

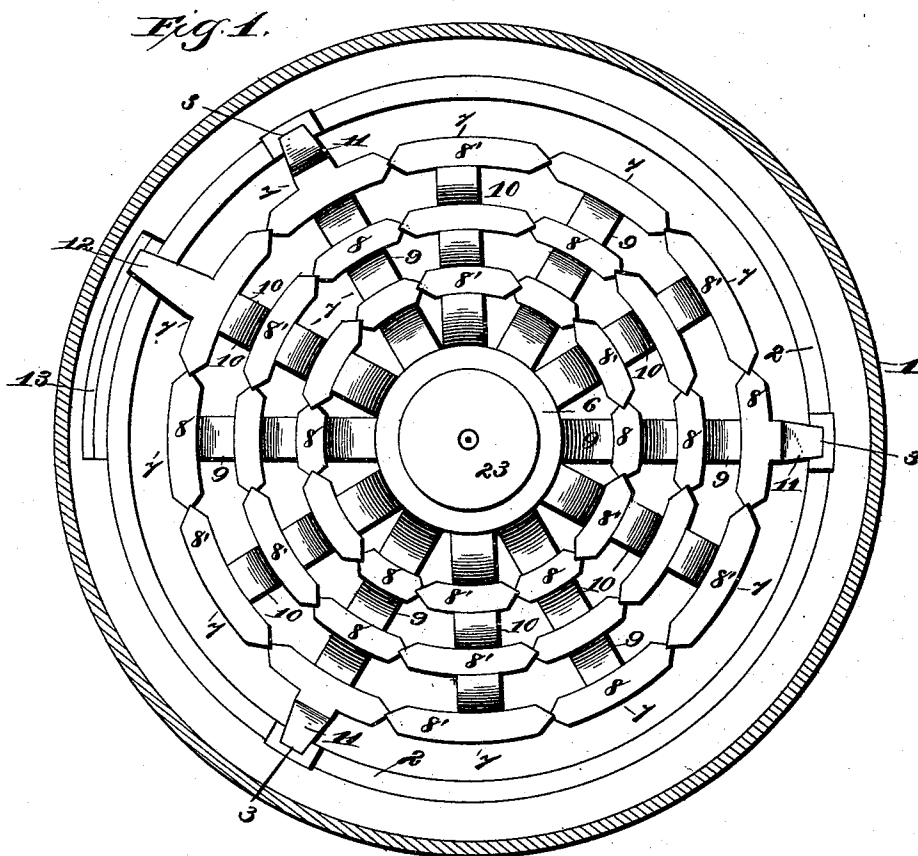
(No Model.)

2 Sheets—Sheet 1.

W. W. SWEETLAND.
GRATE.

No. 479,728.

Patented July 26, 1892.



Witnesses

E. A. Wurdeman,

A. J. Collamer,

Inventor

By *his* Attorneys, *W. W. Sweetland*

C. Snow & Co.

(No Model.)

2 Sheets—Sheet 2.

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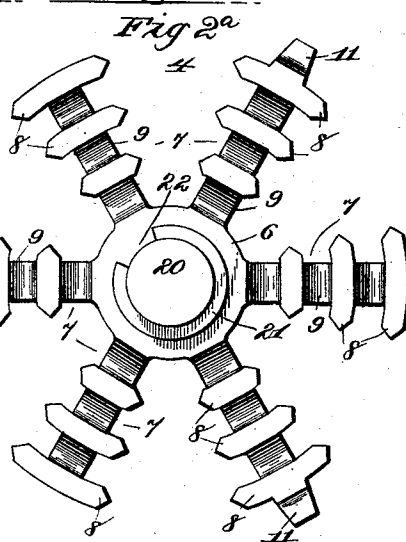
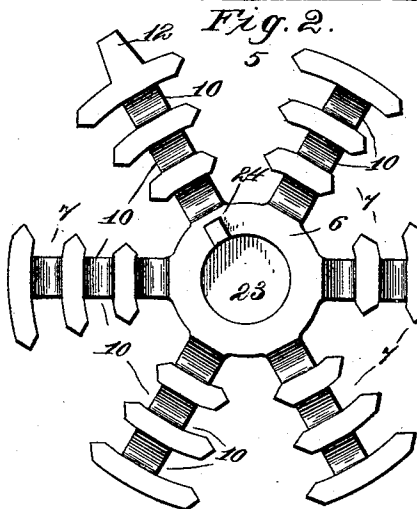
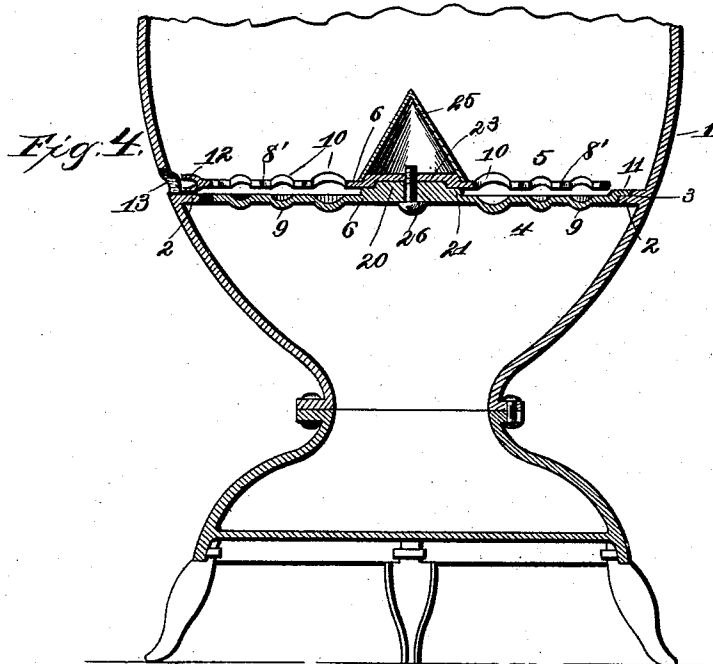
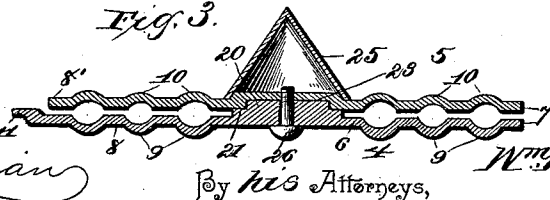


