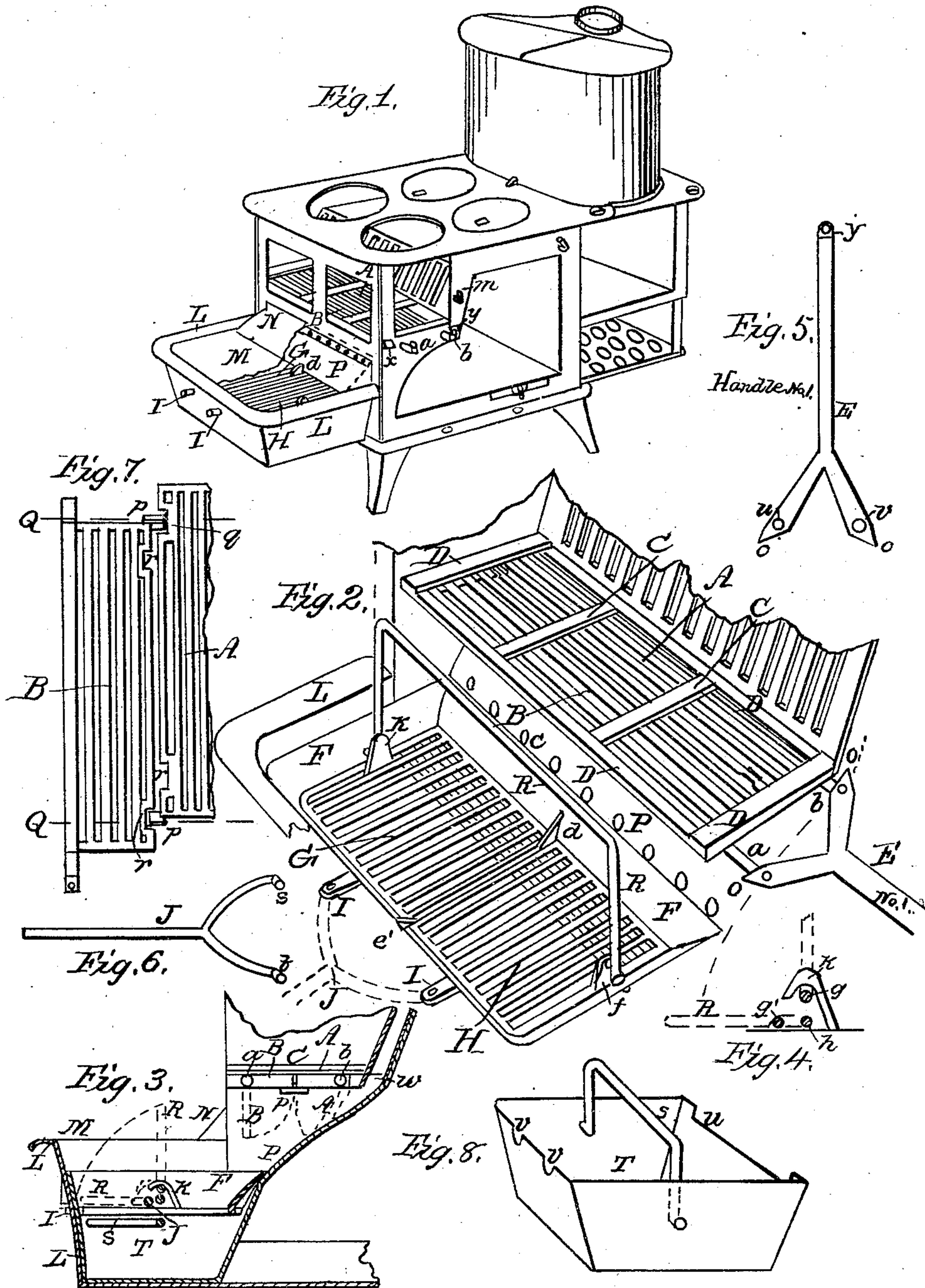


D. E. PARIS.  
Grate and Ash Sifter.

No. 78,685.

Patented June 9. 1868.



Witnesses.  
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# United States Patent Office.

DANIEL E. PARIS, OF TROY, NEW YORK.

Letters Patent No. 78,685, dated June 9, 1868.

