No. 880,472. PATENTED FEB. 25, 1908.

T. J. STAFFORD.

STOVE GRATE.

APPLICATION FILED JULY 8, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

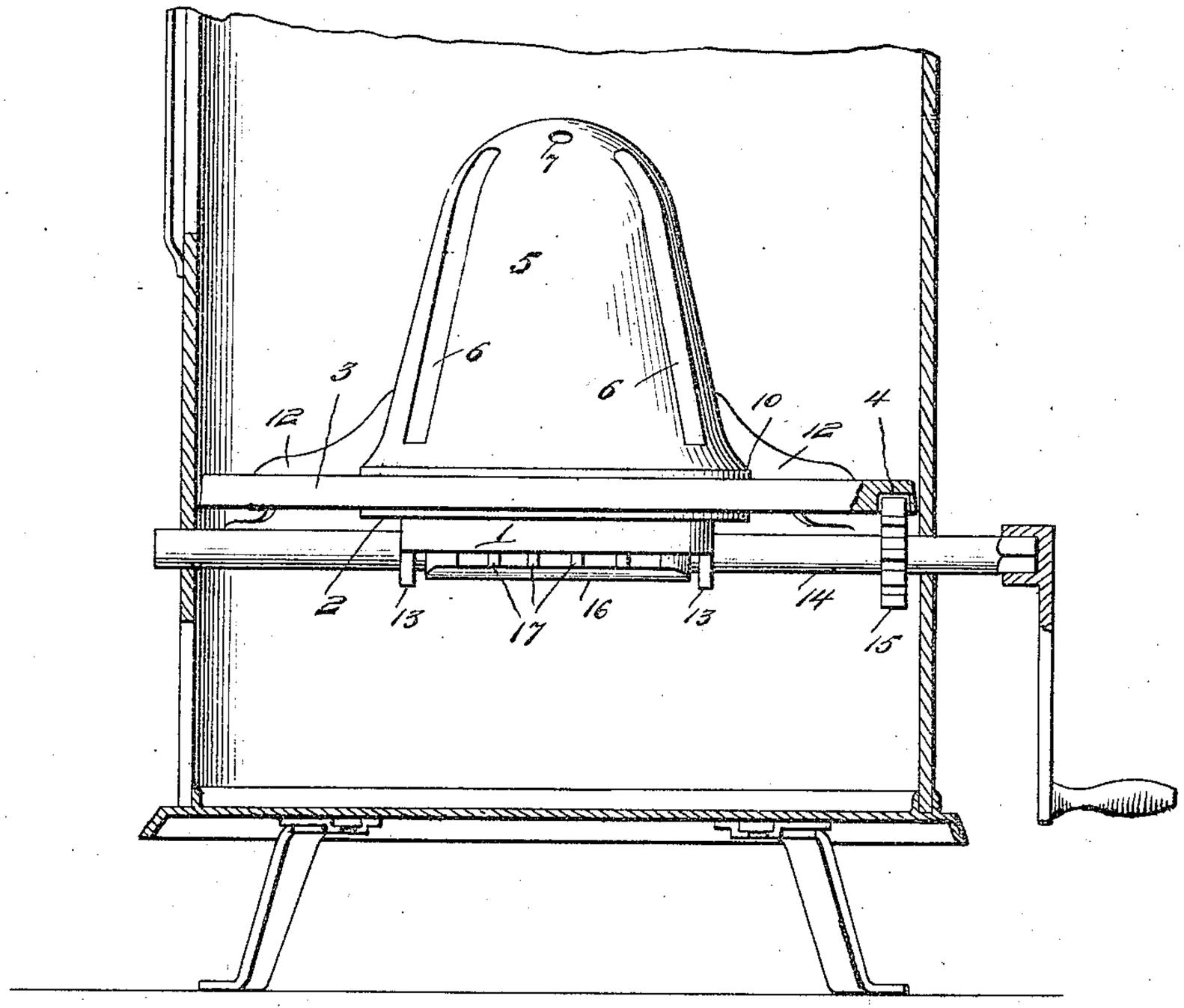
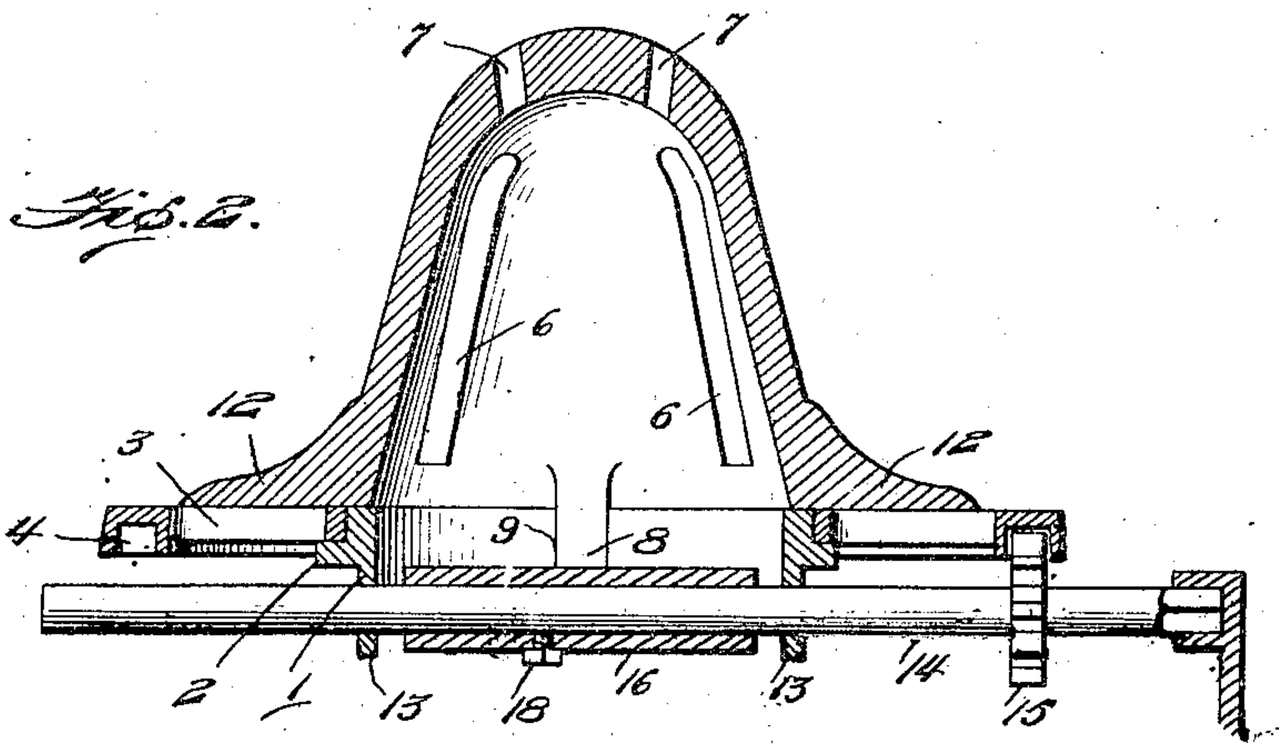


