

S. DUNCAN.
Stove-Grates.

No. 135,471.

Patented Feb. 4, 1873.

Fig 1

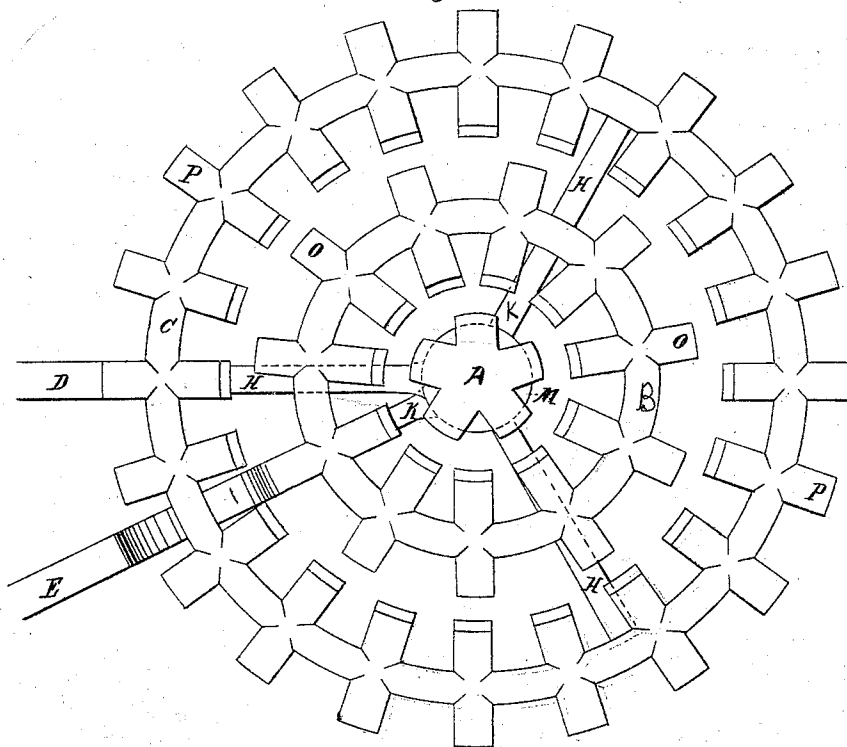
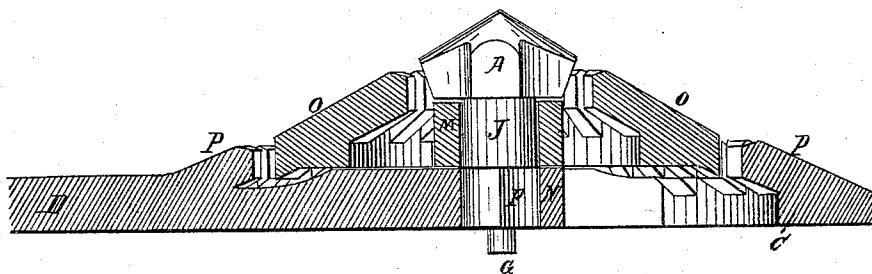


Fig 2



Witnesses

Joel D. Owen.
G. W. D. Bowles.

Inventor.

Samuel Duncan.

UNITED STATES PATENT OFFICE

SAMUEL DUNCAN, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF HIS
RIGHT TO JOEL D. OWEN, OF SAME PLACE.

IMPROVEMENT IN STOVE-GRATES.

Specification forming part of Letters Patent No. **135,471**, dated February 4, 1873.

To all whom it may concern:

Be it known that I, SAMUEL DUNCAN, of the city of Syracuse, in the county of Onondaga and State of New York, have invented a new and Improved Grate for Stoves and Furnaces, and suitable for use wherever circular grates are or can be used; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in so constructing my grate that it can always be shaken easily, and that the ashes, clinkers, and slate shall, whenever the grate is moved, tend to pass through the openings therein, and if the clinkers and pieces of slate are too large to pass through the grate that they will be broken immediately by the action of the grate until they will so pass instead of being carried round on the bars when it is shaken.

To enable others skilled in the art to make and use my invention I will describe its construction and operation.