Fig. 3.



Witnesses

Inventor

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UNITED STATES PATENT OFFICE.

WILLIAM W. SWEETLAND, OF EDWARDSBURG, MICHIGAN.

GRATE.

SPECIFICATION forming part of Letters Patent No. 479,728, dated July 26, 1892.

Application filed October 19, 1891. Serial No. 409,166. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SWEETLAND, a citizen of the United States, residing at Edwardsburg, in the county of Cass and State of Michigan, have invented a new and useful Grate, of which the following is a specification.

This invention relates to stoves and furnaces, and more especially to the grates used therein; and the object of the same is to produce an improved grate of that class known as "rotary."

To this end the invention consists in a grate constructed substantially as hereinafter more fully described and claimed, and as illustrated on the sheet of drawings, wherein—

Figure 1 is a horizontal section through the fire-pot of a stove, showing the ring therein and my improved grate supported by said ring and in its closed condition. Fig. 2 is a plan view showing the bottom of the upper member, Fig. 2^a is a similar view showing the top of the lower member. Fig. 3 is a cross-section through the two members when the grate is closed. Fig. 4 is a central vertical section of a stove having my grate.

Referring to the said drawings, 1 designates the stove, wherein beneath the fire-pot is suitably supported a ring or inwardly-projecting flange 2, provided with upwardly-opening sockets 3 at certain points.

4 is the lower member, and 5 the upper member, of my improved grate. Each member comprises a circular body 6, from which radiate arms 7, having concentric projections 8, about as shown. There are preferably six arms to each member, and the length of the projections 8 is such that if combined they would form half a circle. The members are duplicates to the extent thus far described, except that the projections 8' on the upper member extend a little farther to one side of each arm than to the other, while the projections 8 on the lower member extend to equal distances beyond their supporting-arms. Between the points where the projections cross the arms the lower arms have downward bends 9 and the upper arms upward bends 10, as best seen in Fig. 3. At the extremities of certain of the arms of the lower member are ears 11, which are removably seated in the sockets 3 of the ring 2, and although I have not

shown it so, there could be but two of these ears diametrically opposite and rounded, so as to form stub-shafts, the sockets being correspondingly rounded, and thus the grate would become a dumping-grate. One of the arms of the upper member is continued outwardly, as at 12, to form a shaker-socket and projects through a slot 13 in the front of the stove, so that an ordinary shaker may be applied thereto.

On the upper side of the body 6 of the lower member 4 is mounted a step 20, around which is located a stationary washer 21, having a notch 22, and in the lower face of the body 6 of the upper member is a cavity 23, which rests upon and turns about the step 20, a lug 24 at one side of this cavity moving in the arc-shaped notch 22, and thus limiting the degree of rotation which the upper member shall have over the lower. On the upper side of the body 6 of the upper member is mounted a cone 25, which covers and protects from the fire a pivot, bolt, or rivet 26, which passes through the centers of the two members. If this pivot be a screw, as shown in Fig. 3, it is preferably passed loosely through the lower member upward and screwed into the upper member in order that it may be withdrawn (when it is desired to separate the members) without the necessity of first removing the cone. The latter may thus be cast integral with or immovably secured upon the upper member, as by welding. The parts are of cast or wrought iron and of suitable sizes and dimensions.

