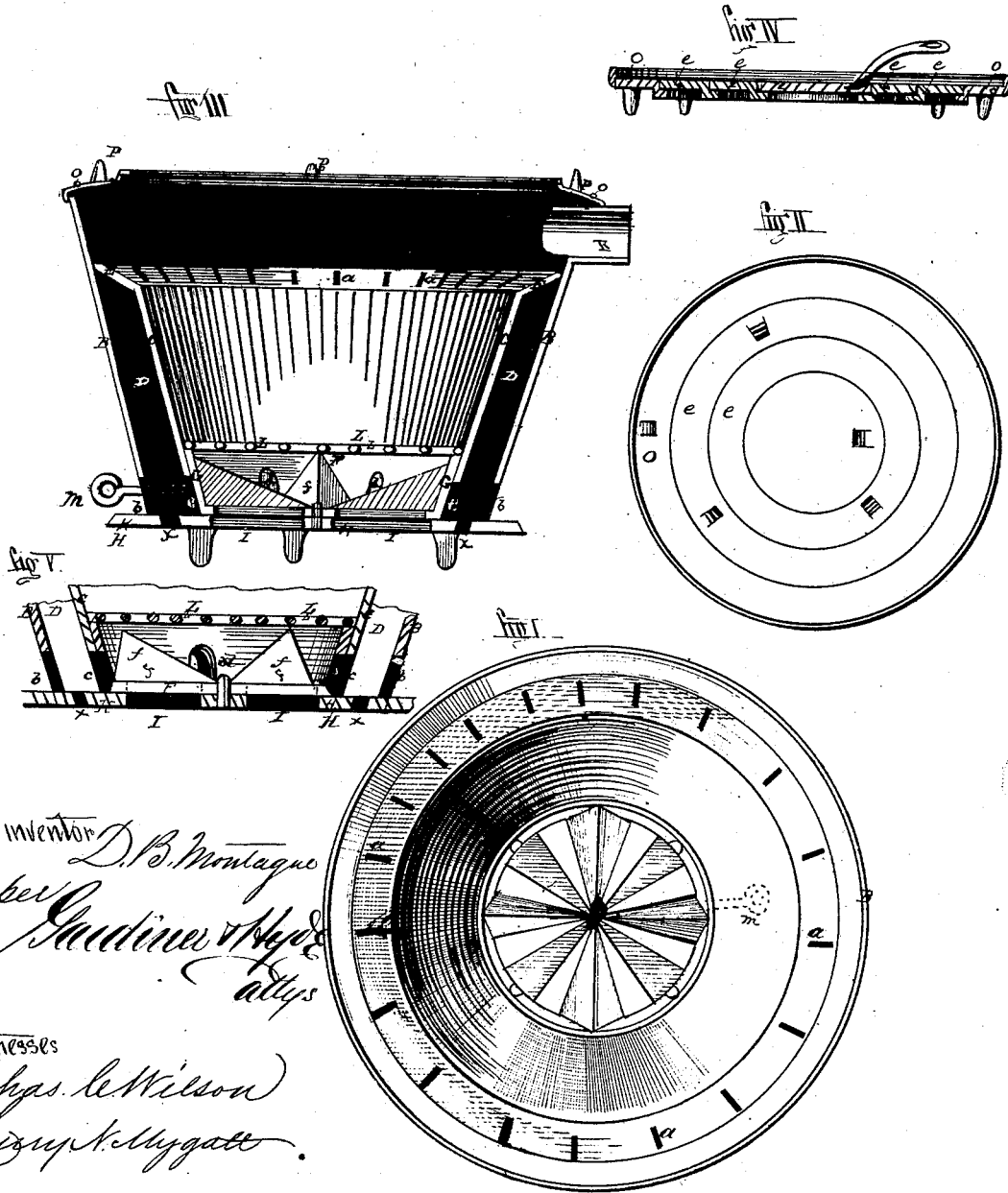


D. B. MONTAGUE.

Portable Furnace.

No. 112,164.

Patented Feb 28, 1871.



UNITED STATES PATENT OFFICE.

DWIGHT B. MONTAGUE, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN PORTABLE FURNACES.

Specification forming part of Letters Patent No. **112,164**, dated February 28, 1871.

To all whom it may concern:

Be it known that I, DWIGHT B. MONTAGUE, of Springfield, Hampden county, State of Massachusetts, have invented a new and useful Improved Furnace for Outdoor Work, or to be used with a stove; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

Drawing.

