3 Sheets—Sheet 1.

J. DWYER & J. V. B. CARTER.

BASE-BURNING HEATING-STOVES.

No. 183,383. Patented Oct. 17, 1876.

Fig. 1.

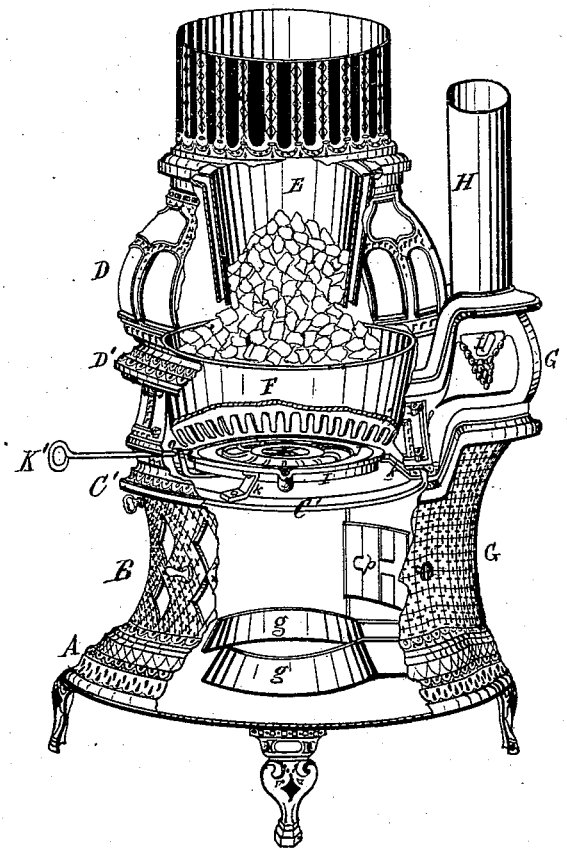

Fig. 2.

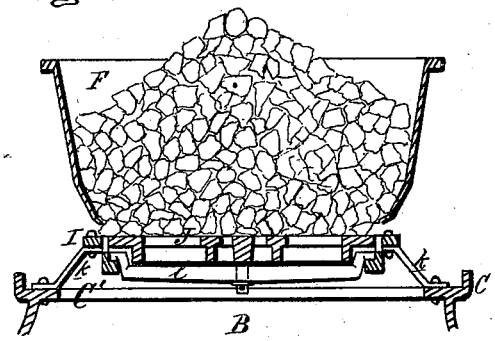

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Fig. 3.

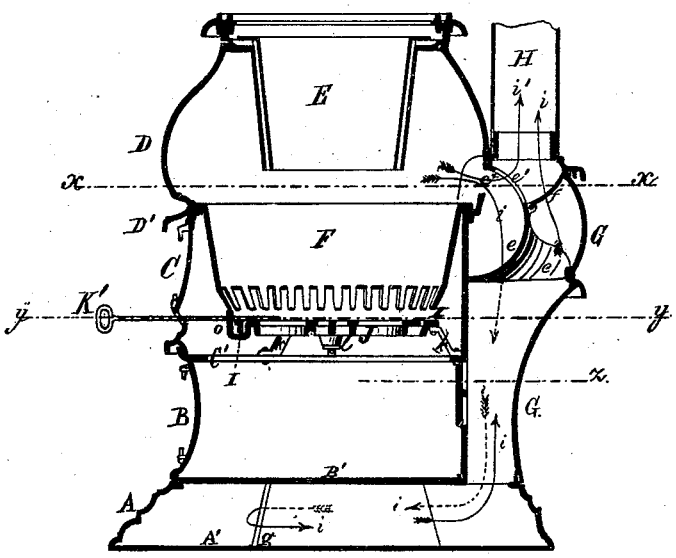
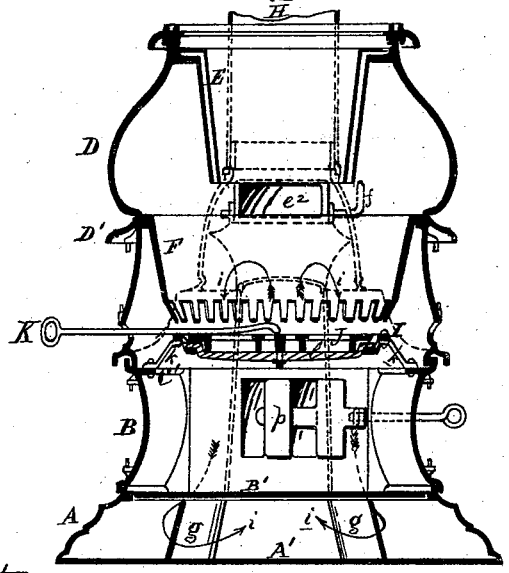


Fig. 4.



