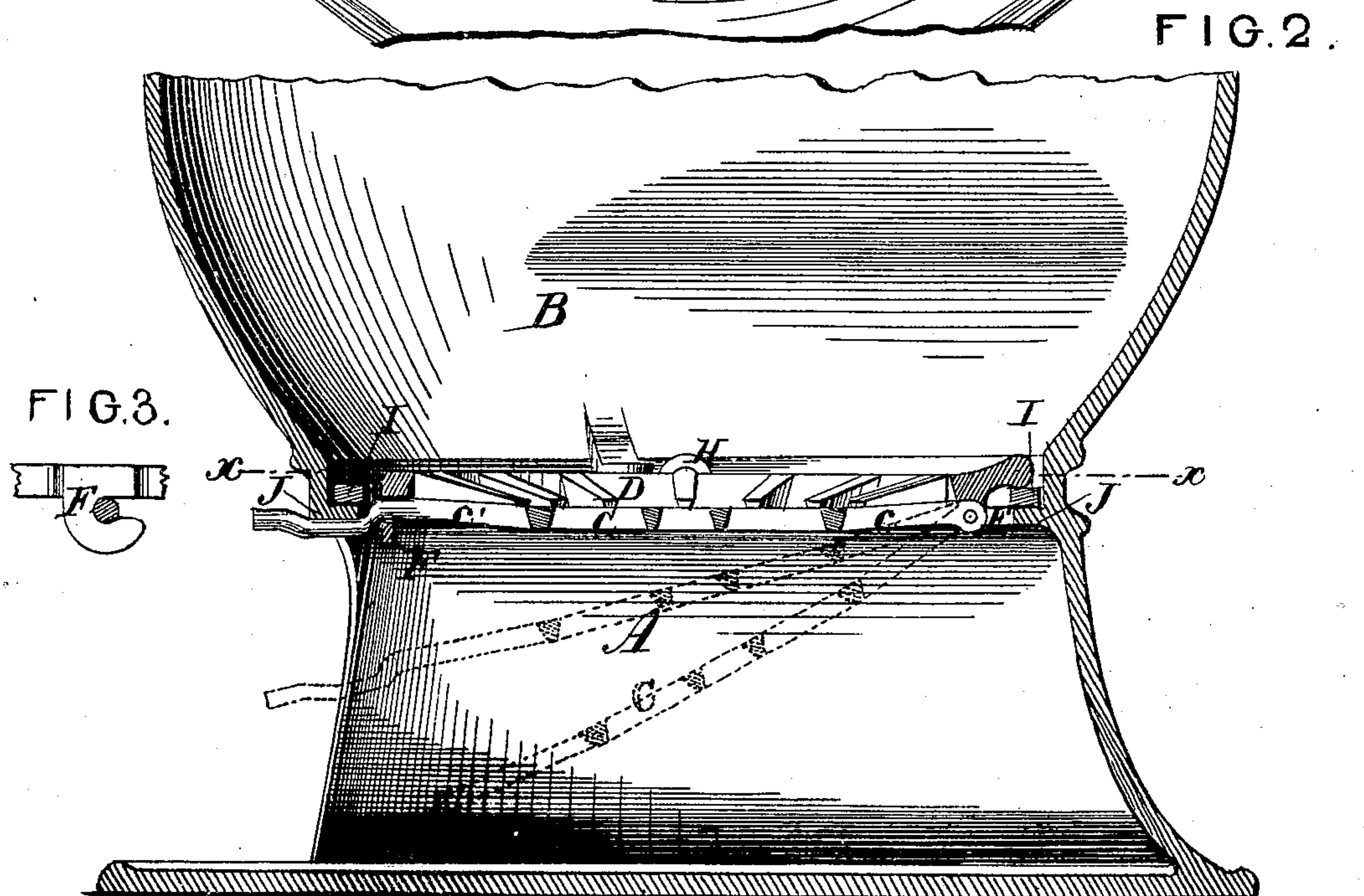
