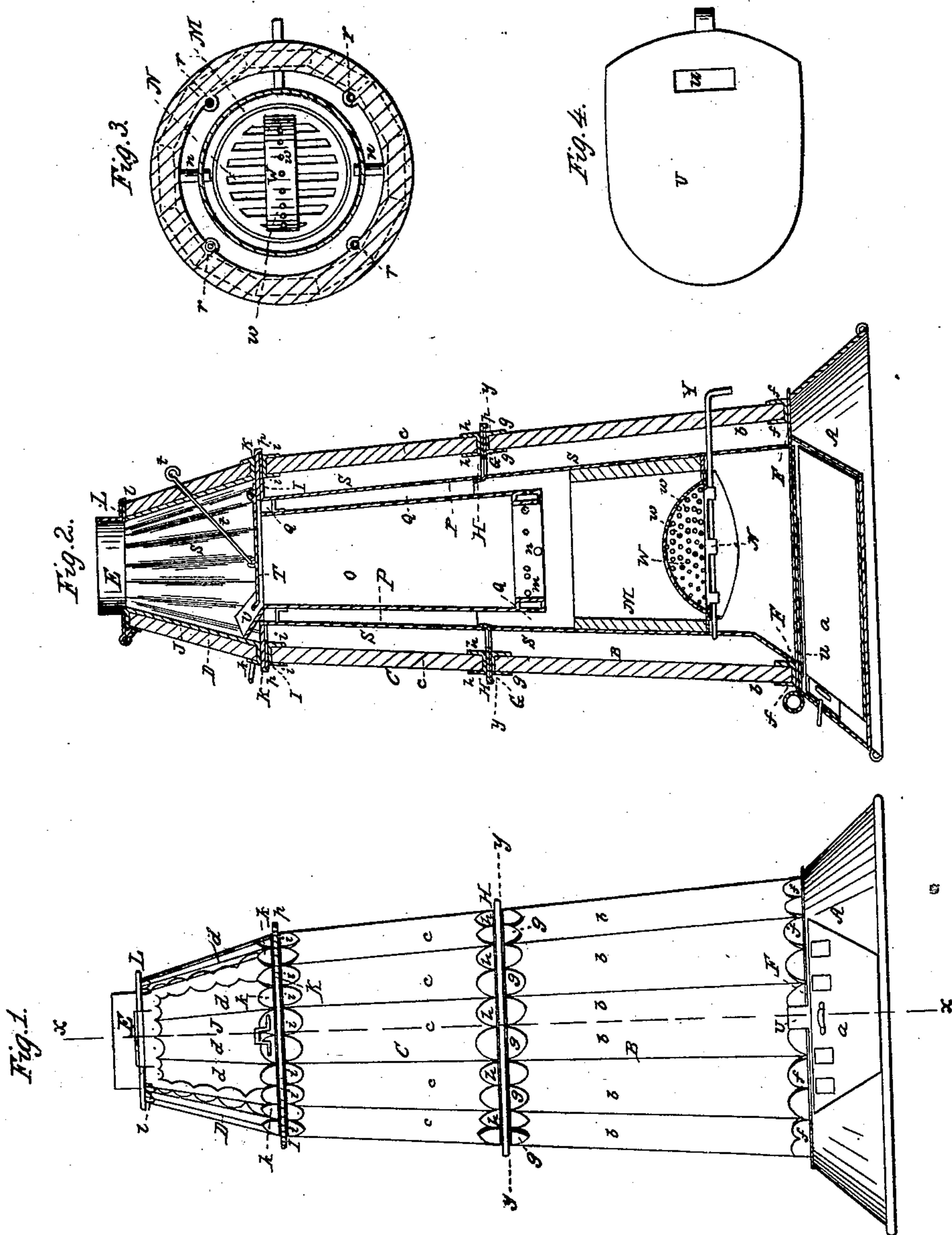


W. WHEELER.

Stove.

No. 37,416.

Patented Jan'y 13, 1863.



Witnesses:
 J. C. Day
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Inventor:
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 By his atty
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UNITED STATES PATENT OFFICE.