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

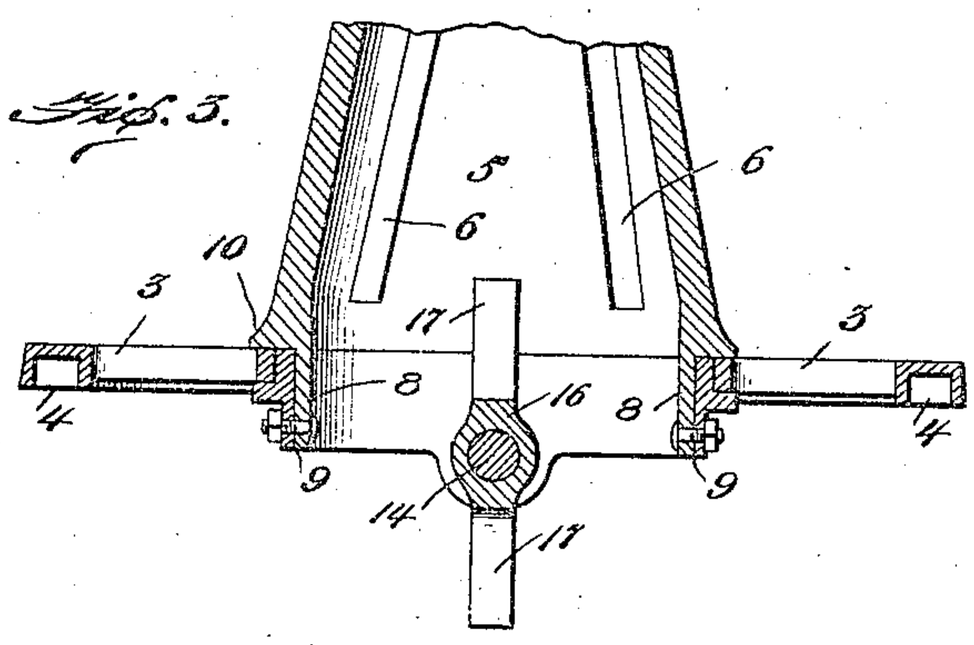


Fig. 4.