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BASE-BURNING HEATING-STOVES.

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Fig. 5.

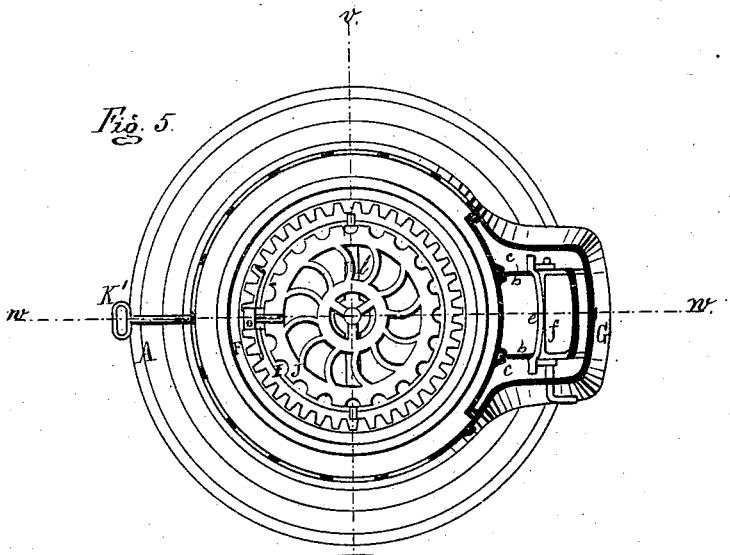


Fig. 6.

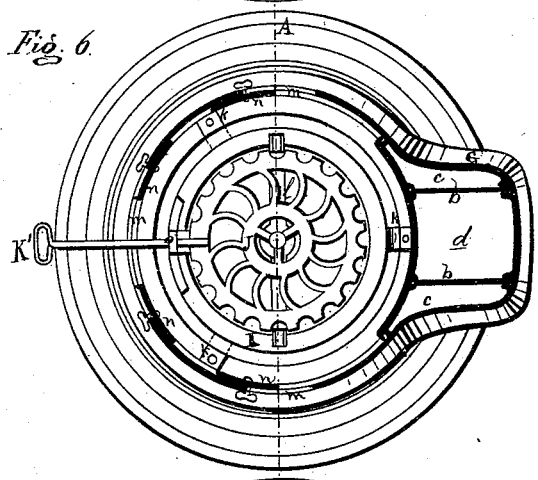
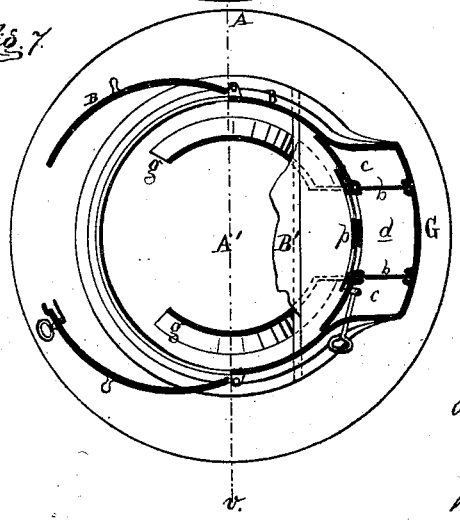


Fig. 7.



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UNITED STATES PATENT OFFICE.

JAMES DWYER AND JOHN V. B. CARTER, OF DETROIT, MICHIGAN, ASSIGNORS, BY MESNE ASSIGNMENTS, TO SAMUEL H. RANSOM, TRUSTEE, OF ALBANY, NEW YORK.

IMPROVEMENT IN BASE-BURNING HEATING-STOVES.

Specification forming part of Letters Patent No. **183,383**, dated October 17, 1876; application filed May 22, 1874.

To all whom it may concern:

Be it known that we, JAMES DWYER and JOHN V. B. CARTER, of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Base-Burning Heating-Stoves, of which the following is a specification:

The nature of our invention relates to an improvement in that class of base-burning stoves which are provided with a double base under the ash-pit, and so arranged that the draft may be reverted through the base-chamber, and are known as "base-heaters;" and it consists, first, in the combination of two descending flues and one ascending flue, inclosed within the shell and on the rear of the stove, with corresponding flues in a hollow base, entirely filling the same; secondly, in the combination of certain flue-strips in the base with the ascending and descending flues, and a curved partition at their upper ends, having a damper-opening; thirdly, in combination with the grate and fire-pot, the arrangement of certain segmental slides or followers behind slots in the walls of the stove, whereby a poker may be introduced to vibrate the grate or to remove clinkers and ashes from its surface without permitting the escape of dust from the stove, as more fully hereinafter set forth.

