

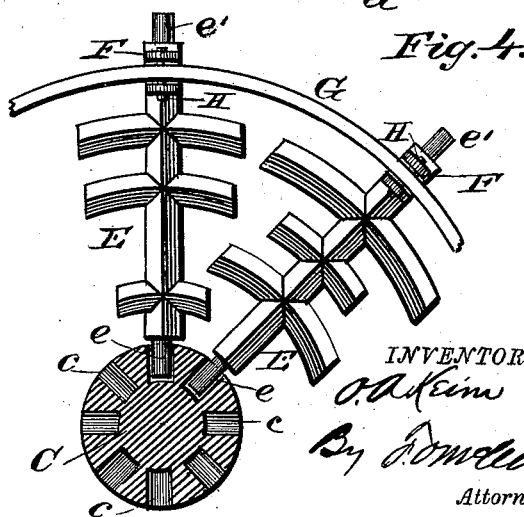
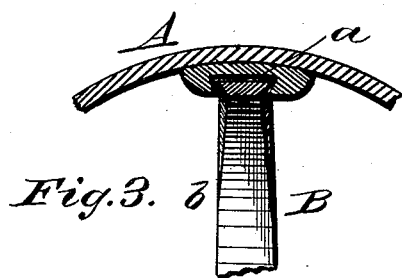
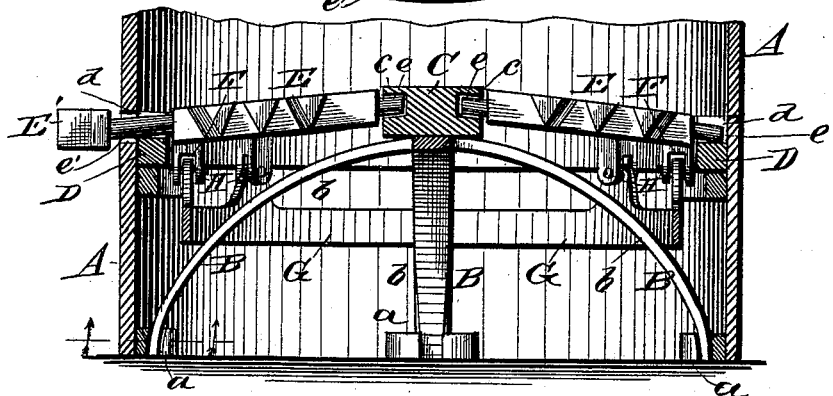
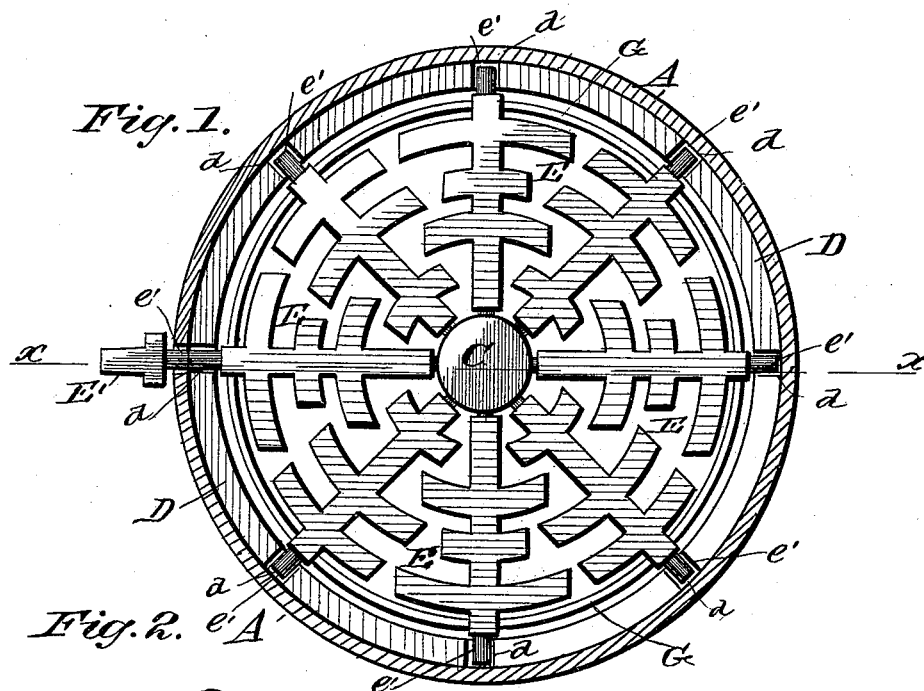
(No Model.)

