(No Model.)

J. M. R. KENNEDY.

GRATE FOR BURNING SAWDUST, &c.

No. 421,288. Patented Feb. 11, 1890.

Fig. 1.

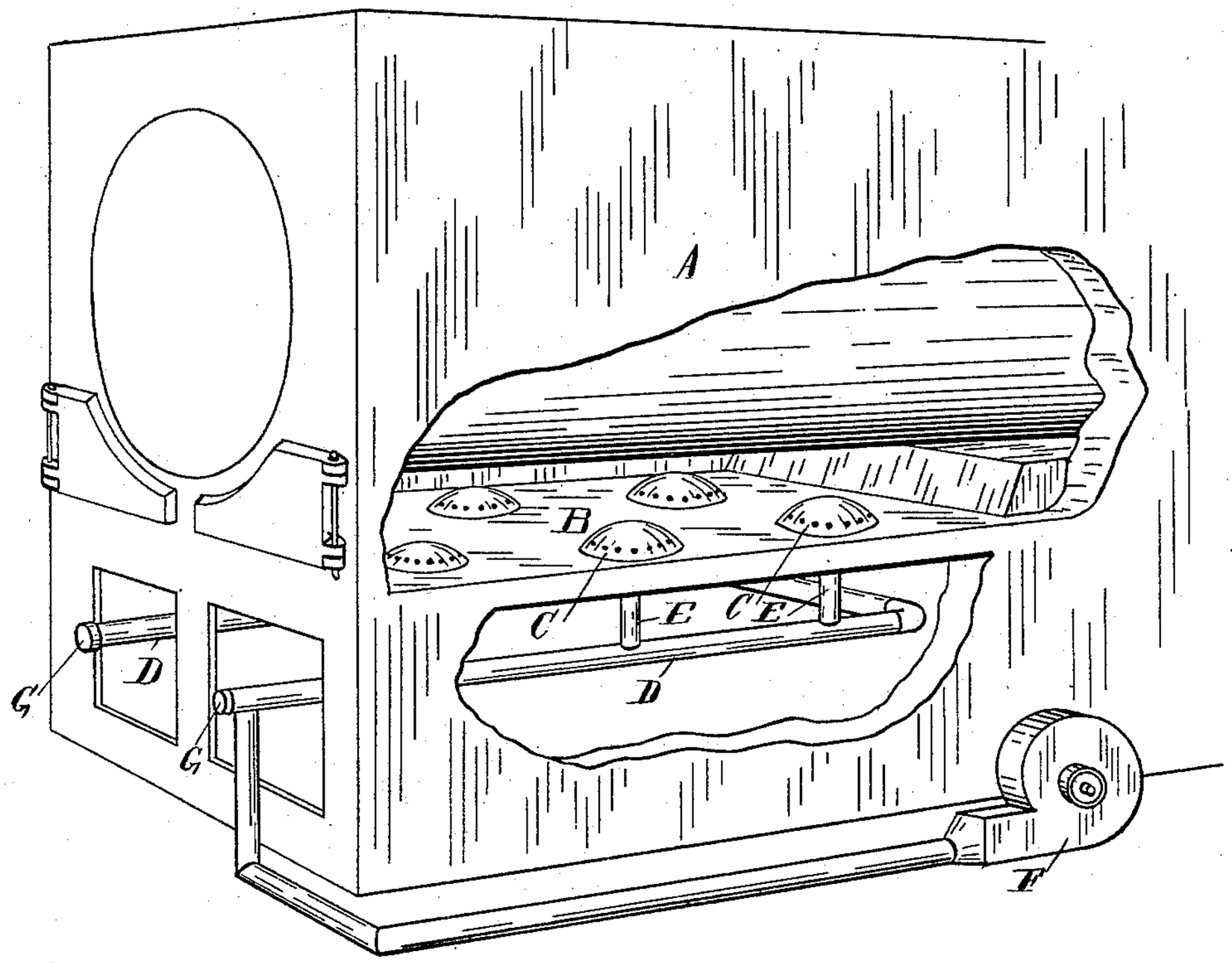


Fig. 2.