Figure 1, Sheet 1, is a perspective view of our stove, with portions of the outer wall, magazine, and fire-pot broken out, and the ash-pit bottom plate removed, to better show the internal arrangement. Fig. 2 is an enlarged vertical section of the fire-pot, grate, and ring, and the upper part of the ash-pit section, taken in the plane *v v* in Fig. 6. Fig. 3 is a longitudinal vertical section at *w w* in Fig. 5. Fig. 4 is a transverse vertical section at *v v*, Figs. 5, 6, and 7. Fig. 5 is a horizontal section at *x x*, Fig. 3. Fig. 6 is a similar section at *y y*. Fig. 7 is a similar section at *z z*.

Similar letters of reference indicate corresponding parts in the several figures.

In the drawing, A represents the base section; B, the ash-pit; C, the fire-pot section; and D, the illuminating section, in which is suspended the lower or discharge end of the magazine E. A′ is the bottom plate. B′ is the bottom plate of the ash-pit, which can be lifted out when the ash-pit doors are open, thereby facilitating the removal of dust and ashes from the base-chamber. C′ is the ring which separates the sections B and C, and which projects inwardly from their walls. D′ is the ring which separates the sections C and D, having an inward projection on which rests the flange of the fire-pot F, which is thereby suspended. The several sections A B C D are molded with an extension to the rear, to form a back-flue chamber, G, whose lower end communicates with the base-chamber, while its upper is provided with a collar, *a*, to receive the smoke-pipe H. The flue-chamber G is divided by two vertical flue-strips, *b b*, into three flues, to wit, a diving-flue, *c*, at each side of an up-return flue, *d*. Across the top of the flue-chamber is secured a curved and inclined partition, *e*, having an opening, e^1, in the upper part of its middle, which may be closed by a flap-damper, *f*. The partition is of such shape as to include the side flues on its front side, which are thus separated from the central flue which is behind it. An opening, e^2, is made in the section D for the exit of the gaseous products of combustion, which may pass up the flue H through the opening e^1 when the damper *f* is thrown back, as indicated in Fig. 3 by the arrow *i′*. When the opening e^1 is closed by the damper *f*, the products of combustion divide and pass down through the flues *c c* into the base, where the currents pass around outside of two flue-strips, *g*, in the form of segments of a circle, and inclined inwardly. In the front part of the base-chamber the divided currents reunite and flow back, rising up through the central flue *d* into the smoke-pipe H, which carries them to a chimney, their course, when thus reverted, being indicated by the arrows *i*. The segmental flue-strips *g* compel the heated currents to pass in contact with the entire periphery of the base-section, which is thereby more thoroughly heated than it would be if the ordinary straight strips were employed in the base. The lower edge of the fire-pot is toothed or slotted, the finger-like projections *h* being inclined more sharply inward than the walls of the pot, to wedge the mass of incandescent

fuel, and to prevent it from falling out over the edge of the grate-ring below when the clinkers are being raked off. I is a flat ring, of the same or a lesser diameter than the bottom of the fire-pot, a short distance below which it is supported by three braces, *k*, springing from the ring C′, to which they are bolted. J is the grate, having its center stud pivoted in a hole in the middle of a trunnion-bar, *l*, whose ends are pivoted in lugs at the sides of the stationary ring C′, so that the grate may have a vibratory movement in the horizontal plane, or be tilted, to dump the coal. The lower part of the section C, at the plane of the grate, has a series of slots, *m*, Fig. 6, cut in its periphery, each of which is fitted with a sliding segment or follower, *n*, on the inner side, any of which may be opened to permit the introduction of a hooked poker, K, Fig. 4, for raking off the grate and ring any clinkers that may have accumulated thereon. In the front slot a straight poker, K′, Fig. 6, is introduced and inserted in a hole in the upturned end of a lug, *o*, Figs. 4, 5, and 6, which lug is cast on the rim of the grate and passes under the ring before being turned up, so as to permit the grate to be tilted when desired. *p* is a dust-register, opening from the ash-pit into the flue *d*. By opening this register while the grate is being shaken, the dust and light ashes will be drawn up the flue.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a heating-stove, the combination of two descending flues and one ascending flue, inclosed within the shell and on the rear, with corresponding flues in a hollow base, entirely filling the same, substantially as described.

2. In a heating-stove, the combination of the segmental flue-strips in the base thereof, the ascending and descending flues, and the curved partition *e*, having a damper-opening, all arranged substantially as set forth.

3. In combination with the section C, the slots *m* pierced in the outer wall of the same, above the plane of the grate, and the sliding segments *n*, adapted to cover said slots wholly or partially for the purpose of inserting a poker through said slots, to clear off the top of the grate, and at the same time prevent the escape of dust, substantially as described.

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