WILLIAM WHEELER, OF POULTNEY, VERMONT, ASSIGNOR TO HIMSELF
AND JOSHUA POOR.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. 37,416, dated January 13, 1863.

To all whom it may concern:

Be it known that I, WILLIAM WHEELER, of Poultney, in the county of Rutland and State of Vermont, have invented a new and Improved Heating-Stove; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a front elevation of the stove complete; Fig. 2, a central vertical section thereof in the plane indicated by the line *x x*, Fig. 1; Fig. 3, a horizontal section in the plane indicated by the line *y y*, Figs. 1 and 2; Fig. 4, a plan of a part detached.

Like letters designate corresponding parts in all of the figures.

The main object of my invention is to produce a stove whose radiating-surface shall not receive intense heat directly from the furnace, and which surface shall be composed of soapstone, or other equivalent slowly-radiating substance, so as to further temper the heat given out, and, at the same time, to render the stove perfectly convenient and superior in other respects, as well as of elegant appearance.

The accompanying drawings represent the substantial features of the invention, although the stove may be varied therefrom in many non-essential respects. The base A has nothing peculiar in construction, except in being provided with a flange-plate, F, with double sets of flanges *f f*, the use of which will be presently specified. It has an ash-pan, *a*, of ordinary construction, and a slide, U, which is inserted just over the ash-pan, to shield it from too great heat, and to keep up the ashes and cinders when cleaning out the ash-pan. It has a draft-hole, *u*, through it, but not directly under the grate N. The main body of the stove is made in sections B C D, each separable from the others. The lower section, B, is ordinarily constructed with or permanently attached to the base A, but may be separable from it. Each section B C D with its appendages is distinct and complete in its construction, and may be handled or transported separately, but the adjacent and corresponding parts of the sections fit each other when united, so as together to compose a firm and completely joined whole. I design each section to have an outside radiating-case, of

soapstone or other equivalent slowly-conducting and evenly-tempering heat-radiator, and within this radiating-case, around the furnace and its appendages, to have an inclosed space to hold the air directly heated by the furnace. To construct this case conveniently and cheaply and in sections, for the purposes specified, I form the soapstone into staves of the proper sizes and shapes, respectively, to compose the several sections as desired, and the staves are secured together substantially as follows: The sections are made of polygonal form, there being as many sides (twelve shown in the drawings) as desired, each stove forming one side in each section. To construct the lower section, B, there is a flange-plate, F, forming a part of or attached to the base A, and provided with double or inside and outside sets of flanges, *f f*, which project upward, and are arranged parallel with one another, respectively, in a polygonal form, substantially as shown in the drawings, so as to receive between them the lower ends of the staves *b b* of the section, and hold them exactly in place. A similar flange-plate, G, with double sets of parallel flanges *g g*, arranged in polygonal positions and projecting downward, receives and retains the upper ends of the soapstone staves *b b*. Then the two flange-plates F G are connected by rods *r r r*, Fig. 3, extending down through both and secured by nuts screwed on the ends thereof in the usual manner; or any other suitable means of uniting the parts of the section may be employed. The second section, C, has also a flange-plate, H, with double sets of flanges *h h*, to receive the lower ends of the soapstone staves *c c* of the section, and a flange-plate, I, with double sets of flanges *i i*, to receive the upper ends of the said staves, and the two flange-plates are in like manner connected by rods, as in section B, and nuts screwed thereon. The upper section, D, is also constructed in a similar manner, with lower flange-plate, K, having flanges *k k*, and upper flange-plate, L, having flanges *l l*, to receive, respectively, the lower and upper ends of the staves *d d*, composing the section, both flange-plates being connected by rods (not shown) and nuts, as before. The flange-plates and flanges may be made of any suitable metal or material, and have any desirable form, plain or ornamental. Each of the sections B C D has inside at-