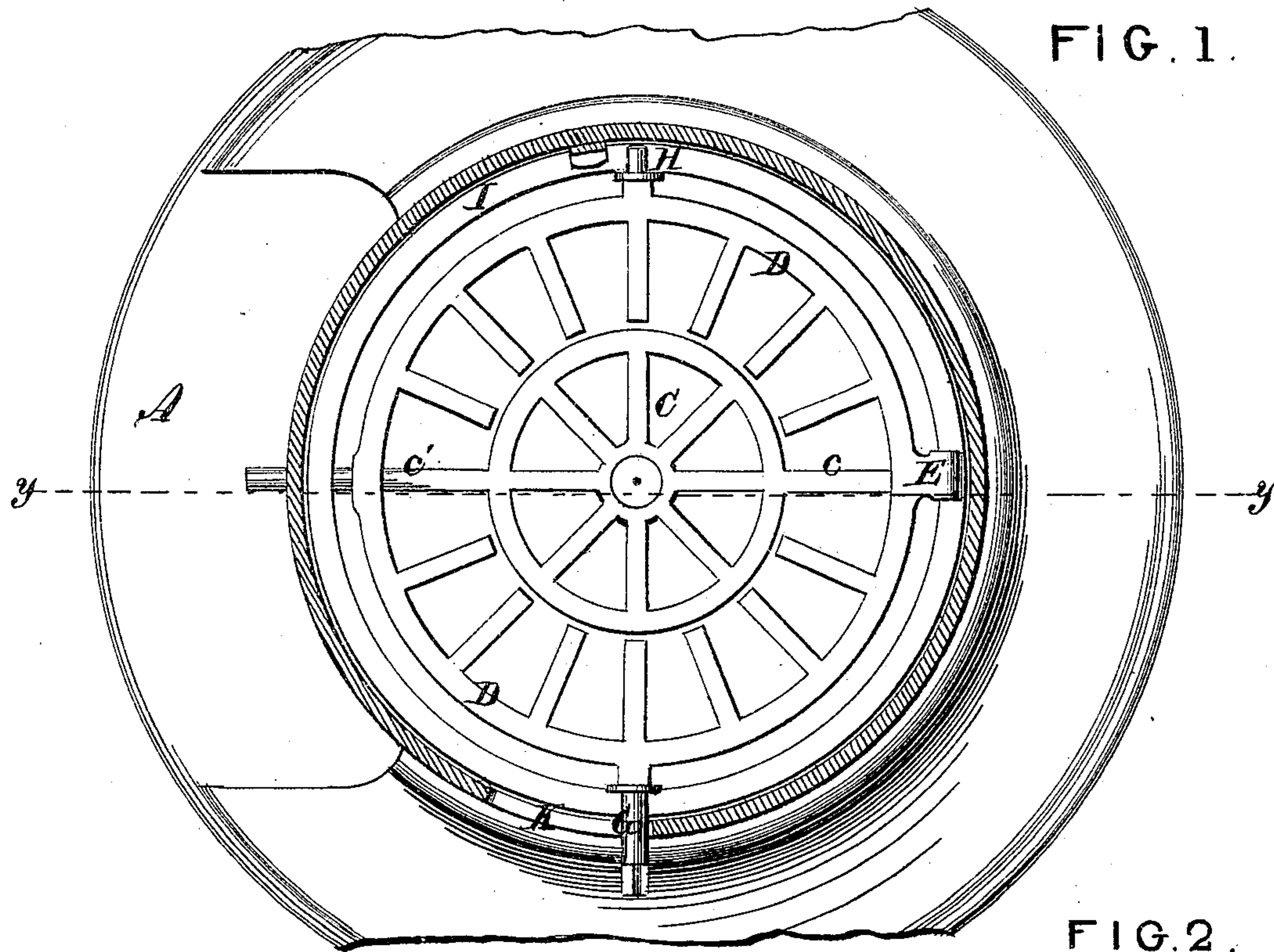


