

(No Model.)

W. J. OWENS.  
GRATE.

No. 440,605.

Patented Nov. 11, 1890.

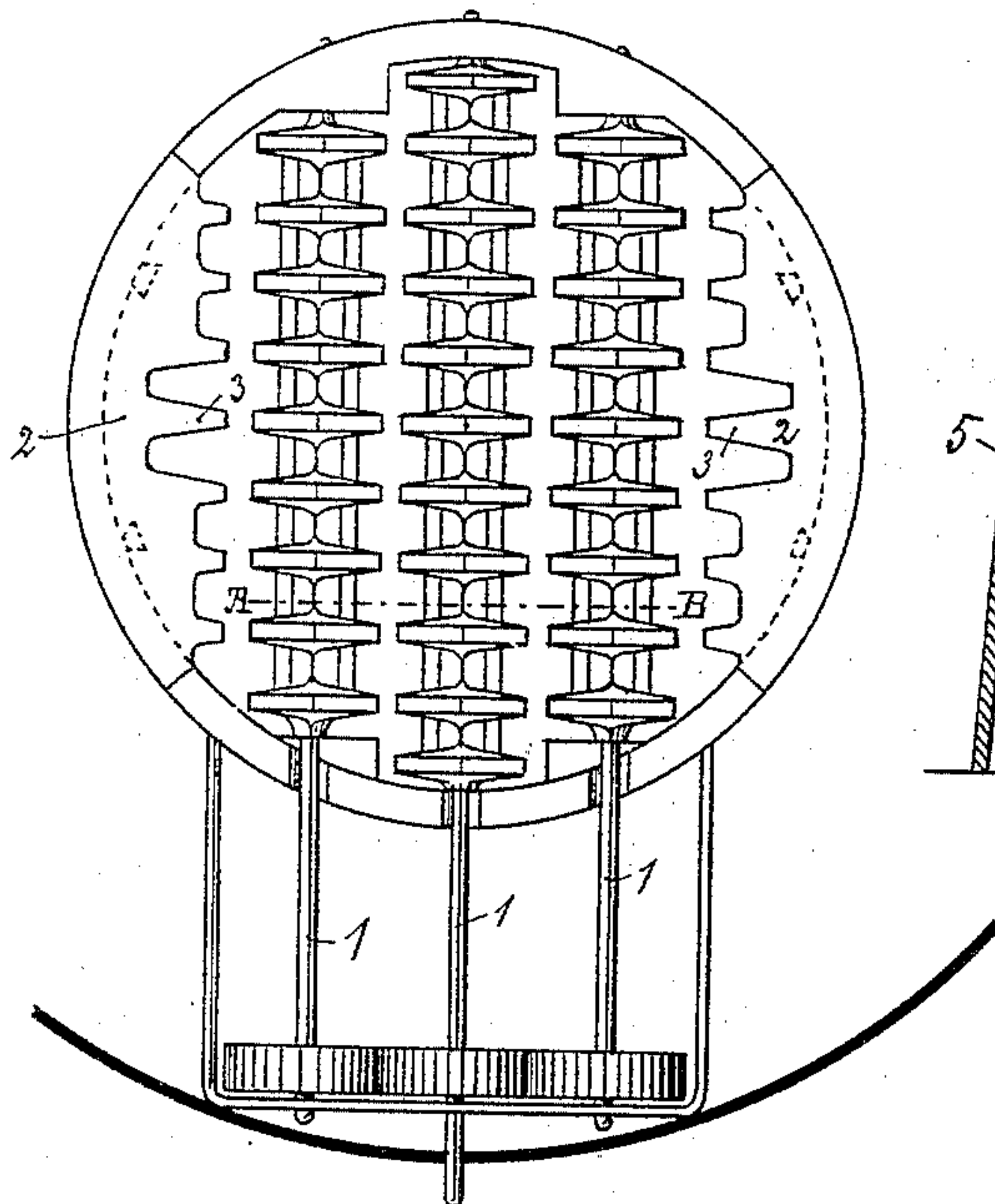


Fig. 1.