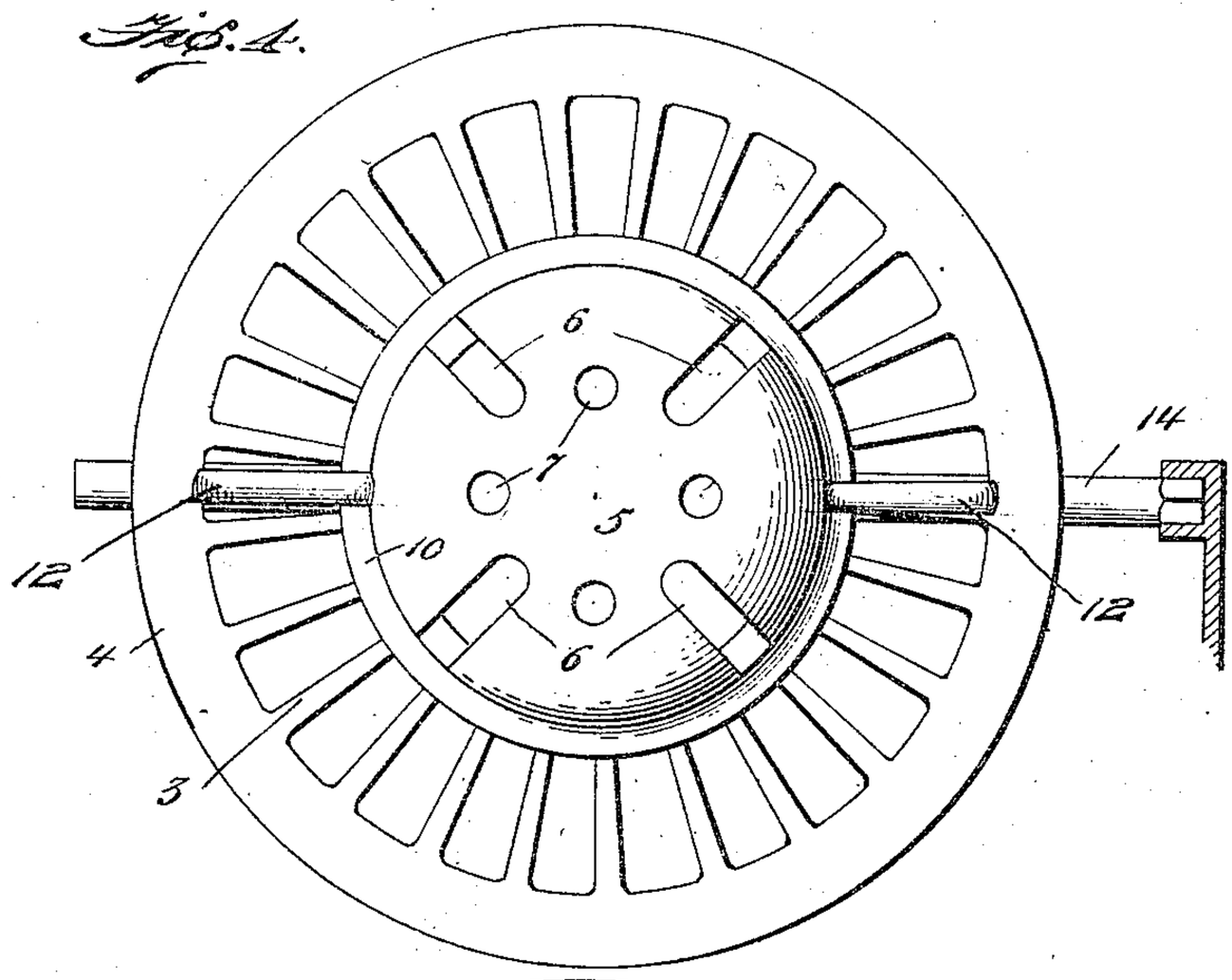
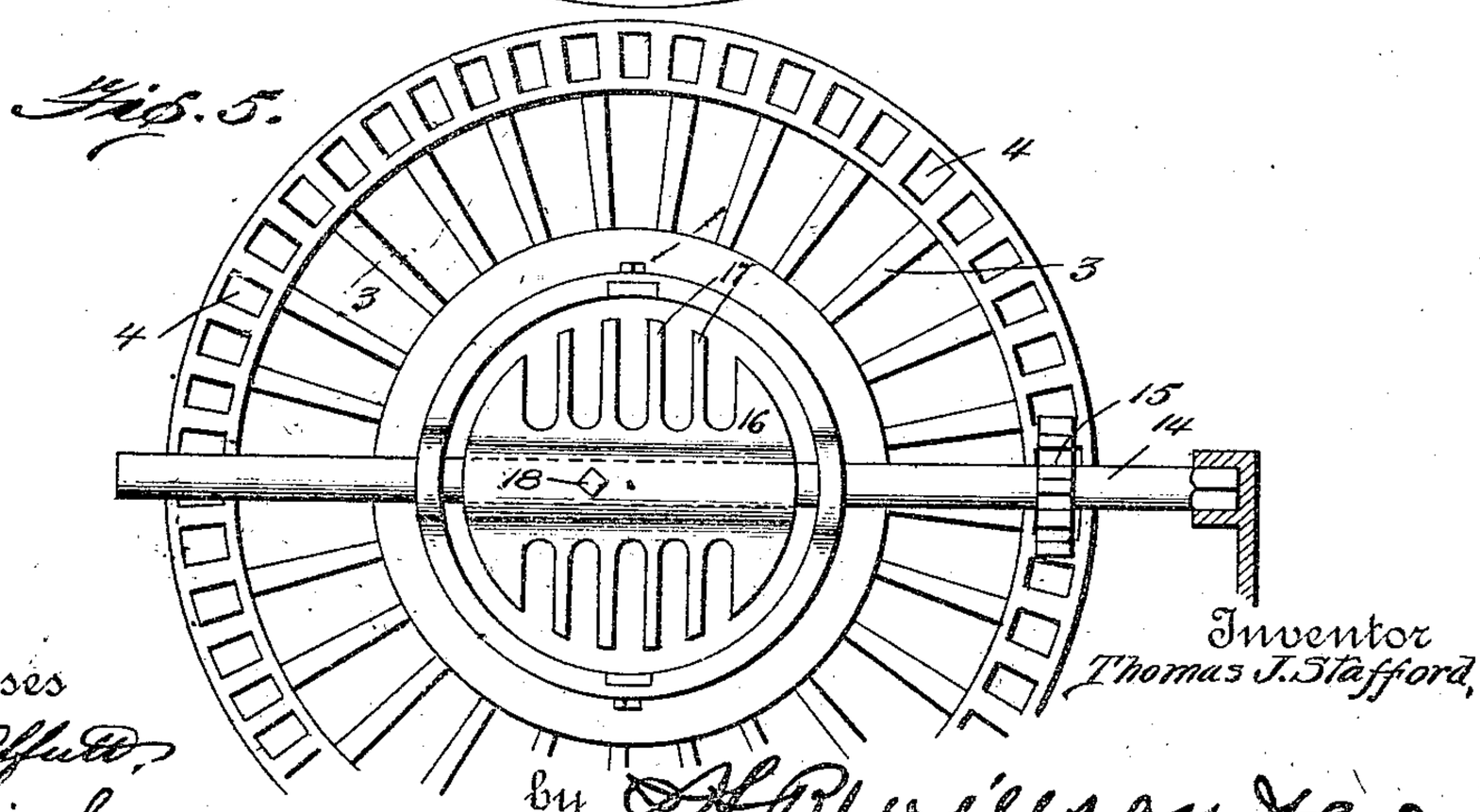


Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS J. STAFFORD, OF BROOKLYN, IOWA.

STOVE-GRATE.

No. 880,472. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed July 8, 1907. Serial No. 382,728.

To all whom it may concern:

Be it known that I, THOMAS J. STAFFORD, a citizen of the United States, residing at Brooklyn, in the county of Poweshiek and State of Iowa, have invented certain new and useful Improvements in Stove-Grates; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in stove grates.

The object of the invention is to provide a grate so constructed and arranged that air will be admitted to the center of the fire and having means whereby the clinkers and cinders will be finely broken up and discharged through the grate.

With this object in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more particularly described and fully pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a vertical sectional view through the lower portion of a stove, showing the application of the grate; Fig. 2 is a vertical sectional view of the grate removed from the stove; Fig. 3 is a similar view at right-angles to Fig, 2, showing the center of the grate open; Fig. 4 is a top plan view of the grate; and Fig. 5 is a bottom plan view of the same, showing the arrangement of the operating mechanism.

In the embodiment of my invention I provide a centrally disposed supporting ring 1, having formed thereon an annular, radially projecting flange, 2. On the upper side of the ring 1 and supported by the flange, 2, is a revolubly mounted circular grate section 3, in which is formed an annular series of radially disposed openings through which ashes and cinders are adapted to pass. On the underside of the grate 3, adjacent to its outer edge is formed an annular rack, 4, with which is adapted to be engaged a suitable operating mechanism hereinafter described.

