

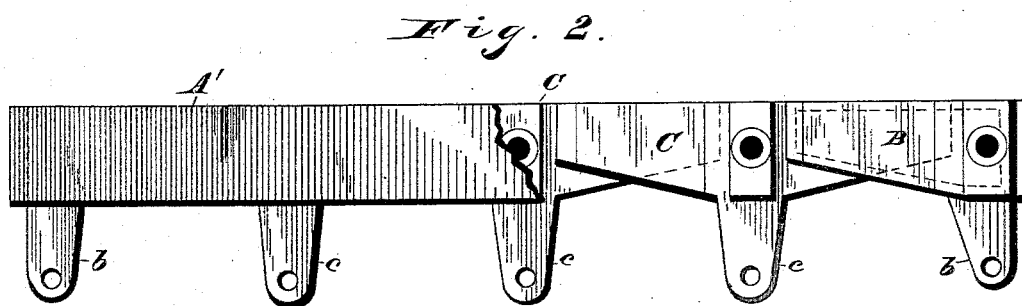
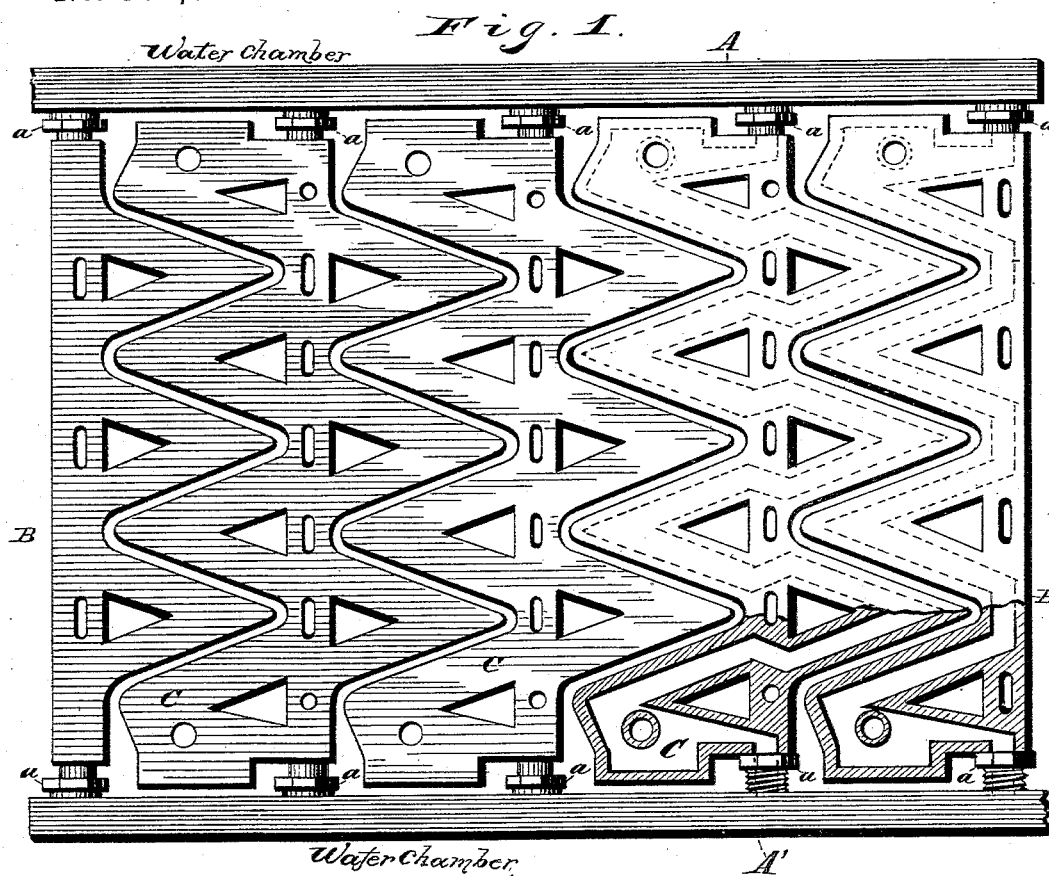
(No Model.)