## GRATES AND ASH-SIFTERS IN COOKING-STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, DANIEL E. PARIS, of the city of Troy, in the county of Rensselaer, and State of New York, have invented new and useful Improvements in Ash-Sifters and Fire-Grates; and I do hereby declare that the following is a clear and accurate description of the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, like letters representing like parts, in which—

Figure 1 is a perspective view of a stove with a part of the outer casing removed, showing the fire-grate and ash-sifter as applied to cooking-stoves.

Figure 2 is a perspective view of the grate and ash-sifter shown more in detail.

Figure 3 is a sectional side view of the grate and sifter, showing their relative position to each other.

Figure 4 shows the ear of the sifter, together with the movement of the bail, which is attached to the surrounding pan F'.

Figures 5 and 6 show, respectively, the handles to the grate and sifter.

Figure 7 is a top view of the grate, showing the extent of its movement longitudinally.

Figure 8 shows the ash-pan, which is situated below the sifting-grate in the hearth of the stove L.

It has long been desired to construct a fire-grate that could be operated from the outside of the stove. I secured this in my patent of December 31, 1867; but I have made some improvements in that grate, which are herein shown and described.

It has been equally desirable to secure some cleanly and expeditious method of separating the ashes from the coal after they fall from the fire-grate. Ash-sifters in the hearths of stoves have been used for a great many years, but they were never made movable, and made to operate inside the stove, until the invention of Mr. John M. Tuller, whose application for a patent was filed on or about the 5th of August, 1850. In that invention the sifter was made movable in the bottom of an ash-pan, as in this invention, and the ashes were separated inside of the hearth of the stove, while all the covers and dampers were closed, and his sifting-grate was moved by a handle or lever from the outside of the stove. Thus, I claim here nothing new in principle. I claim, however, that my arrangement is an improvement over Tuller's invention; that my sifting arrangement is more simple and convenient, and far less liable to get out of order, while the stove can be fitted much more closely, so as to better control the draught by regulating the admission of cold air.

The construction of my fire-grate was described in my previous patent, especially as regards placing the journals *a b*, fig. 2, eccentrically at either side of the grate. In this invention, the front grate B is the same as in the former, as regards the attachment of the journal *a*, while it differs from that in being independent of the back grate A. In the former invention the front grate lay on the back one, while in this its back edge lies on two rests, *p p*, as seen in fig. 7. In the former invention the back grate had the journal *b* attached at or near its front side, while here it is attached to its rear side, its front side lying on the rests *p p*, the same as the front grate, the one being the converse of the other; and while their movement is the same as in the former invention, the extent of which is shown at *Q Q* in fig. 7, yet their dumping arrangement is altogether different. One or both of these grates can be dumped entirely independent of the other, and is done by simply pushing the grate inward sufficiently far to let the slots *r r* come over the rests *p p*, when the grate falls, of its own weight, perpendicularly downwards, as shown in the dotted lines below the grate in fig. 3, thus dumping the entire contents into the sifter F, being conducted thence by the plate P.

Each grate is placed back in position again by being brought up horizontally, and then pulled a little outward till the edge is caught on the rests *p p*, and they are kept in position and prevented from dumping while the grate is being shaken, because of the points on the shaker E, at *o o*, which latter strike against the side or jamb of the stove before the grate goes sufficiently far backward to allow it to dump.

The points *o o* may be of any length required, or there may be stops on the side of the stove, as seen at X in fig. 1, by which means the points *o o* may be shortened or omitted altogether.

It matters not how violently or how fast the grate may be shaken, it cannot possibly dump, because it cannot go back sufficiently far to do so while the shaker E is attached to the journals *a b*.

In order to dump the grate, I change ends with the shaker, and put the eye *y* on the hooks of the journals *a b*, and push them inward till they dump; and this dumping arrangement could not be better, as the grate is



entirely freed of its contents at once, because, dumping thus from the middle of the fire-box, a plenty of room is had to discharge the whole contents of the fire-chamber at once without clogging.

The cross-bars *c c* are only placed over the grate when it is used for wood, and then they become exceedingly valuable, for they hold up the wood and brands of fire while the coals are dumped into the sifter below for broiling purposes.

