

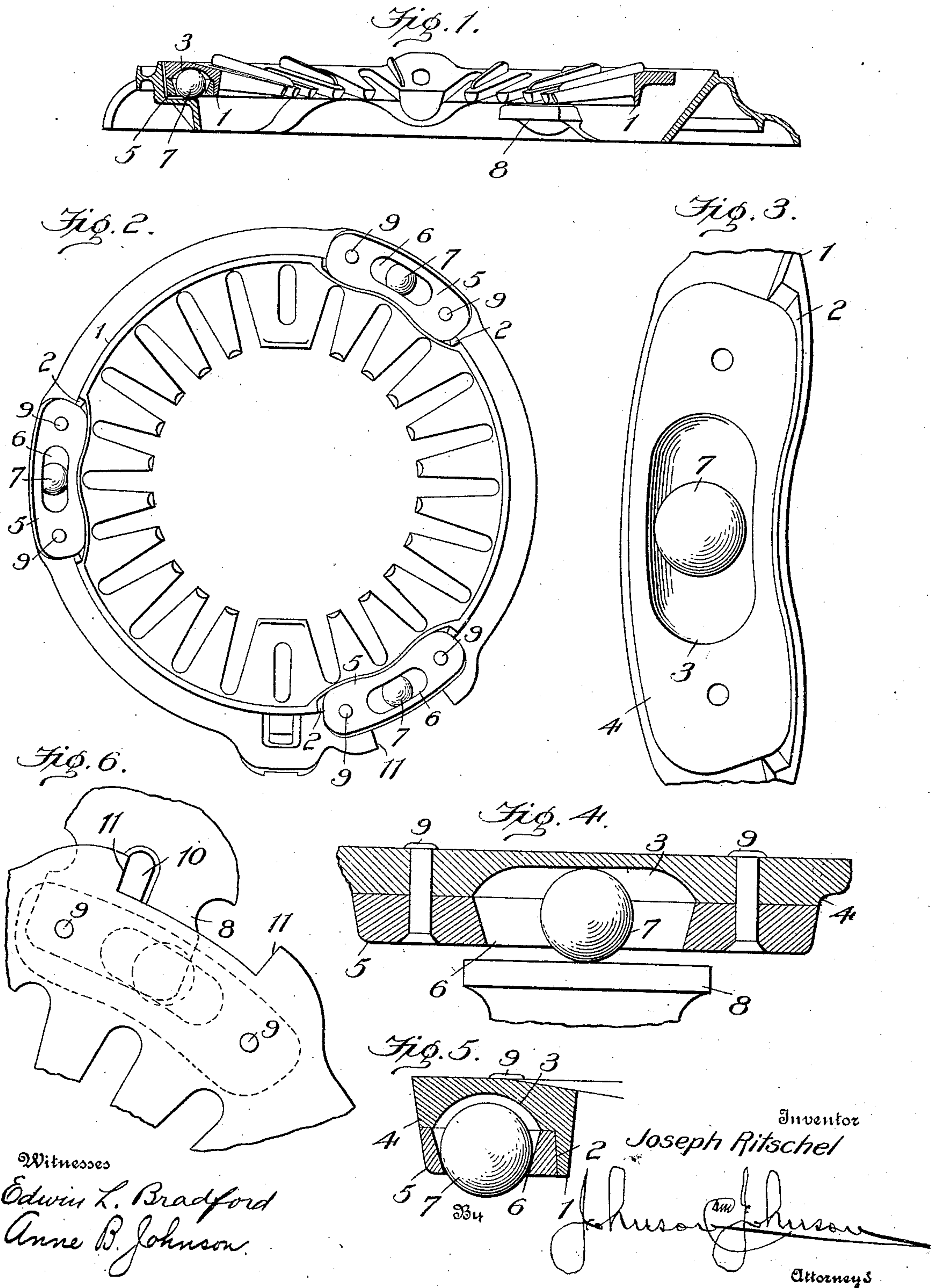
No. 835,470.

PATENTED NOV. 6, 1906.

J. RITSCHEL.

BALL BEARING FIRE RING GRATE OR GRATE MEMBER.

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UNITED STATES PATENT OFFICE.

