E. KUHN.

Grate.

No. 218,752. Patented Aug. 19, 1879.

Fig. 1.

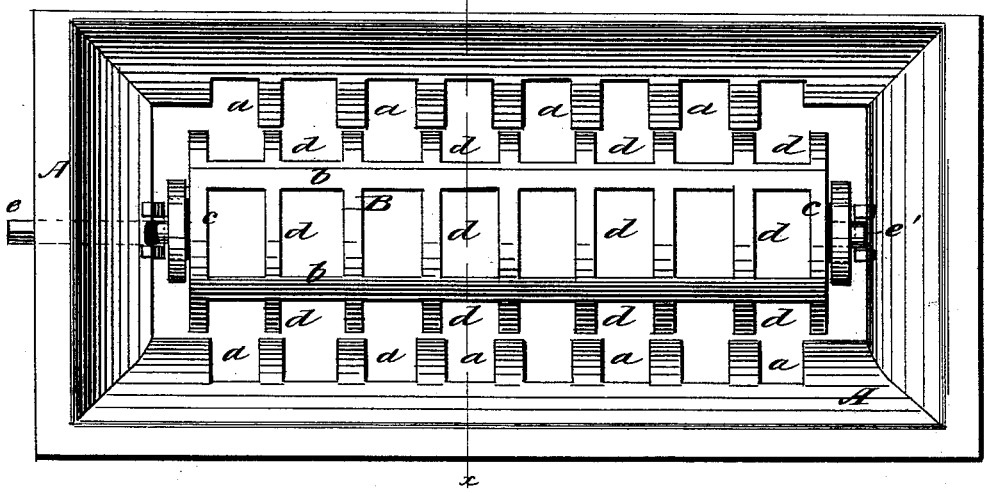
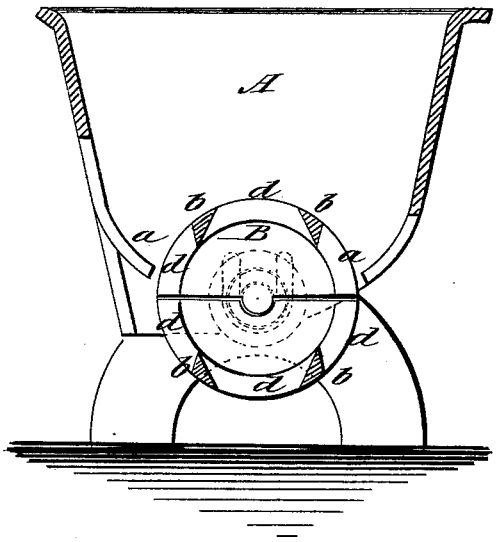



Fig. 2.




WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDMUND KUHN, OF NEW ALBANY, INDIANA, ASSIGNOR TO HIMSELF AND TERSTEGGE, GOHMANN & CO., OF SAME PLACE.

## IMPROVEMENT IN GRATES.

Specification forming part of Letters Patent No. **218,752**, dated August 19, 1879; application filed June 19, 1879.

*To all whom it may concern:*

Be it known that I, EDMUND KUHN, of New Albany, in the county of Floyd and State of Indiana, have invented a new and useful Improvement in Grates, of which the following is a specification.

This invention relates to an improvement in the construction and operation of grates for stoves, furnaces, &c.; and the object thereof is to provide an easily-operated grate which will effectually clear out the clinker, cinders, and ashes, and thoroughly agitate and open up the fire for the passage of the draft.

It consists of one or more cylindrical revolving grates pivoted horizontally in the lower part of the fire-box, which are caused to shake out the ashes, &c., and agitate the fire by turning on their axes.

In the accompanying drawings, Figure 1 is a top plan or view of the improvement, and Fig. 2 is a vertical cross-section of the same on line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A is the fire-box. This, as shown, is composed of a rectangular box, open at the bottom, and with the sides and ends beveled. The ends are solid, but the lower edges of the sides are provided with, or formed into, teeth *a*, which are bent toward each other from opposite sides. I do not, however, confine myself to this form of fire-box, as it is not essential to the completeness of the invention.

B is the cylindrical grate, composed of longitudinal bars *b*, joining at the ends solid heads *c c*, while between the heads, at regular intervals, the bars are connected together by short curved segments *d*, forming, with the bars, an open cylinder. From the center of the heads *c c* project short shafts *e e'*, which are boxed in the ends of the fire-box, the former, *e*, projecting through and squared at the end to receive a crank.

The teeth *a*, it will be observed, project sufficiently close to the periphery of the cylinder to keep the coals up, but do not touch or interfere in any way with its movement.

The grate revolves freely on its axis, and when the bed of coals is upon it this movement agitates the fire thoroughly, and frees it of accumulations of ashes, clinker, &c. In addition to this valuable property, the form of the grate, and the movement that can be communicated to it, permits the part under the fire to be constantly shifted and relieved from the liability of burning out, whereby its durability is greatly increased.

But one grate is shown; but I do not wish to be confined to this number, as two, or even more, may be employed without going outside the scope of my invention.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The open cylindrical revolving grate B, composed of bars *b*, connecting heads *c c*, intermediate connecting-segments *d*, and provided with short shafts *e e'*, projecting from the heads, in combination with the fire-box A, having solid ends, in which shafts *e e'* are journaled, and sides provided with teeth *a*, projecting toward the grate, substantially as described.

2. A stove or furnace grate, B, consisting of two heads, *c c*, connected by longitudinal bars *b*, that are themselves conjoined by transverse arc-bars *d*, as shown and described.

EDMUND KUHN.

Witnesses:

HERMAN KNIRIHM,

J. W. JONES.