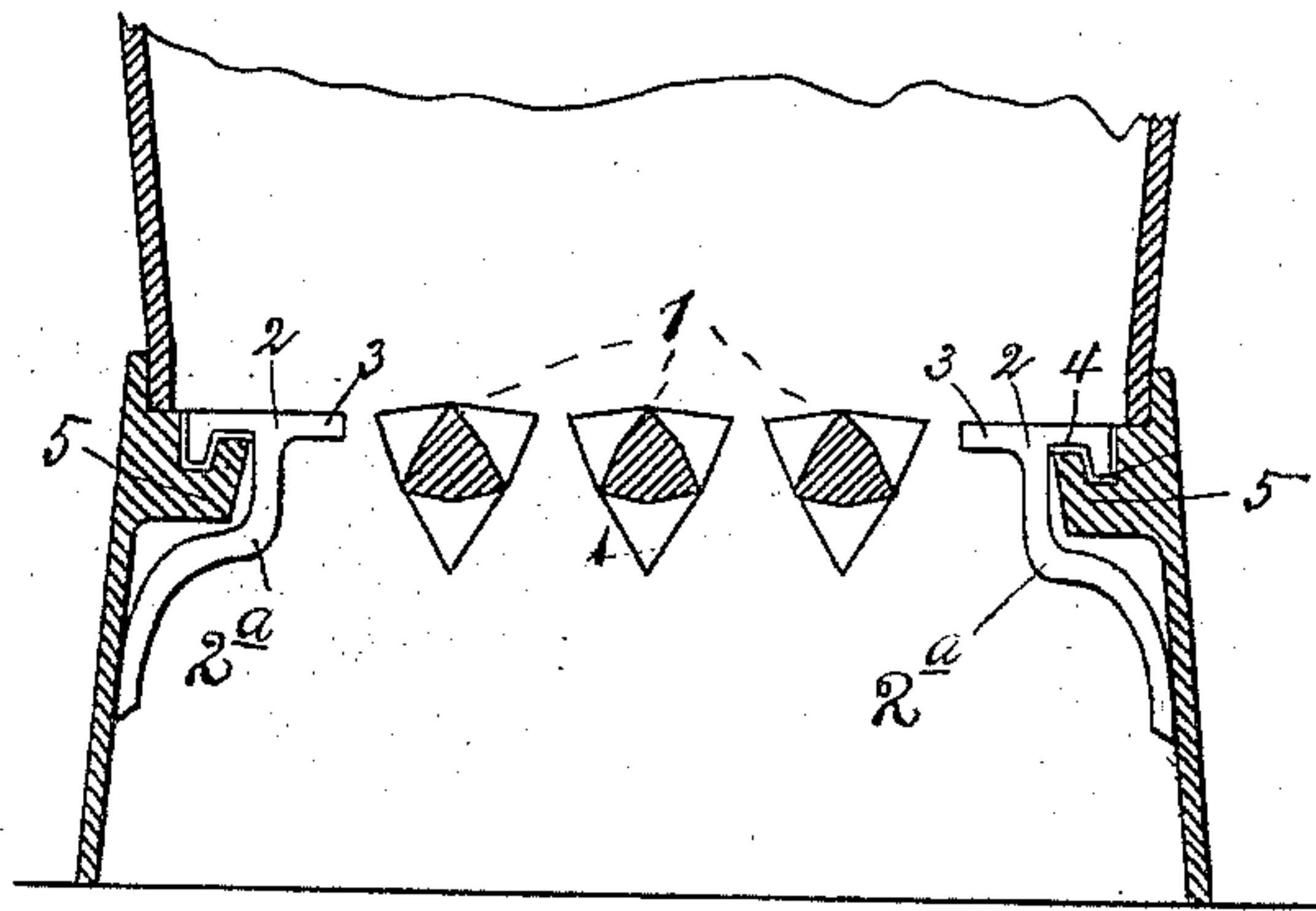


Fig. 2.