JOSEPH RITSCHER, OF PEORIA, ILLINOIS, ASSIGNOR TO CULTER AND PROCTOR STOVE COMPANY, OF PEORIA, ILLINOIS, A CORPORATION OF ILLINOIS.

BALL-BEARING FIRE RING GRATE OR GRATE MEMBER.

No. 835,470.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed April 28, 1906. Serial No. 314,188.

To all whom it may concern:

Be it known that I, JOSEPH RITSCHER, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Ball-Bearing Fire Ring Grate or Grate Members; 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 appertains to make and use the same.

As an improvement in rotary or vibrating grate-rings or grates for stoves and furnaces I have provided the grate-ring or grate itself with ball-bearings confined on the under side of the rim of the grate-ring or grate by a cover which, with the grate-rim, forms a closure or pocket open at its bottom with its walls flaring upward from said opening, rendering thereby the closure or pocket self-retaining for the ball, self-cleaning, and prevents the collection and retention of cinders and dust within the closure or upon the ball, allowing it free and easy rolling movements in every movement of the grate part, so that the shaking of the grate part is made easy upon its supporting-frame.

In rotary grates with ball-bearings, so far as I know and can find, the ball-bearings have been carried by the supporting member of the grate, and therefore constantly liable to hard and unsatisfactory working from cinders and ashes collecting around the balls below the shaking part and preventing their free rolling movements, and in the claim appended hereto I will point out that which is new in connection with the accompanying drawings, in which—

Figure 1 is a vertical section of a rotary grate-ring embodying my improvement. Fig. 2 shows the grate-ring inverted and its ball-bearing pockets. Fig. 3 shows one of the concave seats in the under side of the rim for the ball. Fig. 4 is a vertical section showing a portion of the grate-rim and its ball-containing pocket. Fig. 5 shows a vertical cross-section of the grate-rim with its ball-containing pocket. Fig. 6 shows a portion of the top of the grate-rim and the shoulders for limiting its shaking movements. The grate-ring has the usual socket for the shaking-iron.

While I have shown a shaking grate-ring having ball-bearings and intended to be used

with a grate below the ring, obviously a complete flat grate may have its rim provided with ball-bearings in self-cleaning closures or pockets in accordance with my improvements.

The under side of the ring-grate rim is formed with a depending circular guide-curb 1, the outer wall of which is formed with a plurality of recesses 2, while the under side of the rim has at each recess a concave formation 3, bounded by a ridge 4, and on this ridge is seated a cover 5, the interior walls of which have a flaring or concave formation terminating in an oblong opening 6 at the under side of the cover and forming a closure or pocket for a ball-bearing 7, having a diameter to cause it to project through said opening beyond the plane of the under side of the cover to cause the ball to have a bearing upon the supporting-frame 8 or under member of the grate and prevent its displacement from the pocket. The cover is preferably secured to the rim by rivets 9, and as the interior concave walls of the cover open downward no cinders or ashes can gather within the pocket and cause the binding or cramping of the ball in the movements of the grate. The concavity in the under side of the rim forms a shallow inverted hollow, while the inner sides and ends of the cover flare upward from the bottom opening, so that should any cinders or ashes pass into the closure or pocket they will fall out, so that no obstruction can lodge on the walls of the closure or around the ball. The fixed member of the grate or grate-ring has the usual abutment 10, against which shoulders 11 on the rim of the grate or grate-ring strike to limit the shaking movements of the grate-ring, which is used with what is known as a "duplex" grate.

I claim—

1. A grate or grate member for stoves and furnaces having on the under side of its rim a plurality of concave formations, a plate secured to the rim forming a cover for each concave formation and having an oblong opening in its under side and a ball confined by said cover between said rim and said cover whereby to form self-cleaning pockets for the balls.

2. A grate or grate member for stoves and furnaces and a plurality of plates or covers secured to the under side of the grate-rim and

forming with said rim closures or pockets
each having an opening on its under side, and
ball-bearings confined within said closures
and projecting through the openings of said
5 covers to support the grate and render the
closures and the balls self-cleaning.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

JOSEPH RITSCHER.

Witnesses:

A. V. CULTER,
J. C. Fox.