H. W. PELL.

Grates for Stoves and Furnaces.

No. 132,688.

Patented Oct. 29, 1872.



Witnesses.

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HENRY W. PELL, OF ROME, NEW YORK.

IMPROVEMENT IN GRATES FOR STOVES AND FURNACES.

Specification forming part of Letters Patent No. 132,688, dated October 29, 1872.

To all whom it may concern:

Be it known that I, HENRY W. PELL, of Rome, in the county of Oneida and State of New York, have invented an Improved Grate for Stoves and Furnaces, of which the following is a specification:

Nature and Objects of the Invention.

For shaking: My improved grate is surrounded by a ring resting on a supporting flange or on lugs. The grate is thus adapted to vibrate about its center, in a horizontal plane, without a center pivot.

For removing clinkers: The central part of the grate is hinged at back to the main portion, and is supported in front by a projecting arm or bar catching over a hook or latch. This drop-center enables me to discharge any incombustible matter without interfering with the body of the fire, so that the grate can be kept clean and the fire bright without letting it out during the entire season.

For dumping: The entire grate rests on trunnions within the ring before referred to, so that it may be tipped into vertical position in customary manner to discharge the entire contents of the fire-pot.

Description of the Drawing.

Figure 1 is a horizontal section at xx , Fig. 2, of a furnace-grate illustrating my invention. Fig. 2 is a vertical section thereof at yy , Fig. 1. Fig. 3 is a detached front view of the device for supporting the drop-center.

General Description.

A may represent the ash-pit, and B the fire-pot of a furnace or stove of any form. My improved grate consists of a central part, C, and an annular main portion, D, the radial or converging bars of which slope downward toward the center, thus imparting to the entire grate a concave form. The center C has a longitudinal bar, $c\ c'$, extending backward nearly to the rear edge of the grate, where it is attached to the annulus D by a hinge, E. The front part c' of the longitudinal bar rests within a hook or lug, F, formed on the front edge of the grate, and extends forward

beyond the shell of the stove or furnace to admit of taking hold of it with a stove-hook or by hand, to detach or insert it in dropping or replacing the center C. The annulus or main portion D of the grate is constructed with trunnions G H, resting on a ring, I, which is supported by a flange, J, or suitable lugs in lieu thereof. One of the trunnions, G, projects through a slot, K, in the shell of the furnace, which slot admits of shaking the grate, and the said trunnion is squared at its outer end to receive a key for dumping.

From the above description it will be seen that I dispense entirely with the customary center-bar and vertical pivot for supporting, shaking, and dumping the grate.

Operation.

For shaking the grate the key is applied in horizontal position to the projecting end of the trunnion-arm G, which is moved to and fro in customary manner, the ring I vibrating or sliding in a circular path upon the supporting flange J. If any clinkers or incombustible matter are to be discharged from the fire, the projecting and supporting bar c' of the drop-center C is detached from the supporting-hook F and the center is allowed to fall. By reason of the concavity of the grate repeated shakings cause the heavy and incombustible matter to collect over the center C, so that by dropping it, as described, all slag, clinker, stone, and other refuse matter can be discharged, while the main body of the incandescent fuel, resting on the annular grate D, will not be disturbed. In this manner the fire can be kept in good condition as long as desired without letting it out. If, however, it is desired to discharge all the contents of the fire-pot, the entire grate C D is tipped over on its trunnions G H by the aid of the key, or by simply bearing down on the projecting arm c' .

My improved grate is adapted for use in many or all of the stoves or furnaces in general use.

Claims.

I claim as new and of my invention—

1. The dropping-center C, supported within

an annular grate, D, substantially as and for the purposes set forth.

2. The supporting and vibrating ring I, affording bearings for the trunnions G H, and resting on a suitable flange or lugs, J, to admit of shaking the grate, as described.

3. The concave double grate, formed of two

concentric portions, supported and operating substantially as and for the purposes set forth.

HENRY W. PELL.

Witnesses:

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