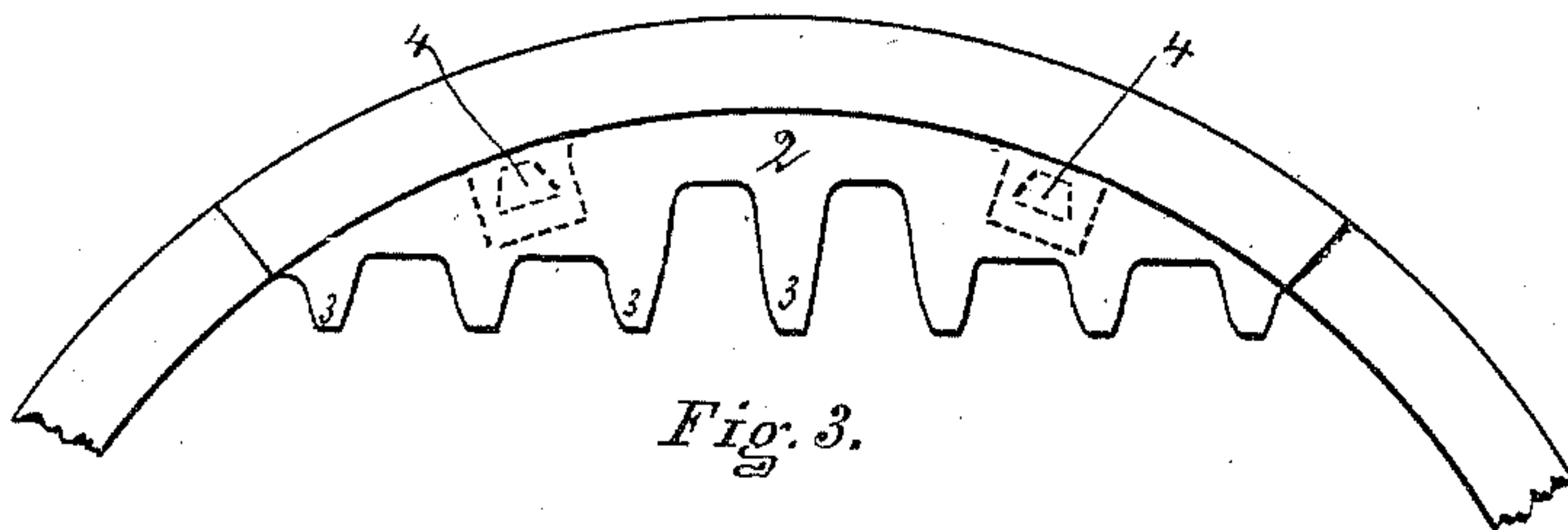


Fig. 3.

WITNESSES.

Rich. George.

McRobinson

INVENTOR.

William J. Owens  
By his atty  
Rudolph Perry

# UNITED STATES PATENT OFFICE.

WILLIAM J. OWENS, OF UTICA, NEW YORK, ASSIGNOR TO THE KERNAN  
FURNACE COMPANY, OF SAME PLACE.

## GRATE.

SPECIFICATION forming part of Letters Patent No. 440,605, dated November 11, 1890.

Application filed June 18, 1890. Serial No. 355,832. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. OWENS, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Grates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates to improvements in grates for hot-air furnaces.

In the drawings which accompany and form a part of this specification, and in which similar figures of reference refer to corresponding parts in the several figures, Figure 1 shows a plan view of a furnace-grate and ash-pit having my improvements. Fig. 2 is a cross-section of the grate-bars on line A B of the grate-bars and on a central line of a portion of the fire-pot and the furnace-base. Fig. 3 is a top view of a portion of the furnace-base and also shows a removable section of grate, herein-  
after more fully described.

My invention consists more particularly in providing a removable grate-section inside of a furnace at the base of the fire-pot and having projecting fingers extending inwardly toward the grate and on substantially the same plane with the surface of the grate to span the space between the inner surface of the fire-pot and the side of the grate-bar, and are designed for use more especially in furnaces having circular fire-pots and rotating grate-bars, but may be used in any heater employing rotating grate-bars where a space is left between the side of the grate-bar and the walls of the fire-pot.

I employ rotating grate-bars 1, mounted in the base to be rotated. At the lateral sides of the bars, between them and the inner wall of the fire-pot, I provide removable grate-sections 2, arranged upon either side of the grate, each provided with fingers 3, extending inwardly on substantially the same horizontal plane with the surface of the grate and spanning the space between the lateral edges of

the grate and the side of the fire-pot, and also provided with a downwardly-extending arm 2<sup>a</sup>, which passes below the supporting-hooks or rim of the removable grate-section and engages against the inner surface of the outer wall of the furnace-base to aid in supporting the grate-section with the fingers 3 in a horizontal position. Removable sections 2 are formed in the segment of a circle to fit the wall of the fire-pot on the outside, and are removably secured in place by hooks or flange 5 on the base of the furnace, arranged to engage in openings or depressions 4 on the under side of the removable grate-section.

Other means of attaching and detaching these sections, the substantial equivalent of that here described, will readily suggest themselves.

The drawings accompanying this application disclose substantially the form of grate-bar claimed in my other pending application, Serial No. 355,833.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a furnace or heater, the removable grate-sections fitting a part of the inner contour of the fire-pot and having projecting fingers extending inwardly in substantially the same plane with the surface of the grate-bars, a hook or flange on the fire-pot or furnace-base, and suitable openings or depressions in the removable section adapted to engage the hooks, substantially as set forth.

2. In a heater, the removable grate-sections fitting a portion of the inner contour of the fire-pot, having projecting fingers extending inwardly in substantially the same plane with the surface of the grate and provided with grooves, and the flanges on the base for engaging the grooves, substantially as set forth.

3. The combination, in a furnace, of a removable grate-section having an opening or depression on its under side, and a hook or flange on the furnace-base adapted to engage the grate-section in the opening or depression and support it in line with the surface of the grate-bars.

4. The combination, with a furnace, of the grate-section having an opening or depression



and a downwardly-extending arm adapted to engage with the furnace-base, and a hook or flange on the furnace-base, adapted to engage the opening or depression in the grate-section,  
5 and in connection with the downwardly-extending arm support the grate-section substantially in line with the grate-bars, substantially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

WILLIAM J. OWENS.

Witnesses:

M. E. ROBINSON,  
EDWIN H. RIDLEY.