

(No Model.)

T. E. BARROW.

COMBINED SHAKING AND DUMPING GRATE.

No. 315,460.

Patented Apr. 14, 1885.

Fig. 1.

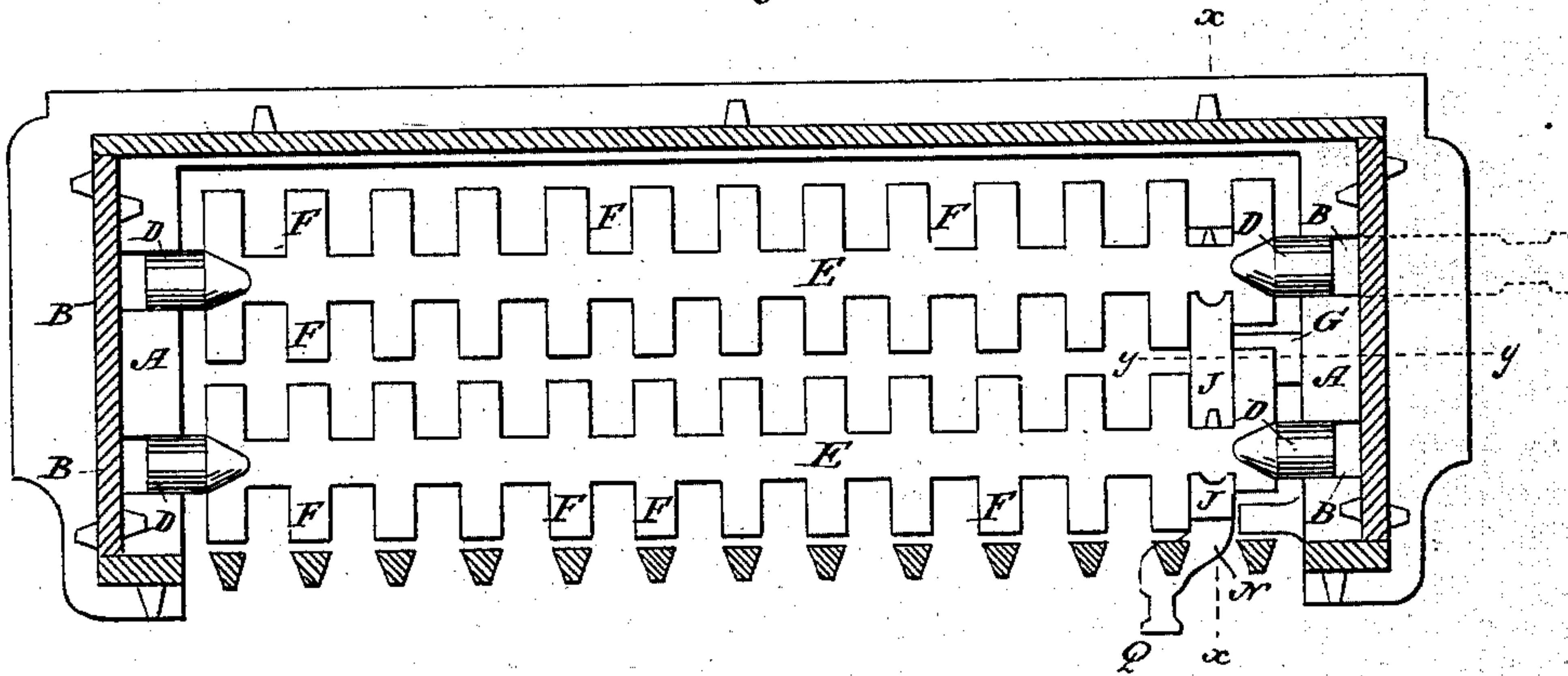


Fig. 2.

