(No Model.)

K. M. JARVIS.

FURNACE GRATE.

No. 260,028. Patented June 27, 1882.

Fig. 1.

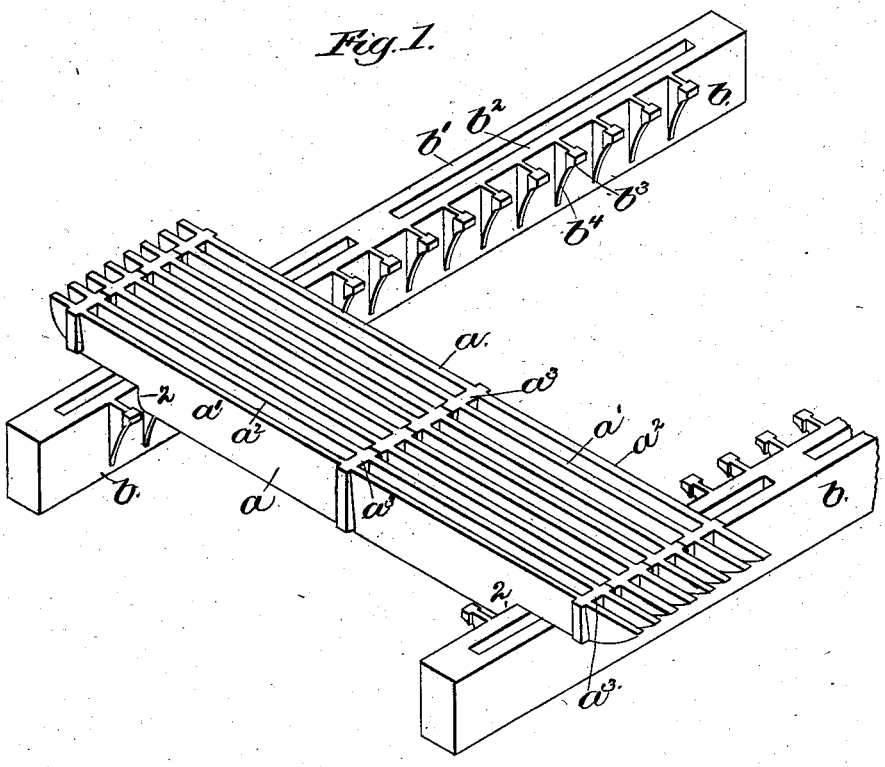
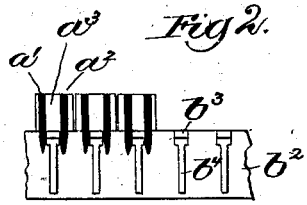


Fig 2.



Witnesses.
John F. C. Preinkert
Fred A. Powell

Inventor.
Kingsbury M. Jarvis
by Crosby & Gregory
Attys.

UNITED STATES PATENT OFFICE.

KINGSBURY M. JARVIS, OF MALDEN, ASSIGNOR OF ONE-HALF TO ALBERT F. UPTON, OF NEWTONVILLE, MASSACHUSETTS.

FURNACE-GRATE.

SPECIFICATION forming part of Letters Patent No. 260,028, dated June 27, 1882.

Application filed April 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, KINGSBURY M. JARVIS, of Malden, county of Middlesex, State of Massachusetts, have invented an Improvement in Furnace-Grates, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to a grate for furnaces, and has for its object to produce a durable grate in which no portion of the grate-bars is liable to be burned out. The grate-bars are supported upon bearing-bars instead of having their ends supported on the masonry, so that there is a free passage for the draft at the ends of the said bars, and they are consequently kept cool and prevented from burning.

The invention consists in the combination of the said bearing-bars provided with a series of lateral projections or bar-holding studs, with the grate-bars made of two parallel webs joined together at suitable intervals, and provided with shoulders to engage the bearing-bars and prevent longitudinal movement of the said grate-bars, the holding-studs of the bearing-bars being received between the webs, and thus preventing lateral movement of the said grate-bars, each of which is held in place independently of the others.

Figure 1 shows in perspective view a sufficient portion of a grate-bar to illustrate this invention, and Fig. 2 is a transverse section of a portion of the grate-bars.

The grate-bars *a* are supported at some distance from their ends upon bearing-bars *b*, themselves supported upon the masonry in any suitable manner. The grate-bars *a* are shown as consisting of parallel longitudinal webs a' a^2, united at suitable intervals by cross-pieces a^3, they being made somewhat shorter than the distance between the side walls of the furnace, so that a small space is left between the ends of the bars and the said side walls for the passage of the draft, thus preventing the said bars from burning at their ends, as happens when the ends are supported on the masonry so that the air cannot circulate around them. The portion of the bars *a* that lies between the bearing-bars *b* is made of greater depth than the portion that rests upon and projects over the said bearing-bars, thus forming shoulders 2 to engage the said bearing-bars and prevent the longitudinal movement of the said grate-bars in order to maintain the space between the ends thereof and the side walls of the furnace constant.

The bearing-bars *b* are also shown as made of two webs, b' b^2, having a space between them for the circulation of air, and are provided with a series of lateral projections, b^4, shown as provided with bar-holding studs, the said studs being of a width equal to the space between the webs a' a^2 of the grate-bar, so that they engage the deeper portion of the said webs lying between the bearing-bars, as shown in Fig. 2, to prevent lateral movement of the grate-bars on the said bearing-bars.

The projections b^4 are narrower than the space between the webs a' a^2, so as to permit the passage of air at either side of the said projections and entirely around the bar-holding studs b^3, which are thus kept cool.

In a grate of this kind the spaces between the bars are maintained equal, and the bars are very durable, as they are not exposed to the action of the heat more in one place than another.

I am aware that a grate-bar having a cross-section like an inverted U has previously been used in connection with a rocking bearing-bar having projections entering between the downwardly-extending portions or sides of the said bar and acting upon the transverse upper portion thereof to raise the said bar and agitate the fuel thereon; but in such bars there is no circulation of cool air between the said sides of the bar, so that the middle of the upper portion is extremely liable to become burned, and such bars are very liable to warp.

I claim—

The double-webbed grate-bar composed of two parallel webs, a' a^2, shouldered at 2, and connected at intervals by cross-pieces a^3, thus leaving free open spaces between the said webs for the passage of air and ashes, combined with the fixed bearing-bars on which rest the ends of the grate-bars beyond the shoulders 2, the said bearing-bars having laterally-projecting portions which enter the open spaces between the webs of each bar at the said shoulders, substantially as and for the purpose described.

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

KINGSBURY M. JARVIS.

Witnesses:
BERNICE J. NOYES,
JOS. P. LIVERMORE.