O. A. KEIM.

GRATE.

No. 348,129.

Patented Aug. 24, 1886.



WITNESSES

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# UNITED STATES PATENT OFFICE.

OTHNIEL A. KEIM, OF SHENANDOAH, PENNSYLVANIA.

## GRATE.

SPECIFICATION forming part of Letters Patent No. 348,129, dated August 24, 1886.

Application filed March 18, 1886. Serial No. 195,701. (No model.)

*To all whom it may concern:*

Be it known that I, OTHNIEL A. KEIM, of Shenandoah, in the county of Schuylkill and State of Pennsylvania, have invented certain  
5 new and useful Improvements in Grates; and I do hereby 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 pertains to make and use the same.

10 My invention relates to grates for stoves and furnaces, the object being to provide a sectional grate with improved means and appliances for supporting and simultaneously tilting or oscillating the grate-sections to in-  
15 sure a perfect clearing or emptying of the grate.

The invention, consists primarily, in the combination, with pivotally-supported radial grate-sections, of an annular band pivotally  
20 secured to the under sides of the sections.

The invention further consists in the various features of construction and combinations of parts, hereinafter fully described, and pointed out in the claims.

25 In the drawings, Figure 1 is a sectional plan view of the cylinder-base or ash-pit of a furnace with my improvements applied thereto. Fig. 2 is a section on the line *xx* of Fig. 1, and Figs. 3 and 4 illustrate parts in detail.

30 A represents the cylindrical ash-pit or base of a furnace, provided at equidistant points, near its lower edge, with dovetail-slotted lugs *a*, which receive the lower ends of a spanning-frame, B, consisting of two crossed semicir-  
35 cular crowning-bars, *b b*.

C represents a hub, preferably cast upon the central part of the frame B, and formed with a series of peripheral openings, *c*, which serve as bearings for the inner journals of the  
40 grate-sections.

D represents a ring arranged within the base A, at its upper edge. This ring is formed with a series of rounded slots, *d*, corresponding in number to the openings *c* of the hub,  
45 to form bearings for the outer end journals of the grate-sections. One of the slots *d* of this ring registers with a similar slot in the upper edge of the base to receive the extended arm of one of the journals.

50 The grate-sections are indicated by E, and each is formed with an inner journal, *e*, and

an outer journal, *e'*. One of the outer journals, *e'*, is formed with a headed arm-extension, E', to facilitate the tilting or oscillation of the sections. The extension E' may be made re-  
55 movable, if desired; or, as shown in Fig. 2, the upper part of the cylinder A may be removably set upon the lower portion thereof, to facilitate the insertion of the grate-bar having the extension E'.  
60

Each section E is formed on its under side, near its outer journal, with a depending lug, F, vertically slotted, as shown.

G represents an annular band formed with upwardly-projecting lugs, which enter the  
65 slots of the lugs F, and are secured by pivots H. Thus the sections are all secured together, and are adapted to turn upon their journals in unison whenever the headed arm E' is turned.  
70

It will be apparent that the construction and arrangement thus described will enable the grate to be readily cleared.

The spanning-frame B of the device, with its integral hub, may be removed whenever it  
75 is desired to repair or renew any of the parts; and any one or more of the grate-sections may be renewed without renewing the others.

Having fully described my invention, what I claim as new, and desire to secure by Letters  
80 Patent, is—

1. The combination, with a cylindrical base, of a ring formed with bearings, a central hub supported upon a frame within the base and  
85 formed with bearings, a series of radial grate-sections supported in the bearings of the hub and ring, and an annular band having a pivotal connection with each grate-section, substantially as described.

2. The combination, with a cylindrical base  
90 provided with a ring formed with bearings, as described, of a span-frame arranged within the base and supporting a hub, radially-arranged grate-sections, and an annular connecting-band secured independently to each grate-  
95 section, whereby they may be oscillated simultaneously, substantially as described.

3. The combination, with the pivotally-secured and radially-arranged grate-sections, each provided on its under side with a de-  
100 pending ear or lug, of an annular band pivotally secured to said lugs to cause the grate-

sections to oscillate simultaneously, substantially as set forth.

4. The combination, with the pivotally-secured and radially-arranged grate-sections, of  
5 an annular connecting-band independently secured to each grate-section, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

OTHNIEL A. KEIM.

Witnesses:

T. J. HIGGINS,  
J. M. MACK.