tached to it a certain portion of the furnace and its adjuncts, as its proper and distinct appendage, for separate handling. Thus the lower section, B, has permanently attached concentrically within it the furnace M, with its grate N. The furnace is generally also secured on the base A, and its construction is not peculiar in this stove. It has the usual soapstone or fire-brick lining for burning coal. The second section, C, has constructed or secured within it a concentric feeding-cylinder, O, and an outer cylinder, P, concentric with the feeding-cylinder. This outer cylinder connects with the top of the furnace M, when the sections of the stove are united, substantially as shown in Fig. 2, and may be called the "flue-cylinder," since it forms an annular flue-space, Q, entirely around the feeding cylinder O, for conducting the products of combustion upward from the furnace and for communicating heat equally to all sides around it. The top of the feeding-cylinder O is closed tight by a door or cover, T, to be raised, at pleasure, by a rod, *t*, or otherwise, when the fuel is to be turned into the feeding-cylinder. The lower end of the feeding-cylinder O reaches down into the top of the furnace M a little distance, and is provided with an annular air-chamber, *m*, which is continually supplied with air from without through a tube or tubes, *n*, and delivers it again into the inside of the feeding-tube through several small apertures *o o o*, as seen in Fig. 2. The object of this air-chamber, with its circulation of fresh cool air through it, is both to keep the temperature of the lower end of the feeding-cylinder (where it is exposed to intense heat) reduced to a comparatively low degree, and thereby prevent rapid destruction, and also to furnish oxygen to complete the combustion just where the gases generated would otherwise escape into the flue space unconsumed. The feeding-cylinder may be kept filled with fuel, which will not be consumed above the air-chamber *m*, because there can be no oxygen supplied there to support the combustion. The upper section, D, composes the cap of the stove, and has as its appendages the door J, through which the fuel is supplied to the feeding-cylinder O, and the smoke-pipe E, which conveys away the products of combustion from the flue-space Q, with which it communicates. It is made more or less pyramidal, the upper end being truncated for convenience of construction, and to furnish a place for the smoke-pipe to be readily applied. It also has a chute, *v*, to convey the coal from the door to the feeding-cylinder. The other sections, B C, may also taper slightly upward, as shown, for elegance of form. When the sections are secured together to form the

complete stove by lips *p p p* on the edge of the lower flange-plates of one section fitting over the upper flange-plate of the next lower section, or by any other convenient means, it will be seen that the stove thus constructed has the furnace and all its appendages entirely internal and separated from the soapstone case, there being an annular inclosed space, S, all around between said case and the furnace and flue. Thus the air, intensely heated by the furnace, is confined in the space S, and only heats the slowly-conducting soapstone of the case, which, in turn, yields only a uniform and softly tempered heat to the air of the room, a heat the most comfortable, the most agreeable, and the most healthful known. I locate over the middle of the grate N a chamber, W, of the form shown, or any other which may be suitable, and provided with numerous small perforations *w w* through its case. The object of this is to furnish air more freely to the middle of the coal in the furnace, and by being moved laterally together with the grate N by the handle V, or otherwise, when the grate is tilted, it enables the crust, formed on the top of bituminous coal in burning, to be broken up at any time. The door J, in the upper section of the stove, is also made of soapstone staves, inserted into a flange-plate surrounding it. This door is best hinged at the top, substantially as shown.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The soapstone or other equivalent slowly-conducting radiating-case, combined with an interior furnace and a close air space, S, which is next to and immediately surrounds the furnace and its flue, substantially as and for the purpose herein specified.

2. The slide U, with draft aperture *u*, between the grate and ash-pan, substantially as and for the purposes set forth.

3. The perforated chamber W, when attached to and used in combination with a tilting grate, N, so as to receive a lateral vibratory motion therefrom, and thereby serve the additional purpose of breaking the coal-crust at the top, substantially as specified.

4. The double flanged flange-plates F G H, I K L, constructed and arranged substantially as described, in combination with the soapstone staves, for the purpose specified.

5. The combination of the annular flue Q with the annular dead-air space S, and slowly-conducting radiating-case, substantially as herein set forth.

WILLIAM WHEELER.

Witnesses:

M. CLARK,
E. CLARK.