On the upper side of the ring 1 is arranged an upwardly projecting dome, 5, which is substantially conical in shape, and is provided in its sides with a series of vertically disposed slots or passages, 6, and in its upper end with a series of vertically disposed holes, 7. Formed on the lower end of the inner side of the dome 5 are fastening lugs, 8, which project downwardly and engage recesses 9, formed in the inner wall of the ring 1, said lugs being bolted or otherwise secured to the lower portion of the ring 1 below the flange 2, thus firmly holding the dome in place. The lower edge of the dome is flared outwardly to form a radially projecting annular flange, 10, which engages the upper side of the inner portion of the circular grate 3, and serves to hold said grate in position on the ring, 1. At diametrically opposite points on the lower end of the dome 5 are formed radially projecting grate-engaging lugs 12, which project over the open portion of the grate. The lower sides of the lugs 12 are squared or flat to closely engage the upper side of the grate, and said lugs serve, in connection with the grate bars formed by the openings in the grate, to form a crushing mechanism whereby the cinders and clinkers carried around by the grate when the latter is oscillated, will be finely broken up so that the same may be readily passed through the openings in the grate.

At diametrically opposite points to the lower end of the ring 1 are formed apertured bearing lugs 13, in which is revolubly mounted a shaft 14, one end of which is adapted to project through the side of the stove, and is provided with a squared portion to receive a wrench or crank handle, by means of which the shaft may be oscillated or revolved. Keyed or otherwise secured to the shaft below the rack 4 is a spur gear pinion, 15, which is adapted to engage the teeth of said rack, whereby when the shaft is revolved or oscillated, the circular portion of the grate will be revolved or oscillated by the pinion.

Fixedly mounted on the shaft 14 within the ring 1, is an inner grate section, 16, which is in the form of a plate having an enlarged central portion through which the shaft 14 extends. The plate 16 is notched or recessed on each side of the enlarged central portion to form a series of grate fingers or bars, 17. The grate section 16 is fixedly secured to the operating shaft by means of a set-screw, 18, so that the said section is revolved or oscillated with the shaft, and when thus moved, serves as a fan to create a draft or to force air into the center of the fire through the slots and holes 6 and 7 in the dome.

Having thus fully described my invention, what I claim as new and desire to secure by Letters-Patent, is:

1. A stove grate comprising a circular supporting ring, an annular grate mounted on said ring an apertured dome above said grate, an annular rack formed on said grate, a revolubly mounted operating shaft, a gear pinion on said shaft to engage said rack, whereby said grate is oscillated, and a grate section revolubly mounted in said supporting ring and adapted to serve as a fan to force air up through said dome, substantially as described.

2. A stove grate comprising a circular supporting ring, an annular grate revolubly mounted on said ring, said grate having formed therein a series of radially disposed openings, a slotted air-conducting dome secured to said ring and projecting upwardly into the fire box, means on said dome to coact with said circular grate whereby the cinders and clinkers are crushed or broken up, means to oscillate said grate, and a fan adapted to force air through said slotted dome into the center of the fire, substantially as described.

3. A stove grate comprising a supporting ring, a circular grate revolubly mounted on said ring, an annular rack formed on the underside of said grate, an upwardly projecting air-conducting dome secured to the upper side of the ring above said grate, cinder-crushing lugs formed on said dome to coact with the bars of said circular grate to reduce the cinders and clinkers in the fire, an operating shaft journaled in the lower side of said supporting ring, a spur gear pinion mounted on said shaft and adapted to engage the annular rack on said grate whereby the latter is oscillated, substantially as described.

4. A stove grate comprising a centrally disposed supporting ring, a circular grate revolubly mounted on said ring, an annular rack formed on the underside of said grate, a slotted dome mounted on the upper side of said ring, a grate retaining flange formed on the lower end of said dome, oppositely disposed cinder crushing lugs formed on the lower end of the dome to co-act with said grate, an operating shaft revolubly mounted in the lower sides of said ring, a spur gear pinion on said shaft to engage the rack on the underside of said grate, a fan mounted on said shaft within said supporting ring, said fan comprising a plate, a series of oppositely projecting fingers formed on opposite sides of the same, whereby when said shaft is operated, said plate will be oscillated or revolved to force a current of air through said dome and into the center of the fire, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS J. STAFFORD.

Witnesses:

EDW. H. TALBOTT,

B. M. TALBOTT.