In the accompanying drawing, Figure 1 represents a top view of the grate, and Fig. 2 a sectional view through the center of the grate.

I construct my grate of any suitable material, in its general form circular, composed of two or more circular sections, according to its diameter, and I make each of these sections conical, the one forming the center resembling the apex and the remaining sections resembling frustums of a cone, so that when the several sections of the grate are put together the whole, in general appearance, will form a cone, in which the conical surface of each section slopes substantially at the same angle and in the same direction; and I so arrange and combine the several sections that any one may be shaken separately, or any two or more of them together, as may be desired, the one represented in the drawing being composed of three sections, marked A, B, and C, respectively. Section A, Fig. 1, constitutes the center of the grate, and may be described as a bolt with a cylindrical head, from the circumference of which radiate several arms, the upper surface of which section is made conical, as shown by A, Fig. 2. The upper half of the stem of the bolt is rounded, as shown by J, Fig. 2, and the

lower half is squared, as shown by F, Fig. 2, and terminates in a pivot marked G, Fig. 2, which rests in any suitable step for the support of the grate. The section of the grate immediately surrounding the central part above described consists of a wheel with a rim marked B, Fig. 1, having radiating bars marked O O extending across it, and projecting a short distance each side, and spokes marked K K K and a hub marked M, the hole in the hub being made round and of a size to turn easily upon the round portion of the stem of the bolt forming the central section of the grate, as shown by M, Fig. 2. One of the spokes I extend outwardly beyond the rim to form a lever, marked E, Fig. 1, by means of which this section of the grate may be shaken when desired. This lever I bend down and then up again, as shown more clearly in Fig. 2, so that the same can be moved under the rim of the surrounding section marked C, Fig. 2. The rim B, Fig. 1, and the radiating bars O O are also made conical and resemble somewhat the frustums of a cone, as shown in Fig. 2, which conical surface slopes substantially at the same angle and in the same direction as that of section A, before described. Immediately surrounding this section B, Fig. 1, and concentric to it is the section marked C, Fig. 1, made with the radiating bars P P, spokes H H H, and hub N, Fig. 2, and with its upper surface made conical and sloping substantially at the same angle and in the same direction as the conical surface of sections A and B, Fig. 1. This section C is constructed in all respects similar to section B, above described, except that it is larger, and the hole in the hub is made square to snugly fit the squared portion of the stem of section A, Fig. 1, as shown at N, Fig. 2, and, also, excepting that the shaking-lever marked D, Fig. 1, is made nearly straight, as shown in Fig. 2.

I do not intend to confine myself to the three sections A, B and C, above described, but to also include as many sections as may be desired, constructed substantially as B and C, above described, in addition thereto. The upper surface of the rims and radiating bars of the sections B and C, Fig. 1, are slightly rounded to facilitate the passage of ashes through the grate.

The conical surface of the radiating bars of the several sections of the grate are not in the same plane, but at the outer portion of each section falls a little below the conical surface of the inner ends of the radiating bars of the surrounding section, forming a sort of shoulder, against which any ashes, clinkers, or slate sliding down the surface of such section will necessarily strike and be turned through the openings of the grate at that point, or if too large be broken up by the projecting ends of the radiating bars so that they will pass through.

In case the lever marked D, Fig. 1, is used, then section C and section A, Fig. 1, will both be shaken; and in case the lever marked E, Fig. 1, is used, then section B, Fig. 1, alone is shaken.

In practical operation either or both of the shaking-levers may be used at pleasure, and any two or more sections of the grate desired

may be fastened together in any suitable manner and shaken at the same time.

I do not claim as my invention a circular grate, or a conical grate, or a sectional grate, as such; but

I do claim as my invention and desire to secure by Letters Patent—

A grate composed of a conical central section surrounded by one or more conical rings, each of which slopes substantially at the same angle and in the same direction as the central section, when said sections are so arranged that the upper surface of each section falls a little below that of the surrounding section, and when they are so combined that each section may be shaken separately, if desired, substantially as above described.

Witnesses: SAMUEL DUNCAN.

JOEL D. OWEN,
GEO. D. COWLES.