

C. HIRES.

Grate.

No. 54,725.

Patented May 15, 1866.

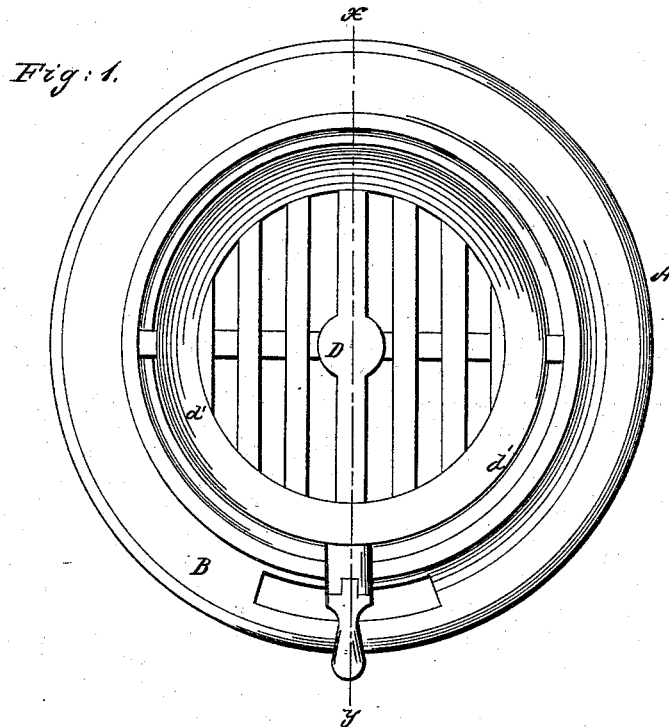
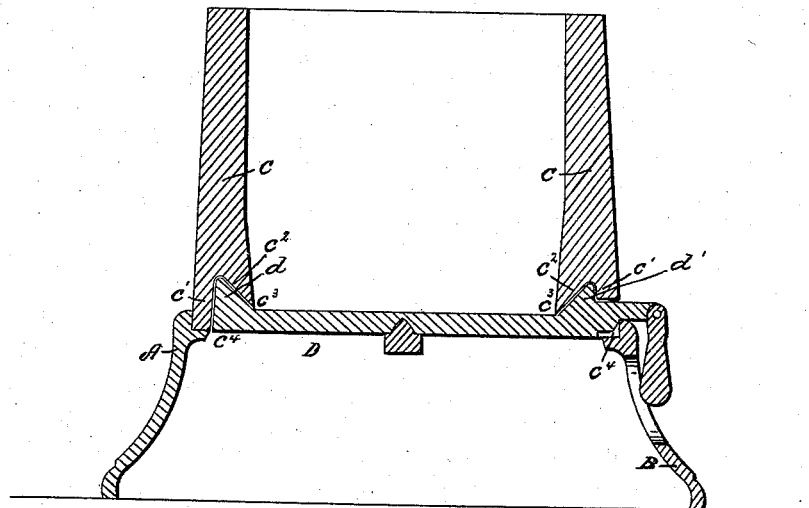


Fig: 2.



Witnesses:
Benjamin
B. Shattuck.

Inventor:
Charles Hires.

UNITED STATES PATENT OFFICE.

CHARLES HIRES, OF SALEM, NEW JERSEY.

IMPROVEMENT IN GRATES.

Specification forming part of Letters Patent No. 54,725, dated May 15, 1866.

To all whom it may concern:

Be it known that I, CHARLES HIRES, of Salem, in the county of Salem and State of New Jersey, have invented a new and useful Improvement in Coal-Stoves; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of the grate and base of a coal-stove having my improvement applied thereto; and Fig. 2, vertical central section of Fig. 1 on the dotted line *xy* thereof, and of the fuel-cylinder applied to the said grate and base, like letters of reference indicating the same parts when in both figures.

The object of my invention is to preserve the free horizontal vibratory or oscillatory motion of the grate which is generally applied to cylindrical coal-stoves, and is known as the "circular shaking grate," during the operation of separating the ashes from the fuel.

It consists in providing the lower edge of the fuel-cylinder with a deep annular groove and the upper side of the rim of the grate with a corresponding annular raised portion, and adjusting them together in the base of the stove, so that, while the grate will be left free to be oscillated horizontally in separating the ashes from the fuel, the usual fragments of cinder, slate, or stones will be prevented from getting between the grate and the lower end of the fuel-cylinder, and thus preventing its free motion, as heretofore.

In the drawings, A B is the base of the stove; C, the fuel-cylinder, and D the oscillatory grate. The fuel-cylinder C has a deep groove made around in its bottom edge, as

shown in Fig. 2, the outer side, *c'*, of the said groove being nearly parallel, vertically, with the outer side of the said cylinder *c'*, while the inner side, *c''*, of the said groove is sloped so as to produce an inner angular edge, *c'''*. The inner edge, *c'''*, of the groove is a trifle more than the thickness of the grate D shorter than the outer edge, *c''*, so that the cylinder C rests in the base A B on the said longer edge, *c''*, as seen in Fig. 2, and leaves the grate free from any pressure of the cylinder.

The rim of the grate D has cast upon its upper side a raised portion, *d'*, which corresponds in form, and nearly in size also, with the sides *c'* *c''* of the groove in the cylinder, and thus nearly a close joint having a downward inclination is produced between the grooved bottom of the cylinder C and the raised portion of the grate D, which allows a free oscillatory motion of the grate D, and at the same time prevents any fragments of cinder, slate, or stone from getting between them and obstructing the required motion of the grate.

This is a very simple and effective device for the purpose and adds little or nothing to the cost of the stove.

What I claim as my invention, and desire to secure by Letters Patent, is—

The raised sloped annular portion *d'* on the rim of the grate D and the corresponding annular groove *c'* *c''* in the bottom edge of the cylinder C, the said parts being arranged together so as to operate substantially as and for the purpose described.

CHARLES HIRES.

Witnesses:

BENJ. MORISON,
B. F. SHATTUCK.