

G. D. PUTNAM.

Rocking Grates for Furnaces.

No. 149,247.

Patented March 31, 1874.

Fig. 1.

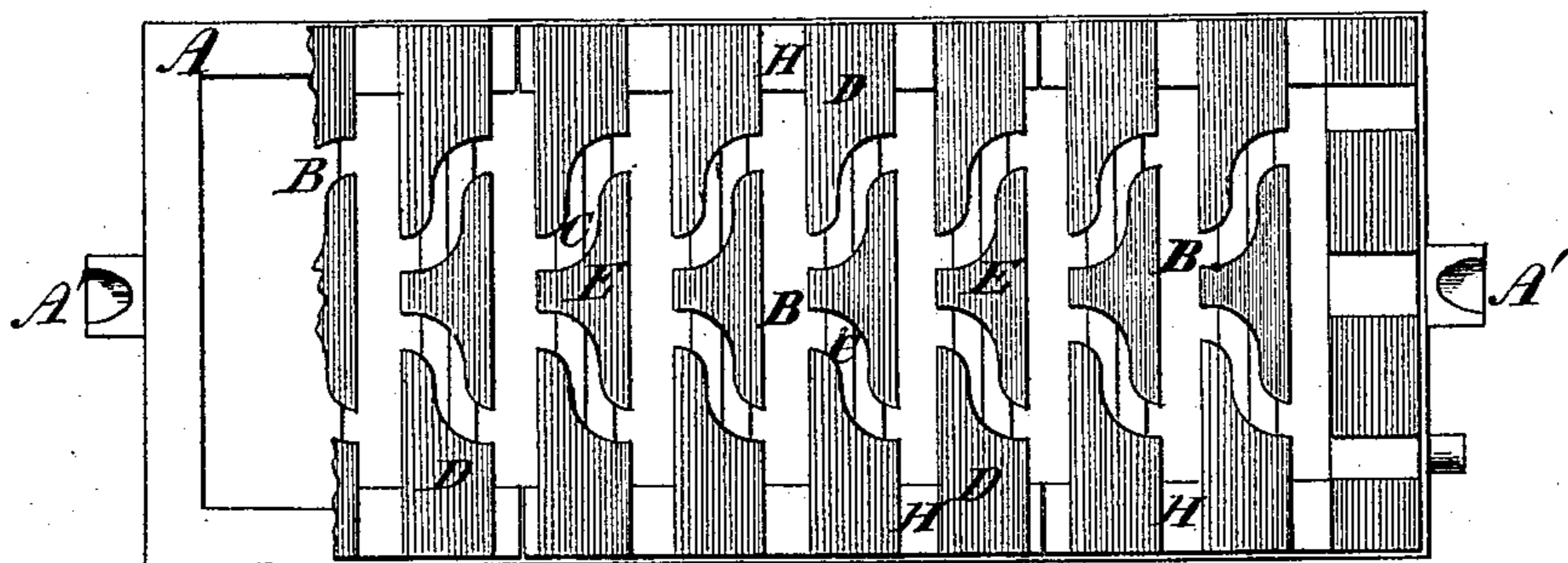


Fig. 2.