Figure I is a top view; Fig. II, a top view without cover or grate; Fig. III, a side sectional view. Figs. IV and V are detail views of my improved furnace.

My invention relates to forming, combining, and arranging the parts of a furnace so that they will occupy little space, while by varying the positions or removing some of the parts the furnace may be used for different purposes; and the object of my invention is to construct a furnace that will be easily portable by hand, and will answer all the purposes of an outdoor furnace, complete in itself, or form a useful part of a stove indoors.

The object of my improvements is to produce a perfect furnace for outdoor work, or to be used with or as a stove, accomplishing nearly all the results of a stove in cooking or heating, with far less expenditure of fuel.

In construction I form my furnace with double walls, the one B' forming the outer shell, and the one C an inner one and the fire-box, a space, D, being left between them entirely around the furnace. The wall C does not reach as high as the one B; but a flange, E, is made to connect them and form a top for the chamber B. This flange is perforated with holes A, to admit the draft on certain occasions, as will be hereafter described.

A double-acting gate, F, at the bottom of the fire-box serves to change the direction of the draft to suit the manner in which the furnace is used.

When the device is used upon a stove, as shown in Fig. III, the lower part fitting over the stove-hole, the draft must be carried through the bottom of the furnace from the top of the fire-box, or, in other words, be made

to draw downward and into the stove. When, however, the furnace is used independently, the draft comes up through the bottom, as in ordinary cases; and when the furnace is used upon a stove, and it is yet desired to use it as an independent burner, the draft comes in at the bottom of the furnace, but above the gate F, which is shut off.

In order to accomplish these several results, I construct ports *b* in the outer shell, B, near the bottom, corresponding ports *c* in the lower part of the inner wall, C, and form my gate F with a side flange, G, fitting the lower part of the wall C' inside. This flange G has ports *d*, corresponding with the ones *c* in the wall C.

The gate F is pivoted in the center to the bottom H of the furnace, and each has corresponding radial openings I.

When the gate is in a position such as shown in Fig. I, in which the openings of the gate and bottom of the furnace are opposite each other, so that there is free vent through both, the ports in the flange G are shut off, so that the draft must go up through the fire-box and out of the top, as in ordinary furnaces, or out of the flue, if one is used. The gate F is turned so as to shut off the openings I at the bottom, the ports in the flange G are open, and the air can come directly into the bottom of the furnace above the gate; and if it is used upon a stove the draft passes up through the fire-box, through the openings *a*, down through the space D, and out of the ports *x* into the stove.

When the furnace is set upon its legs, either way of setting the gate produces the result of admitting the draft up through the bottom.

A flue, K, is formed near the top of the furnace and above the flange E, so that the furnace may be used with a pipe and regular draft, if desired.

The gate F is formed with the angular-shaped projections *f f*, &c., which serve to clean off the ashes and force them through the bottom openings, I, each time that the gate is turned, thus making it an easy matter to keep the furnace free.

The grate L is attached to the top of the flange G of the gate, and consequently, when the gate is turned back and forth rapidly by

means of the lever M, attached to it and projecting outside, the ashes are completely sifted out through the bottom.

A cover is made for the furnace in such a manner that it will contain various sizes of holes, thus adapting the furnace to the various sizes of utensils belonging to the establishment it is adopted in. This is shown in Figs. III and IV, where it is seen that the top is composed of a number of rings, *e e e*, each smaller one fitting in the one outside of it, the inner edges of each ring being formed with a shoulder, so that the edges of the next smaller plate set into it. The outside ring, *o*, is provided with a rim, which sets over and around the top edge of the furnace when the plate *o* is reversed, as shown in Fig. II. This ring, as are others, if desired, is provided with teats *p p*, which, when the ring is inserted, serve to set bakers' and other utensils upon, allowing a draft to circulate under them.

The furnace thus constructed forms a neat

and effective device for the purpose, easily handled, and adapting itself to almost any size of utensil.

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

1. The combination of the outer case, B, inner shell, C, openings I at the bottom, openings *b* at the side, ports *x* at the bottom, space D, and gate F with flange G and ports *d*, the parts being all constructed and arranged together as described.

2. The cover formed of a number of rings fitting into each other, when provided with teats *p p*, as described.

3. In combination with the gate F, the triangular projections *f f*, as described.

D. B. MONTAGUE.

Witnesses:

E. H. HYDE,
R. F. HYDE.