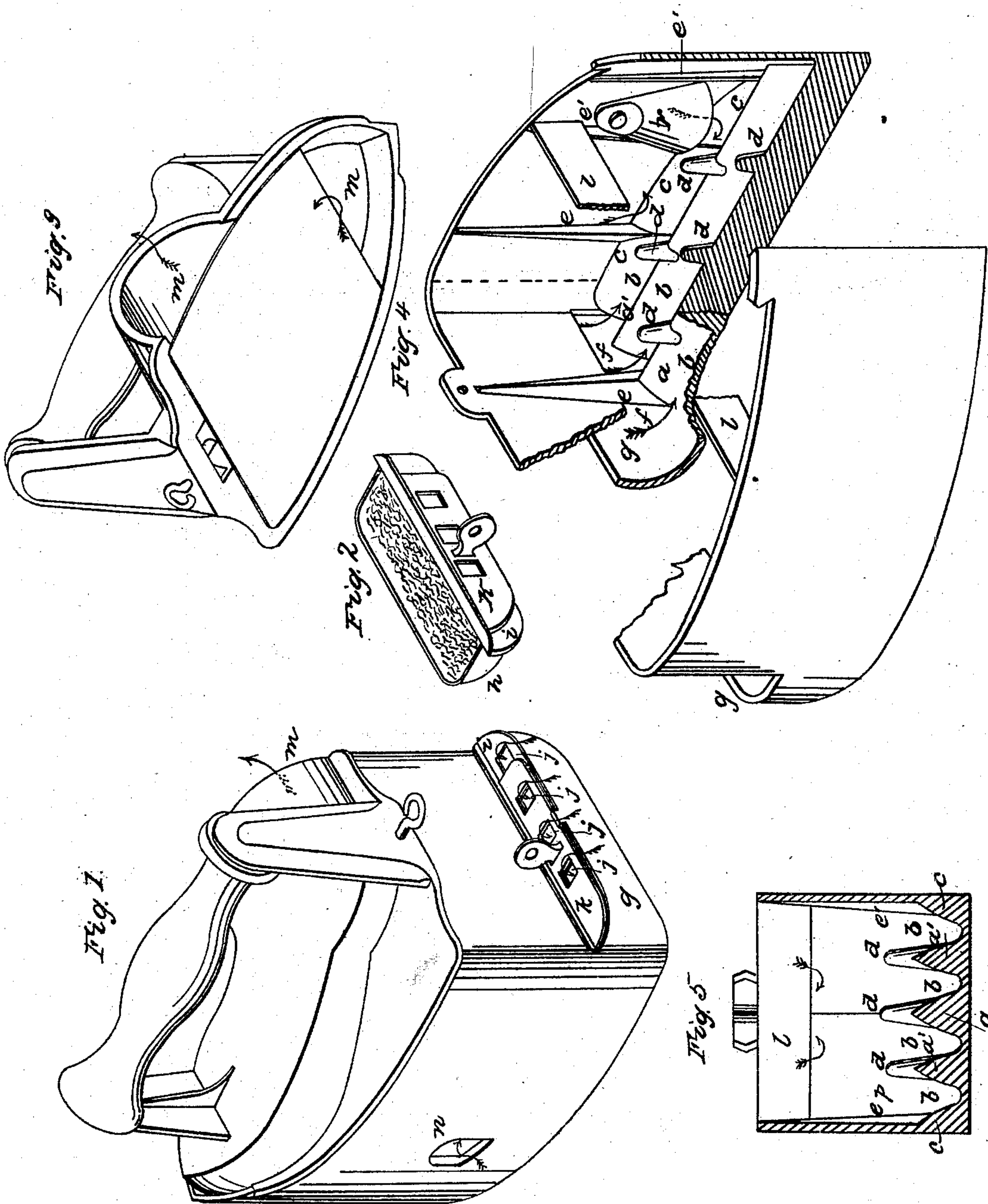


W. D. CUMMINGS.

Sad Iron.

No. 15,801.

Patented Sept. 30, 1856.



UNITED STATES PATENT OFFICE.

WILLIAM D. CUMMINGS, OF WASHINGTON, KENTUCKY.

IMPROVEMENT IN SELF-HEATING SMOOTHING-IRONS.

Specification forming part of Letters Patent No. 15,801, dated September 30, 1856.