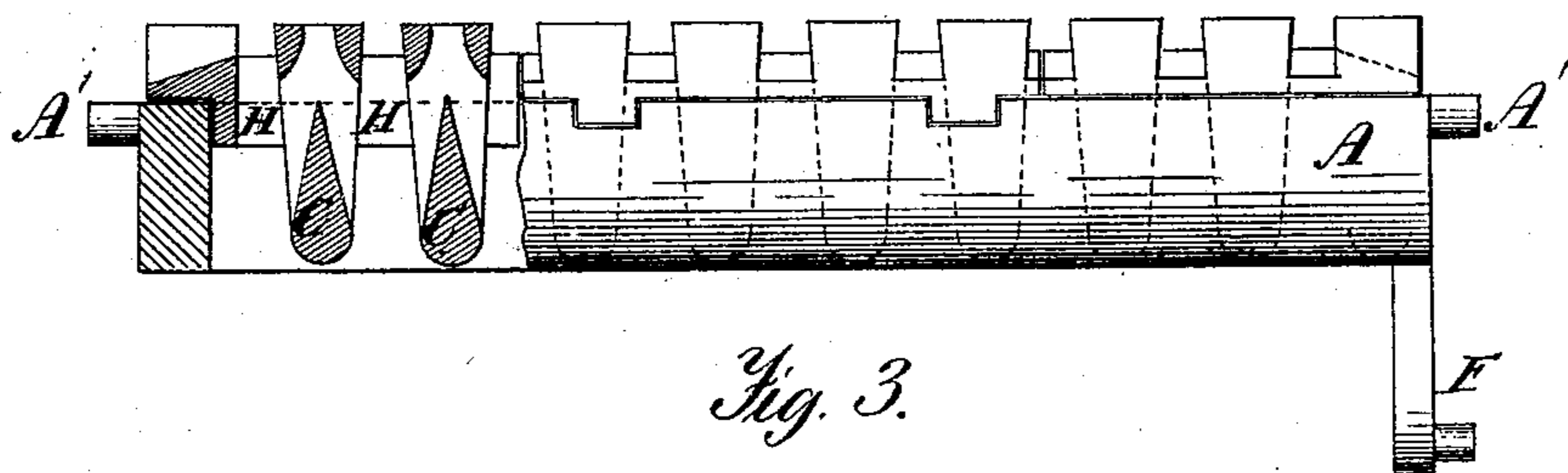
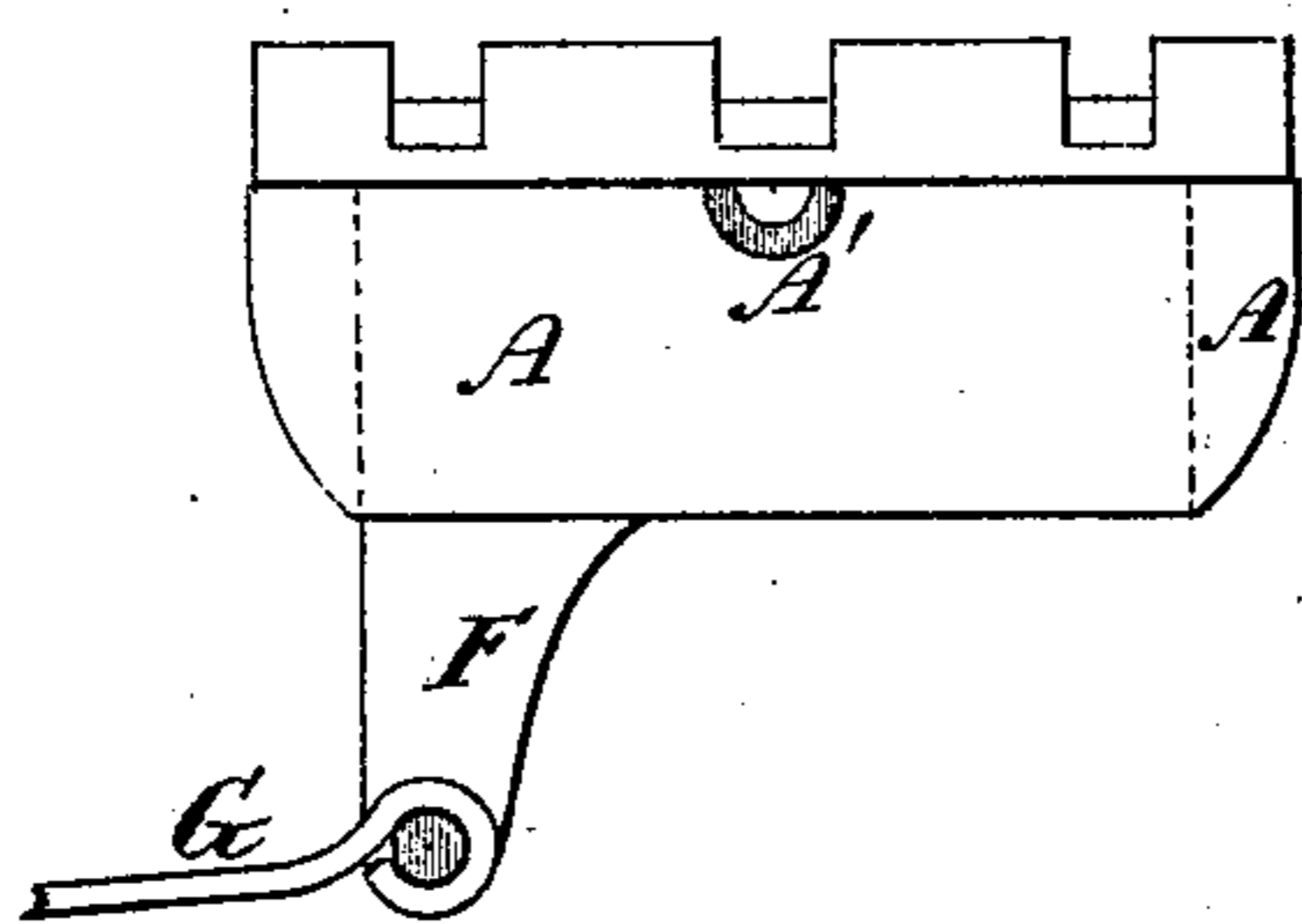