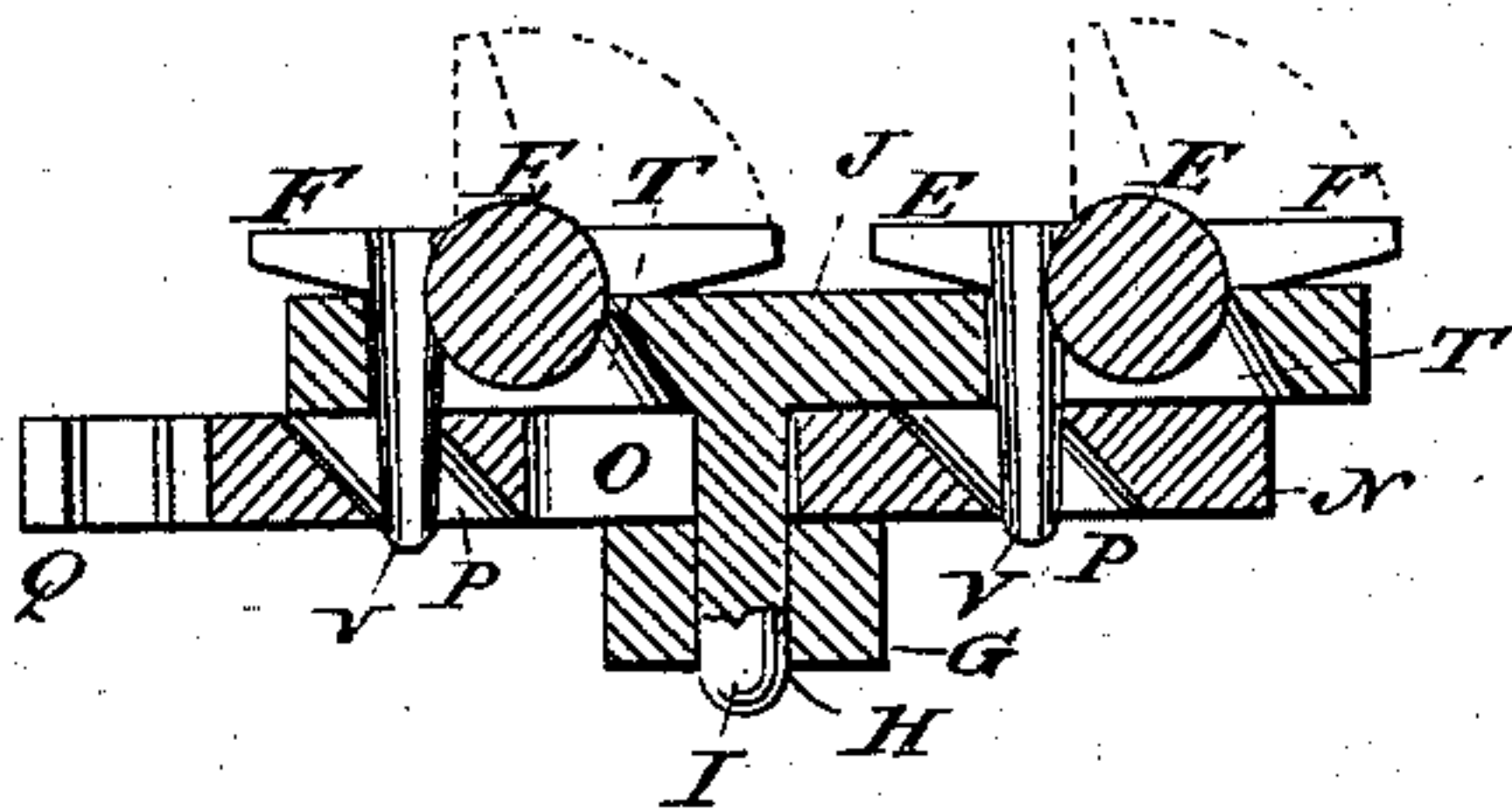


Fig. 5.