In use after the grate is put in position within the ring the shaker-socket is turned so that the grate shall be closed, as seen in Fig. 1, and the fire is laid thereon. In this position it will be seen that the tips of the projections 8' of the upper member stand just above the tips of the projections 8 of the lower member from over which they have been moved, and hence when this upper member is to be moved back into alignment with the lower member there will be no clinkers standing between the adjacent faces of the concentric projections. Said faces are not quite in contact with each other owing to the thickness of the step 20, and the remaining portions of the arms where they are provided with the bends 9 and 10 are of course out of contact, as seen. These bends

9 and 10 form oppositely-disposed concavities which will, in a great measure prevent the grate members becoming clogged with clinkers and ashes. In this position the lug 24 stands against one end of the annular notch 22. When it is desired to shake the stove, a shaker is inserted in the socket 12 and the upper member is oscillated around its pivot over the lower. If the coals and clinkers be of considerable size, it may be necessary to open the grate to its greatest capacity in order to let the said coals and clinkers fall through, and this is accomplished by moving the socket 12 completely to the left or until the arms 7 of the two members register exactly with each other.

I do not confine myself to the exact details of construction, as considerable change in and addition to the device described may be made without departing from the spirit of my invention.

What is claimed as new is—

1. In a grate, the combination, with a lower member consisting of a central body, radial arms having downward bends, and concentric projections secured at their centers to said arms, of an upper member comprising similar body and arms, the latter being provided with upward bends registering with the downward bends in the lower arms, concentric projections on the arms, secured to the latter slightly out of the centers of the projections, a pivot at the centers of said members, and means for oscillating the upper member and supporting the lower.

2. In a grate, the combination, with a lower member consisting of a central body and radial arms having downward bends and means for supporting said member, of an upper member consisting of a central body and radial arms having upward bends registering with the bends in the lower arms, a pivot at the centers of said bodies, and means for oscillating the upper member.

3. In a grate, the combination, with a lower member consisting of a central body, radial arms, and concentric projections secured at their centers to said arms, and means for supporting this member, of an upper member consisting of similar body, arms, and projections, the latter being secured to the arms slightly out of the centers of the lengths of said projections, a pivot at the centers of said bodies, and means for oscillating the upper member.

4. In a grate, the combination, with a lower member consisting of a central body, radial arms, and concentric projections secured at their centers to said arms, means for supporting this member, a step rising from its center, and a fixed washer adjacent said step and provided with an arc-shaped notch, of an upper member consisting of similar body, arms, and projections, the latter being secured to the arms slightly out of the centers of the lengths of said projections, a cavity in the upper member fitting said step and having a

lug adjacent engaging said notch, the combined length of the projections in each member forming a half-circle, and said notch being of a length to permit the movement of each upper projection from above its corresponding lower projection nearly but not quite off the same, and means for oscillating the upper member.

5. In a grate, the combination, with a lower member consisting of a central body, radial arms, and projections, a step rising from said body, and means for supporting this member, of an upper member comprising similar body, arms, and projections, the body having a cavity turning on said step and of a depth to hold the adjacent faces of the members out of contact, and means for oscillating the upper member.

6. In a grate, the combination, with a lower member consisting of a central body, radial arms, and projections, a step rising from said body and having a central hole, and means for supporting this member, of an upper member comprising similar body, arms, and projections, the body having a cavity turning on said step and of a depth to hold the adjacent faces of the members out of contact, a hollow cone on the upper side of the body of this member, a screw passing upwardly through said hole in the lower member and into the upper member, and means for oscillating the latter.

7. In a grate, the combination, with a lower member consisting of a central body having a central hole, radial arms, and projections, and means for supporting this member, of an upper member comprising similar body, arms, and projections, a hollow cone on the upper side of the body, a screw passing loosely through said hole in the lower member and into the upper member, and means for oscillating the latter.

8. In a grate, the combination, with a lower member consisting of a central body, radial arms, and concentric projections secured at their centers to said arms and means for supporting this member, of an upper member consisting of similar body, arms, and projections, the latter being secured to the arms slightly out of the centers of the lengths of said projections, a pivot at the centers of said bodies, means for oscillating the upper member, and means for permitting the movement of each upper projection from above its corresponding lower projection nearly but not quite off the same.

9. In a grate, the combination, with a lower member consisting of a central body, radial arms, and projections, means for supporting this member, a step rising from its center, and a fixed washer adjacent said step and provided with an arc-shaped notch, of an upper member consisting of similar body, arms, and projections and a cavity in the upper member, fitting said step and having a lug adjacent engaging said notch, and means for oscillating the upper member.

10. In a grate, the combination, with a lower member consisting of a central body, radial arms, and projections, means for supporting this member, a step rising from its center and
5 having a central hole, and a fixed washer adjacent said step and provided with an arc-shaped notch, of an upper member consisting of similar body, arms, and projections, the
10 of a depth to hold the adjacent faces of the members out of contact, a hollow cone on the

upper side of the body of this member, a screw passing upwardly through said hole in the lower member and into the upper member, and means for oscillating the latter.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM W. SWEETLAND.

Witnesses:

J. W. BEAN,

J. D. BEAN.