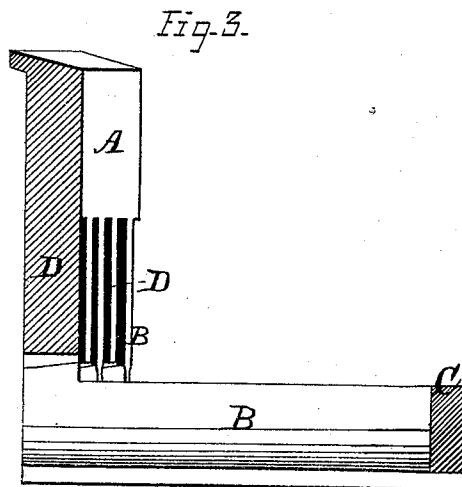
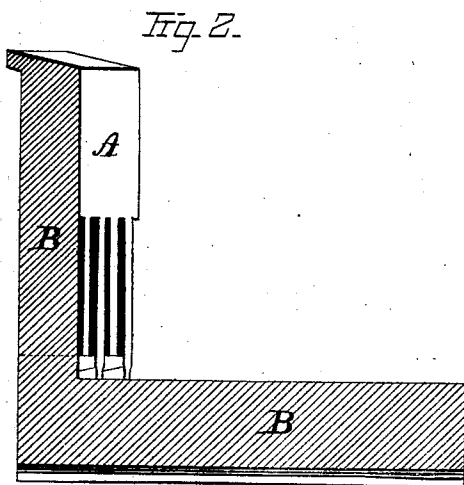
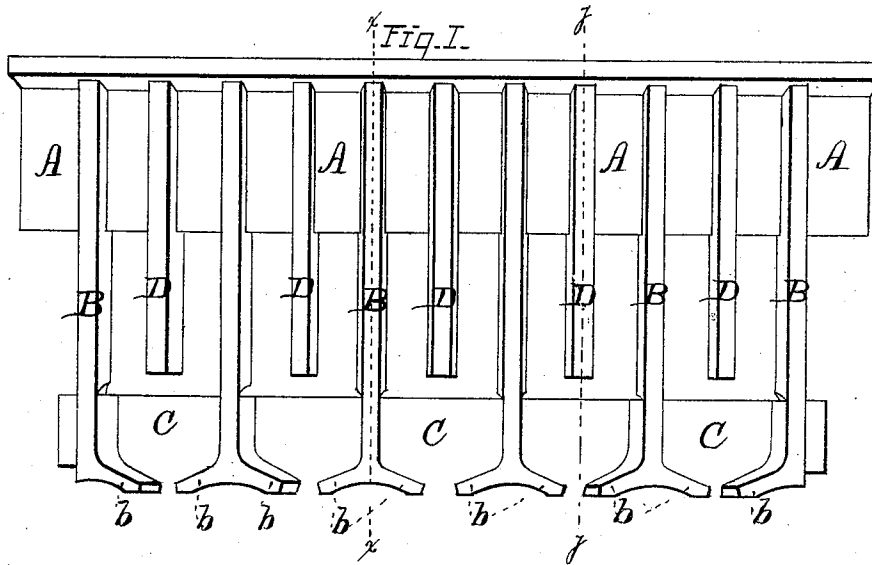


S. KEPNER.
Stove-Grates.

No. 149,227.

Patented March 31, 1874.



WITNESSES-

Jas. E. Hutchinson
 John R. Young

INVENTOR.

Solomon Kepner, by
 Grindle and Beane, his Attys.

UNITED STATES PATENT OFFICE

SOLOMON KEPNER, OF POTTSTOWN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO J. B. PARKER.

IMPROVEMENT IN STOVE-GRATES.

Specification forming part of Letters Patent No. **149,227**, dated March 31, 1874; application filed February 5, 1874.

To all whom it may concern:

Be it known that I, SOLOMON KEPNER, of Pottstown, in the county of Montgomery and in the State of Pennsylvania, have invented certain new and useful Improvements in Grates; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is an elevation of the front side of my grate. Fig. 2 is a vertical section from front to rear on line *xx*, Fig. 1. Fig. 3 is a vertical section from front to rear on line *yy*, Fig. 1.

Letters of like name and kind refer to like parts in each of the figures.

This invention has for its object to facilitate the removal of ashes, slag, or refuse from the grate; and it consists in providing the bottom bars with flanges on both sides to form the principal support of the coals, and in so arranging between the front bars as to alternate therewith short bars that depend from the top bar down to a point nearly or about level with the upper edge of the bottom bars, whereby apertures are left along the lower front edge of the grate, whence, by any suitable instrument, slag, clinker, ashes, and refuse may be drawn out, and the fire easily raked.

In the annexed drawing, A represents the usual upper or top bar of the grate; B, the front and bottom bars, which are connected at their ends with the said top bar and with the rear bar C. That portion or part of bars B which constitutes the bottom of the grate has flanges *b b* extending horizontally on each side from front to rear, excepting in the case of the end or side bars, where they extend inwardly on the fire-chamber side. The bottom bars so set and arranged are very much wider apart than the bars of an ordinary grate, the coals find a partial support on the upper edge of these bars, while such as fall between the bars rest upon the flanges on the lower part of the bars. These flanges are made sloping from a point about one-third the height of the bottom portion of said bars, and are of such breadth as to leave longitudinal spaces between the contiguous flanges for the entire breadth of the grate-bottom. The sloping or concave faces of these flanges thus set parallel to each other form a further support for the coals, while the longitudinal

spaces between them admit the draft and allow the ashes to fall through into the ash-chamber below. In the grate-front, and attached to the top bar, are the short bars D. By means of these supplemental bars the upper front portion of the grate has about the ordinary vertical openings found in the common open grate. These bars depend down nearly as far as a line parallel to the upper edge of the bottom bars B. They are usually so arranged as to come in a line with the above-described spaces between the flanges on the bottom bars.

By this construction and arrangement, wide apertures or openings are provided in the lower front edge of the grate, between every part of bars B, and below the ends of the bars D.

The draft through the grate can rarely be obstructed, because, while ample means are afforded for the support of the coals, there is very little opportunity for the unconsumed coal, ashes, slag, or clinker to mass up and clog the grate.

If by any chance there is an accumulation of such refuse or débris, or if from any reason it is desired to rake the grate or clean it out, the apertures or spaces between the flanges, or the opening or spaces in the lower front edge, afford the most ample and easy means for so doing.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. The grate-bars B, having on the lower edges of their horizontal portions flanges *b b*, as and for the purposes set forth and described.
2. The bars B, having the horizontal flanges *b*, in combination with the depending front bars D, in the manner and for the purposes set forth.
3. The combination of front bar A, rear bar C, curved bars B, having horizontal flanges *b b*, and depending bars D, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of February, 1874.

SOLOMON KEPNER.

Witnesses:

JOSEPH POTTS, Jr.,
CHS. RUTTER.