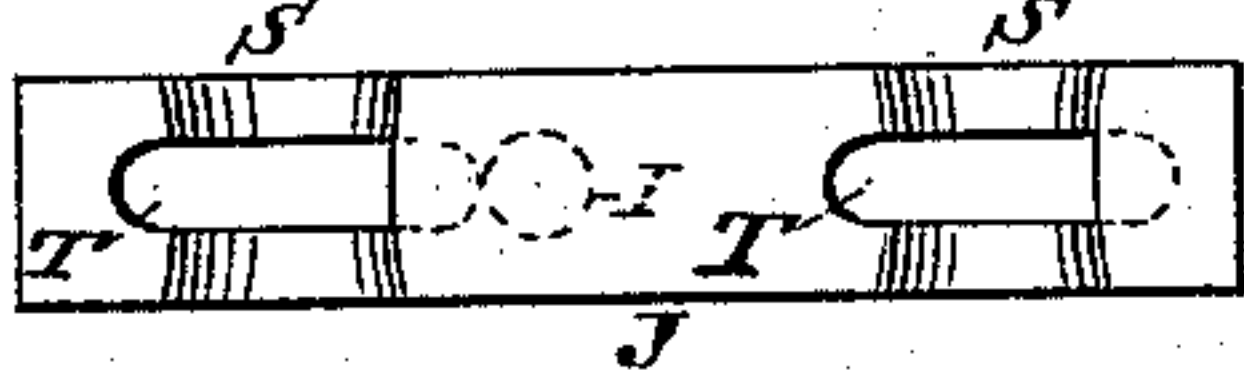


Fig. 6.

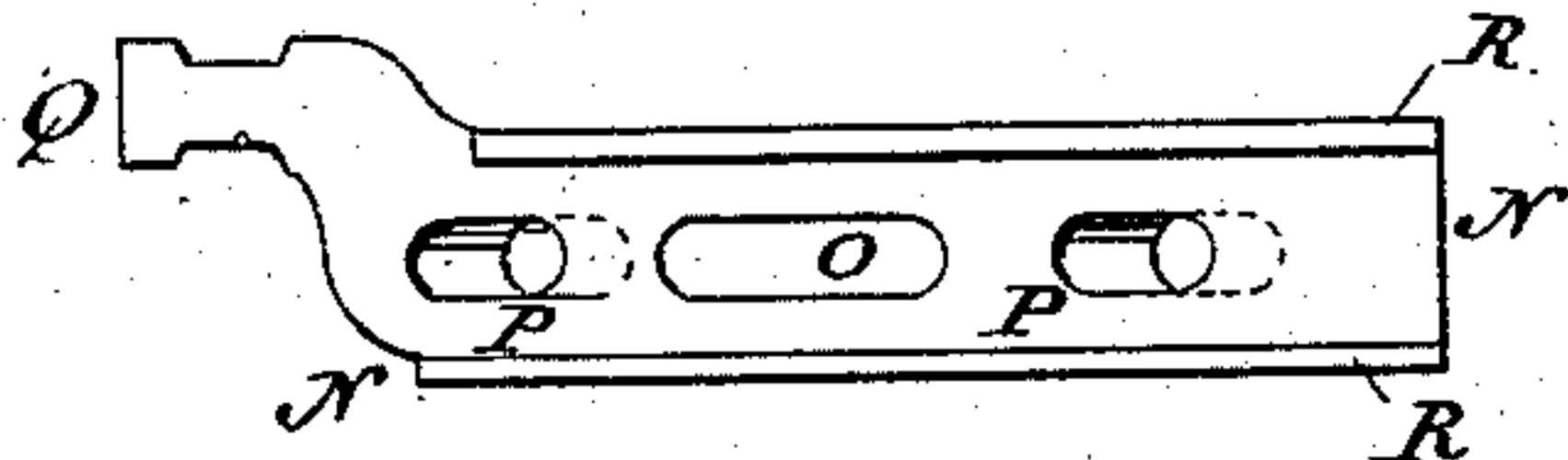


Fig. 3.