To all whom it may concern:

Be it known that I, WILLIAM D. CUMMINGS, of Washington, Mason county, Kentucky, have invented new and useful Improvements in Self-Heating Smoothing-Irons; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification.

During some years experience with the self-heating smoothing-iron as patented by N. Taliaferro and myself, during which it has become a staple article, (its use being reckoned by the hundred thousand per annum,) I have been led to devise the form here presented—a form which after careful test contains, to the best of my judgment and observation, the various requisites for complete and effective and as nearly as possible automatic action.

My improvements have relation chiefly to the following objects: first, an arrangement for convenient and cleanly removal of the ashes, the same device affording facilities for regulating the draft, and also for temporarily shutting in the dust and ashes when the iron is to be employed on fine work; second, an arrangement of escape-flue which discharges the effluvia of combustion away from the breathing organs of the operator, the center of gravity being by the same arrangement so placed as to be favorable for stability in use.

In the accompanying drawings, Figure 1 is a perspective view of my improved iron. Fig. 2 represents the device serving as a draft-regulator when in the iron and an ash-holder when out of it. Fig. 3 shows the top as viewed from beneath. Fig. 4 shows the fire-box divided by longitudinal section. Fig. 5 is a transverse section through the fire-box immediately behind the deflecting-plate and looking forward.

The floor of the fire space has a number of longitudinal ridges *aa'* and intervening channels *b* extending from front to back. The interior angle at the junction of the sides and the bottom is occupied by a half-ridge or sloping fillet *c*. From these ridges there project upward spurs or pins *d*. These ridges in the present illustration are three in number, the center one *a* extending from the hollow of the

point to a triangular rib *e*, which projects from the inner surface of the back plate. This rib tapers upward, as shown. Similar ribs *e'* extend from the fillets *c* up the sides. The back plate stops somewhat short of the bottom, so as to leave apertures *f* for feed-air. The bottom plate curves backward and upward outside of the fire-box, and is closed, as represented, at the ends so as to form a trough *g*. Formed to fit this trough is a cover *h i j k*, and when in place in the trough the top *i* of this cover stands horizontal. This top *i* is perforated at *j*, and a correspondingly-perforated register *k* affords means for varying or closing the openings at will. This cover (which I call the "ash-receiver") has its open side toward the interior of the fire-box when in place, so that by closing the register and tipping the iron back the ashes contained by the channels fall into the receiver, which is then withdrawn, emptied, and replaced. This is a much better and cleaner plan than that generally adopted of blowing the ashes out.

The described ridges and fillets, while they avoid the disadvantages of isolation of the fire from the bottom and contraction of the fire-space incident to a grate, still provide ample facilities for the deposition of ashes and access of air, while the tops of the ridges being bare come nakedly in contact with the fire and conduct its heat directly to the working parts, the front margin. This latter effect is still further enhanced by the spurs and ribs, which also assist in keeping the mass open, thus insuring a rapid combustion. The spurs especially, being in the very midst of the incandescent mass, furnish very efficient conductors of the heat.

It will be perceived that the ridges and fillets all carry contributions of heat to the point or nose, and thus unite in maintaining its efficiency.

Stretched transversely across the fire-space about one-third distance from the front and depending vertically about one-third the depth is a plate *l*, called by me the "deflecting-plate," and which causes the hot-air which would otherwise flow along the top and escape at the flue *m* to dive and impinge against the front.

n is a draft-hole entering on one side suffi-

ciently forward to intensify the combustion near the point, but not so close to the point as to intervene between it and the fire.

A hood *p* attached to the inside directs the feed-air to the lower stratum of coal.

The flue *m*, commencing in front of the deflecting-plate, extends, as represented, rearward along the top of the iron and discharges toward the right hand and behind the operator. This arrangement of the flue is found to result in such a distribution of the weight as to remove all tendency to tipping when in use.

I claim as new and of my invention—

The trough *g*, extending rearward from the bottom of the fire-place in the described combination, with the ash-receiver *h*, open at the side next the said space and provided with a registered top *i j k*, for the purposes of cleanly separation and removal of the ashes, &c., as explained.

In testimony whereof I hereunto set my hand before two subscribing witnesses.

WILLIAM D. CUMMINGS.

Witnesses:

GEO. H. KNIGHT,

JAS. H. GRIALY.