Fig. 3.



Witnesses.
A. Ruppert
P. Edin J. Cils

Geo. D. Putnam
Inventor.
D. P. Holloway & Co
Atty

UNITED STATES PATENT OFFICE.

GEORGE D. PUTNAM, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ROCKING GRATES FOR FURNACES.

Specification forming part of Letters Patent No. **149,247**, dated March 31, 1874; application filed August 30, 1873.

CASE C.

To all whom it may concern:

Be it known that I, GEORGE D. PUTNAM, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Rocking Grates for Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings making part of this specification, in which—

Figure 1 is a plan view. Fig. 2 is a vertical longitudinal section, and Fig. 3 is an end elevation.

The same letters are employed in all the figures in the designation of identical parts.

My invention relates to rocking grates especially designed for use in the fire-box of locomotive-engines, but also applicable to other kinds of furnaces. My improvement consists in combining, with a longitudinal rocking frame, transverse sectional grate-bars, constructed in the manner hereinafter to be described, so as to diffuse the draft uniformly through the bed of incandescent fuel.

In the annexed drawings, A is a rectangular frame, having on each end lugs A' A', upon which the frame is suspended at the bottom of the fire-box or furnace, in such manner as to have a slight rocking action. The grate-bars B are cast in sections, each bar being composed of several sections or parts, of which C is the web or body of the bar. It is beveled on both faces above to a feather edge, so as to offer the least obstruction to the ascending air and falling ashes. On each end of the web is cast a half-rest, D D, which form supports for the bed of fuel, in conjunction with the parts E. These rests D and E are formed as shown in the drawings, and so arranged, in relation to one another, as to leave air-spaces of uniform width between them; and the cross-bars of the sections are set at such distances apart that spaces of about the same width shall be left between the different bars. The rests D and E are placed immediately over the web, on both sides of which they are equally supported. They are undercut in opposite bev-

els, so that anything passing between them at their upper surfaces may not be impeded in falling into the ash-pit. An arm, F, attached to the frame, serves to impart a vibratory or rocking motion to the grate. A rod, G, may be extended to within ready reach of the operator. The sections B are formed with flanges H H, to fit the upper edge of the frame and hold the sections securely in place.

The bars being thus formed in sections, arranged transversely across the rocking frame, they cannot be displaced by the rocking motion; and, constantly maintained in parallel planes, they will always be kept in position for the cold air to pass along their faces, and consequently none of them will be liable to be unduly heated.

Rocking or shaking grates are peculiarly exposed to the action of the fire, because, the ashes being thoroughly shaken out, fresh beds of glowing coals are repeatedly brought into immediate contact with the surface of the grate-bars. Single bars, longitudinally placed, as is commonly done, are liable to be shaken out of position, and, when canted, they will interrupt the draft, and soon become red-hot and be ruined.

Against this trouble I provide by casting the grate-bars in transverse sections, and at the same time subdivide the grate-bars into parts or sections, thus permitting the draft to come into immediate contact with a greatly-increased surface, thus keeping down the temperature thereof.

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

The combination, in a rocking grate, of a longitudinal rocking frame and transverse sectional grate-bars, constructed substantially as set forth.

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

GEORGE D. PUTNAM.

Witnesses:

C. H. CROSBY,
HENRY COLLINSON.