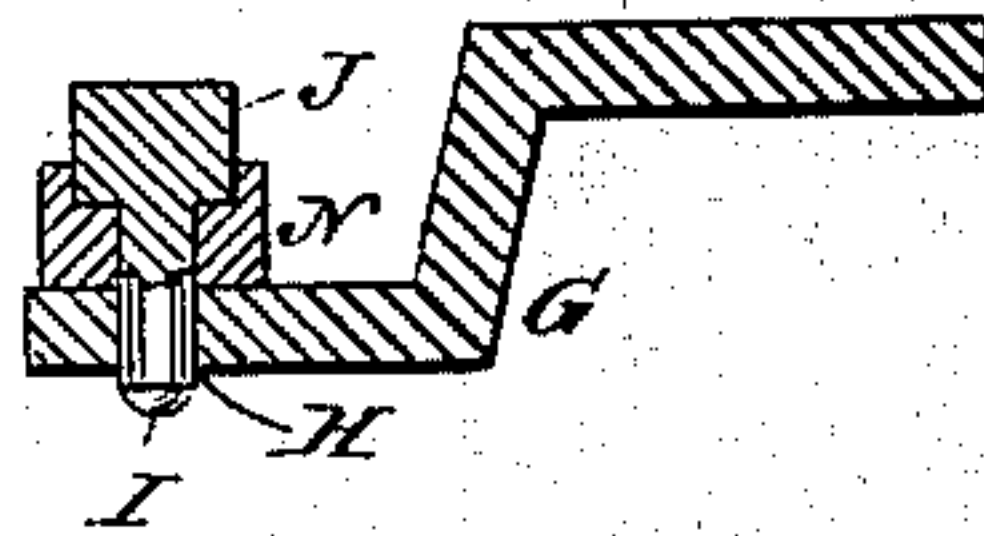
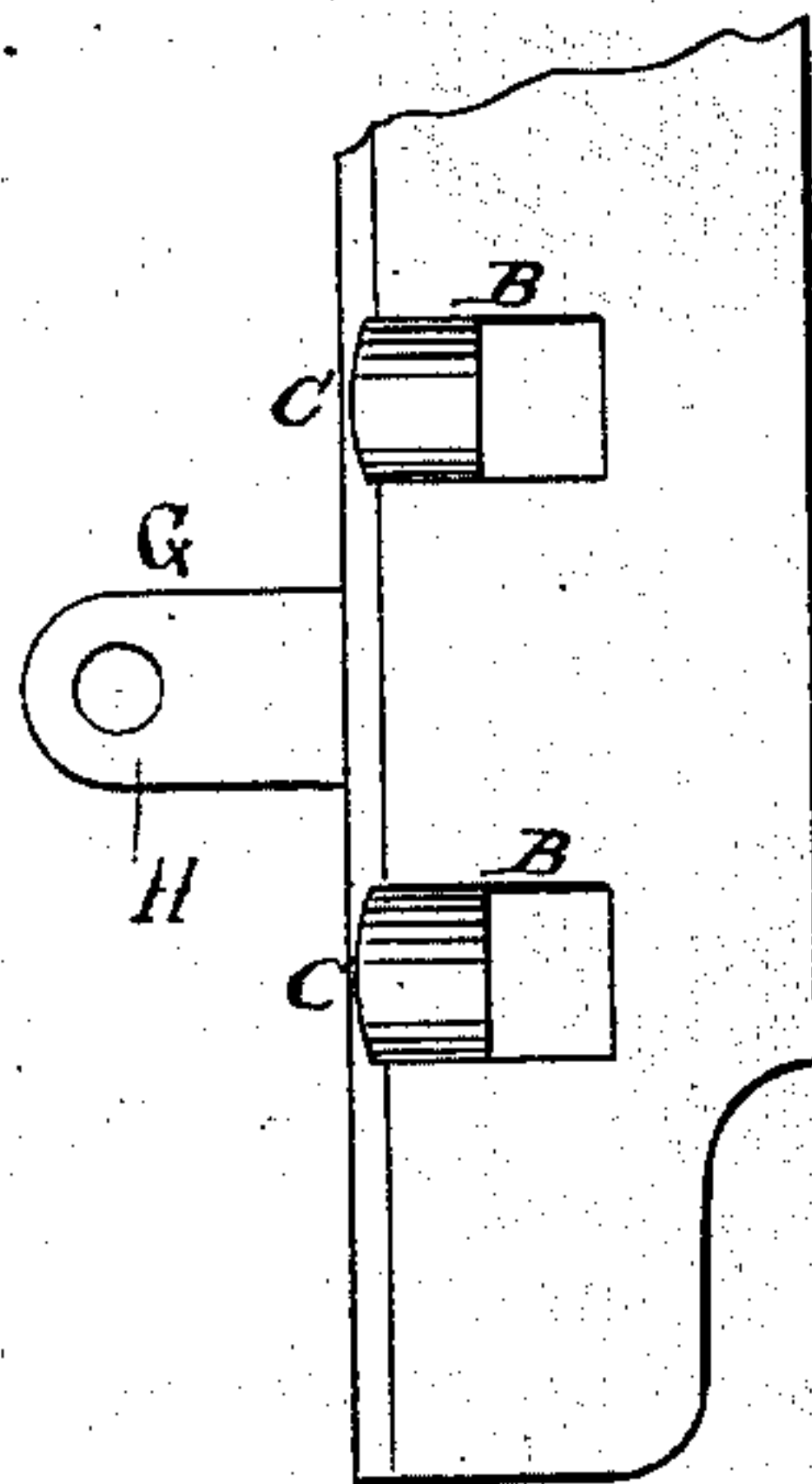