These bars cannot be used with any other kind of grate, because in all other kinds a part of the grate when dumped turns upward as well as downward, and these valuable support-bars cannot be used with any kind of grate that turns upward when dumped.

The value of the sifting arrangement will be seen from the foregoing, for if the stove is used to burn wood, the live coals can be dumped down on to it, and the ashes at once sifted into the pan below by means of the shaker J, seen in fig. 2. Thus the broiling-iron is laid over the clear coals, the plate M being removed, and the smoke passes upward through the fire-box.

The chief improvement in this sifter over Tuller's invention is that it is divided into two parts, is provided with a bail that moves the sifting-grate in and out at pleasure, and is always ready for use, the journals I I being always out, and ready to receive the shaker J whenever the bail is down or the cover M in its place.

When they are out and ready for work, the holes through the front of the hearth-sink L are closed up, so as not to injure the draught of the stove by the admission of too much cold air, and so as to prevent the escape of ashes into the room.

Whenever the bail is down, the sifting-grates are left free to work, as seen in fig. 4, but whenever the bail is raised up, the sifting-grates are caught by the ears K, and pushed backward so that the sifter will lift freely out of the hearth L, so that its contents may be emptied the same as though its bottom were not movable.

Thus it will be seen that, whether coal or wood is used, the coals can be sifted from the ashes wholly inside of the stove; that the separation is perfect and complete, and without any dust or ashes in the room.

It will be seen also that these sifting-grates are operated on the same principle as the fire-grate, except they are not made to dump, that process not being required.

The sifting-pan F' is made without any bottom other than the sifting-grates G and H, which are held to the pan F' by rests at either side, and by the inverted Ts, *c* and *d*, at the centre, as seen in fig. 2.

The device of moving the sifting-grate in and out, by means of a bail, to the pan F, is considered simple and valuable, for when the bail stands up perpendicularly, and is ready for use, the grates are, by the movement of the bail, shoved backward, so that the pan can be lifted directly out of the hearth L, while, by the simple movement of putting the bail down again, so as to put on the cover M, the journals I I immediately move outward, so as to be ready to receive the shaker J, which latter cannot possibly be taken off the journals I I except the grates be left in proper position to be caught by the bail R. The next time, it is moved upward by means of the ears K and the pin *g*, seen in fig. 4.

It will be seen the bail R is attached to the pan F, and operates on the grates G and H. It may equally well be attached to the grates G and H, and made to operate on pins, lugs, or slots cast in or on the pan F. The principle would be the same in either case.

The top of the ash-pan T, seen in fig. 8, surrounds the bottom of the pan F, so as to catch all the ashes, while the two half rounds V V are made at the top of its front side, to accommodate the journals I I, and a part of the top of the back side is cut away, so as to accommodate the sifting-grates as they vibrate backwards and forwards.

The positions of the fire-grates B and A may, if desired, be interchanged, the back grate brought to the front, so as to bring the two journals *a* and *b* together.

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

1. A fire-grate, made in two parts, having journals eccentrically attached, and arranged to dump or discharge its contents from the centre of the fire-box, whenever the two parts are moved off their supports and allowed to fall down perpendicularly, substantially as described.
2. The elongated points *o o*, on the shaker E, or stops on the side-plate of the stove for the shaker to strike against, or an equivalent therefor, which shall prevent the shaker from driving either part of the grate in too far when in use, and so as to prevent it from dumping while in operation.
3. The support-bars *c c*, placed over and in combination with a vibrating fire-grate, for the purpose herein described and set forth.
4. A sifting-pan, situated below or in front of a fire-grate, having attached to its bottom, sides, or ends, two or more open movable sifting-grates or sieves, and arranged to vibrate inside of the stove, by means of a pronged handle or double shaker, operated from the outside of the stove, substantially as herein described and set forth.
5. The lifting and sifting-grate G H, or equivalent, in the hearth of a cooking-stove, provided with journals I I, projecting through the hearth, and adapted to be shaken or vibrated from the outside, substantially as shown and described.
6. A bail, attached to a sifting-pan, or to its movable bottom grate or grates, and so arranged as to move the grate or grates backwards and forwards, by raising said bail up perpendicularly and letting it down horizontally, substantially as herein shown and described.

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Witnesses:

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