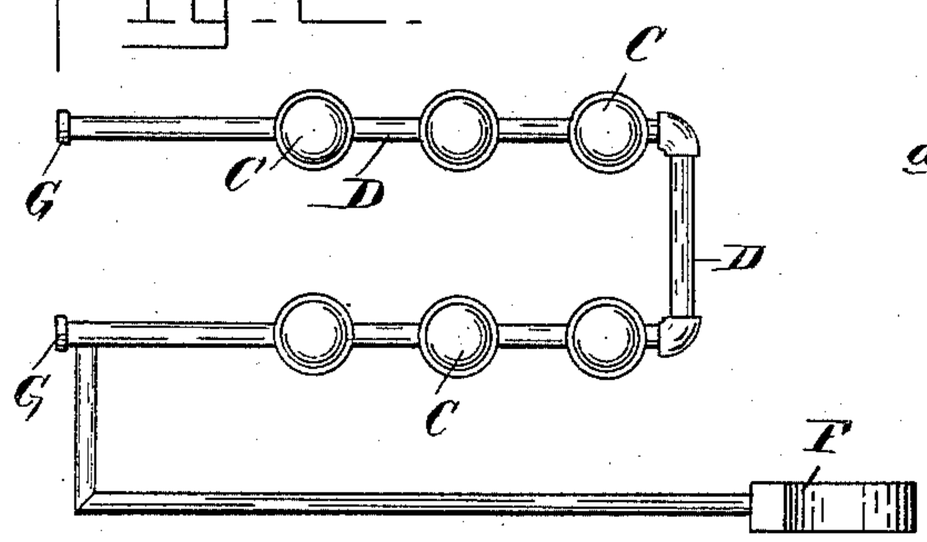
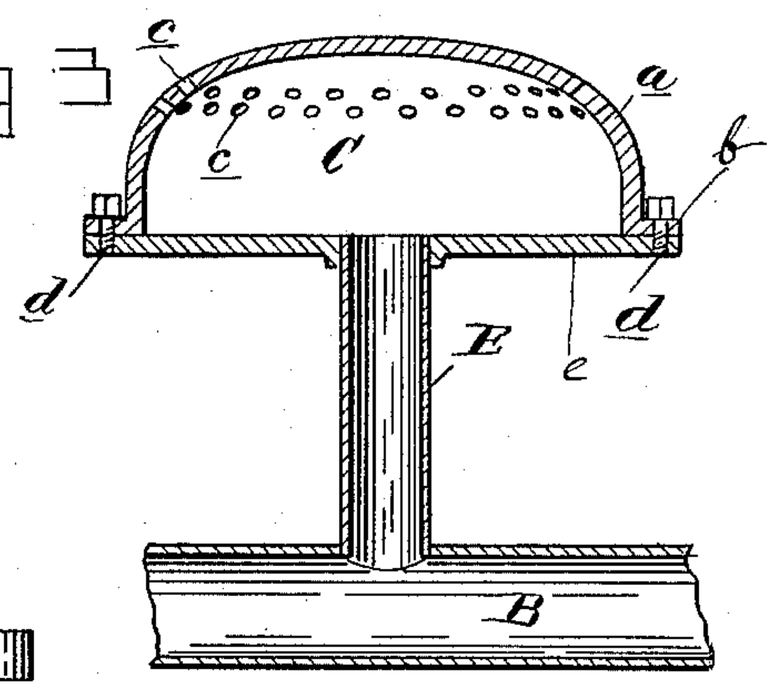


Fig 3



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES M. R. KENNEDY, OF SHEPHERD, MICHIGAN.

GRATE FOR BURNING SAWDUST, &c.

SPECIFICATION forming part of Letters Patent No. 421,288, dated February 11, 1890.

Application filed August 30, 1889. Serial No. 322,401. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. R. KENNEDY, a citizen of the United States, residing at Shepherd, in the county of Isabella and State of Michigan, have invented certain new and useful Improvements in Grates for Burning Sawdust and other Fuel, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in grates for burning sawdust; and the invention consists in the peculiar construction and arrangement of the parts, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a steam-generator provided with my improved grate for burning sawdust, a portion of the side walls of the generator being broken away to expose the grate. Fig. 2 is a plan of the air-feeding devices forming a portion of the grate, and Fig. 3 is a vertical central section through one of the air-distributing chambers of the grate.

A is a steam-generator of the usual construction, provided with my improved grate, which consists of the solid imperforate bed B and the distributing-air chambers C, placed upon the bed at suitable distances apart, the feeding-pipes D, underneath the bed B, the distributing-pipes E, which connect the distributing-chambers with the feed-pipes D, and the blower or fan F, which is placed in suitable proximity outside the generator and carries the air to the feed-pipes through a suitable connection.

The bed B is preferably constructed of brick, and has the usual extent of the ordinary grate-surface, more or less, and is at about the usual height of the ordinary grate.

The air-distributing chambers consist of a more or less spherical casting *a*, which forms an inverted cap, and is provided with the annular flange *b* and the annular rows of perforations *c* in the slanting sides of the casting. This casting is secured by means of bolts *d* to a base-plate *e*, which in turn rests upon the bed B, and has a suitable central aperture for connecting thereto the vertical distributing-pipe E, which carries the air from the feed-pipe D into the air-chamber.

I preferably arrange the distributing-air chambers C in rows, as shown, with the distributing-pipe D entering through the front of the generator, preferably through one of the ash-pit doors, with the return-bend projecting outwardly through the other ash-pit doors, and with suitable removable caps G placed upon the outer ends of this distributing-pipe for the convenience of cleaning.

In operation the sawdust is shoveled or fed in the usual manner through the furnace-doors, and the air for the combustion is furnished by the fan or blower F, which first distributes it into the feed-pipe D, and thence through the connections E into all of the distributing-chambers, through which the air issues in a great number of small jets through the perforations *c*, keeping the burning sawdust thereby in motion, drying it first by contact with the heated surfaces and rendering it easily combustible, and especially avoiding the difficulties experienced in burning sawdust of having an accumulation of unburned material upon the bed.

The formation of the distributing-chambers does not in any way obstruct the furnace, and the whole device may be readily put in place, and it effects a very equal distribution of air.

What I claim as my invention is—

In a grate for burning sawdust, the combination of an imperforate bed having a series of air-distributing chambers placed thereon at intervals, said chambers consisting of dome-shaped metal caps with imperforate tops, a series of vertical supply-pipes leading into the chambers *a*, a feed-pipe into which the vertical pipes lead, and a blower, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 5th day of July, 1889.

JAMES M. R. KENNEDY.

Witnesses:

GEO. A. GREGG,

P. M. HULBERT.