Fig. 4.



WITNESSES:

Edward Wolff.  
Herman Gustow.

INVENTOR

Thomas E. Barrow,

BY

Chas. C. Gill

ATTORNEY



# UNITED STATES PATENT OFFICE.

THOMAS E. BARROW, OF MANSFIELD, OHIO.

## COMBINED SHAKING AND DUMPING GRATE.

SPECIFICATION forming part of Letters Patent No. 315,460, dated April 14, 1885.

Application filed October 11, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS E. BARROW, a citizen of the United States, and a resident of Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Combined Shaking and Dumping Grates, of which the following is a specification.

The invention relates to an improved combined shaking and dumping grate; and it consists in the construction and arrangement of the parts hereinafter described, and particularly pointed out in the claims.

Referring to the accompanying drawings, forming a part of this application, Figure 1 is a horizontal sectional view of a grate embodying the elements of the invention. Fig. 2 is a vertical transverse section on the line *x x* of Fig. 1. Fig. 3 is a detached section on the line *y y* of Fig. 1. Fig. 4 is a top view of one end of the grate-rest and inwardly-projecting bracket; and Figs. 5 and 6 are detached views of certain parts of the mechanism, hereinafter referred to.

A in the drawings designates the frame or grate-rest, provided at the opposite ends with the cavities B, one half of each of which is supplemented by a concave portion, forming bearings C, the other half being left open for the purpose of permitting the passage of ashes, &c., and avoiding the accumulation of clinkers and other refuse. The bearings C are of suitable proportions to snugly receive the rounded extremities D of the grate-bars E, as indicated in Fig. 1. The grate-bars E are provided with transverse lugs F, which are flat on their upper surface and beveled on their lower surface, and connected by the usual webs, for the purpose of strengthening them; but it is to be understood that the present application is not limited to the particular formation of these bars or to the employment of any special number of them. The mounted extremities D of the grate-bars serve as axles, upon which said bars may be turned at the proper time, and as bearings, by means of which said bars may be given a longitudinal reciprocating movement in the cavities B, for the purpose of freeing the grate of ashes. At one end of the grate is provided, at a suitable distance below the grate-bars, the downwardly

and inwardly projecting bracket G, the lower horizontal portion of which is provided with an aperture, H, to receive the pin I, formed on the under side of the cross-bar J, hereinafter described. A sliding bar, N, is arranged transversely over the bracket G, and is provided with a central elongated slot, O, at either end of which is an elongated slot, P, the front and rear walls of which are beveled toward the rear end of the bar N, as shown in Figs. 2 and 6. The outer or front end of the sliding bar N is provided with a shank, Q, arranged to one side of the longitudinal center of the bar, and adapted to receive an ordinary shaking-iron, for the purpose of giving the grate-bars an alternating reciprocating movement, or of dumping the bars, as may be desired.