W. L. GILMORE & T. FLEMING.

ROCKING WATER GRATE.

No. 304,095.

Patented Aug. 26, 1884.



WITNESSES

*John W. Morrow*  
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INVENTOR

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# UNITED STATES PATENT OFFICE.

WALTER L. GILMORE AND THOMAS FLEMING, OF CLEVELAND, OHIO.

## ROCKING WATER-GRATE.

SPECIFICATION forming part of Letters Patent No. 304,095, dated August 26, 1884.

Application filed November 24, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, WALTER L. GILMORE and THOMAS FLEMING, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Rocking Water-Grates; and we 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.

Our invention relates to improvements in rocking water-grates; and it consists in certain features of construction, and in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of our improved grate, showing also the side pieces in which the grates are pivoted. Fig. 2 is a side elevation with a portion of the side piece broken away, showing the ends of the grates.

A and A' are hollow side pieces, in which the grates B and C are pivoted. These side pieces are provided with stuffing-boxes and followers *a*, for compressing packing—preferably asbestos—around the pivoted ends of the grates and forming a water-tight joint.

The grates C have a central bar terminating in the pivoted ends aforesaid, and are provided with fingers on either side, arranged substantially as shown. These grates are hollow, having a continuous passage-way from end to end through the fingers and central bar, as shown in dotted lines and in section on the right-hand bars, and that are in open relation with the cavities or passage-ways in the side pieces.

The grates B are constructed the same as the grate C, except they have fingers only on one side, and are designed to set close to the ends of the furnace.

Various vertical openings may be had through the grates to increase the air-spaces, as shown, wherever they can be located without interfering with the said internal passage-way.

The grates are provided with pendent arms, respectively *b* and *c*, as shown in Fig. 2. These arms may be pivotally attached to a single bar, by which they may be rocked or shaken simultaneously, or may have a separated rod attached to each of the arms, so that each grate may be operated independent of the other grates.

In operating the grates, the feed-water is supplied, say, through the side piece, A', and from the right-hand end. From thence it passes through the passage-ways in the grates into the side piece, A; from thence—say through the left-hand end—into pipes leading to the boiler. The feed-water is usually more or less heated in some manner before it reaches the grates, and the additional heat it then receives will usually raise the temperature of the feed-water to the boiling-point, in which condition it enters the boiler. The passage of the feed-water through the grates keeps them from being overheated and burned, so that these grates will remain in good condition for years under conditions that would burn out and destroy a solid grate in two or three months. Also, by reason of the low temperature of these grates, caused by the water, as aforesaid, the clinkers will not adhere to them, and thus is saved another great source of annoyance in the management of furnaces for steam-boilers.

These grates may be shaken to free the fire from ashes and to break the clinkers, or they may be tilted so far as to dump the fire in the same manner as ordinary rocking grates.

What we claim is—

1. The combination, with hollow side pieces forming water-chambers, and stuffing-boxes secured to their inner sides, of a series of rocking grate-bars having their opposite ends journaled in said stuffing-boxes, said grate-bars being formed with water-passages which communicate with the water-passages in the hollow side pieces, substantially as set forth.

2. Rocking water-grates provided with fingers arranged substantially as shown, and interlocking with fingers of adjacent grates, and each grate provided with a continuous water-passage from end to end of the grate, and through all of the said fingers, and provided with pivoted bearings secured by stuffing-boxes forming water-tight joints, so that the feed-water may be forced through the grates on its passage to the boiler, substantially as set forth.

In testimony whereof we sign this specification, in the presence of two witnesses, this 20th day of November, 1883.

WALTER L. GILMORE.  
THOMAS FLEMING.

Witnesses:

ALBERT E. LYNCH,  
CHAS. H. DORER.