Upon the bar N will preferably be provided at opposite edges the lips R, which will operate as guides to receive the lower edges of the cross-bar J, upon the lower surface of which is cast a pin, I, as aforesaid, and which is provided upon its upper surface with concave pockets S, and slots T at its opposite ends, the rear wall of the slots T being beveled toward the inner or rear end of the cross-bar, as indicated in Fig. 2. When the bars J and N are in position one upon the other, the pin I will pass through the elongated slot O and into the aperture H in the bracket G, whereby the bar J will be secured in a fixed position and the bar N will be retained upon the bracket G, but will be permitted to have a sliding transverse movement when impelled by a shaking-iron or other instrument applied to the shank Q. The elongated slot O will permit this transverse sliding movement of the bar N without interfering with the arrangement of the bar J. The grate-bars E at one end are rounded and rest within the pockets S of the cross-bar J, as indicated in Fig. 2, and the adjacent portion of the grate-bar within the pockets S is provided with vertical pins V, which are cast with the grate-bars and project downward through the slots T in the bar J and through the elongated beveled slots P in the sliding bar N. When the grate-bars E are at rest with their upper surface in the position indicated in Fig. 1, the pins V will extend vertically through the slots T P, respectively, and the sliding bar N will at such



time be at the extreme of its forward movement, the pin I being in contact with the rear wall of the elongated slot O. The bars of the grate being in this position, they are ready to receive the fuel for a fire, and when it is desired to shake the ashes so as to clear the draft, this may be done by applying the shaker-iron to the shank Q of the bar N and giving the same a reciprocating movement, which will cause the same to rock horizontally on the pin I, moving the cross-bar J correspondingly and imparting to the grate-bars an alternating reciprocating movement, whereby the ashes are sifted through into the ash-pit. When, however, it is desired to remove all of the clinkers, coal, &c., from the grate, it will be only necessary to push the bar N transversely inward, by which movement the front beveled walls of the apertures P will come in contact with the lower ends of the pins V, carrying them toward the rear, and rotating the bars E until the transverse lugs F have assumed a vertical position, as shown in Fig. 2, at which time the cinders, coal, &c., will fall between the grate-bars into the ash-pit and may be conveniently removed.

To return the grate-bars to their former position it will be only necessary to withdraw the sliding bar N toward the front. It will thus be seen that the arrangement of the parts is such that the grate-bars may be shaken or tilted at will, and that the coal, cinders, &c., may be readily removed from the grate without the same coming in contact with the hands. The alternating reciprocating movement of the bars E is permitted by the cavities B in the grate-rest, and this movement, as well as the dumping of the grate, may be accomplished by an extension of the rounded extremity of the grate-bar E passing through the side of the frame or stove, as indicated in Fig. 1 in dotted lines, the extremity of the extension being adapted to receive the shaking-iron.

In stoves where it is inconvenient to employ the shank Q one of the mounted extremities

D will extend through the side of the stove, as indicated in Fig. 1.

The present invention is not limited to grates for open fire-places, such as that shown in the drawings, but is applicable to shaking and dumping grates of every kind.

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

1. A combined shaking and dumping grate consisting of the grate-bars capable of being rotated and reciprocated, and provided with pins V, in combination with the transverse sliding bar N, having elongated slots to receive said pins, and being adapted to be operated by a shaker-iron to tilt or shake the grate-bars, substantially as set forth.

2. A combined shaking and dumping grate consisting of the grate-bars mounted in bearings at their ends and carrying vertical pins, in combination with the cross-bar J, having pin I and slots to receive the pins on the grate-bars, the sliding bar N, having an elongated slot to receive the pin I and slots to receive the pins on the grate-bars, and the bracket G, substantially as set forth.

3. A combined shaking and dumping grate consisting of the grate-rest having cavities or elongated bearings B, grate-bars E, having pins V, cross-bar J, pin I, sliding bar N, having slots O P, and the bracket G, substantially as set forth.

4. In a grate, the bracket G and transversely-sliding bar N, having elongated apertures P, the end walls of which incline toward the rear end of the bar, in combination with the grate-bars carrying pins V, which protrude into the apertures P, substantially as and for the purpose set forth.

Signed at Mansfield, in the county of Richland and State of Ohio, this 29th day of September, A. D. 1884.

THOMAS E. BARROW.

Witnesses:

T. G. McCRAY,  
H. E. BELL.