

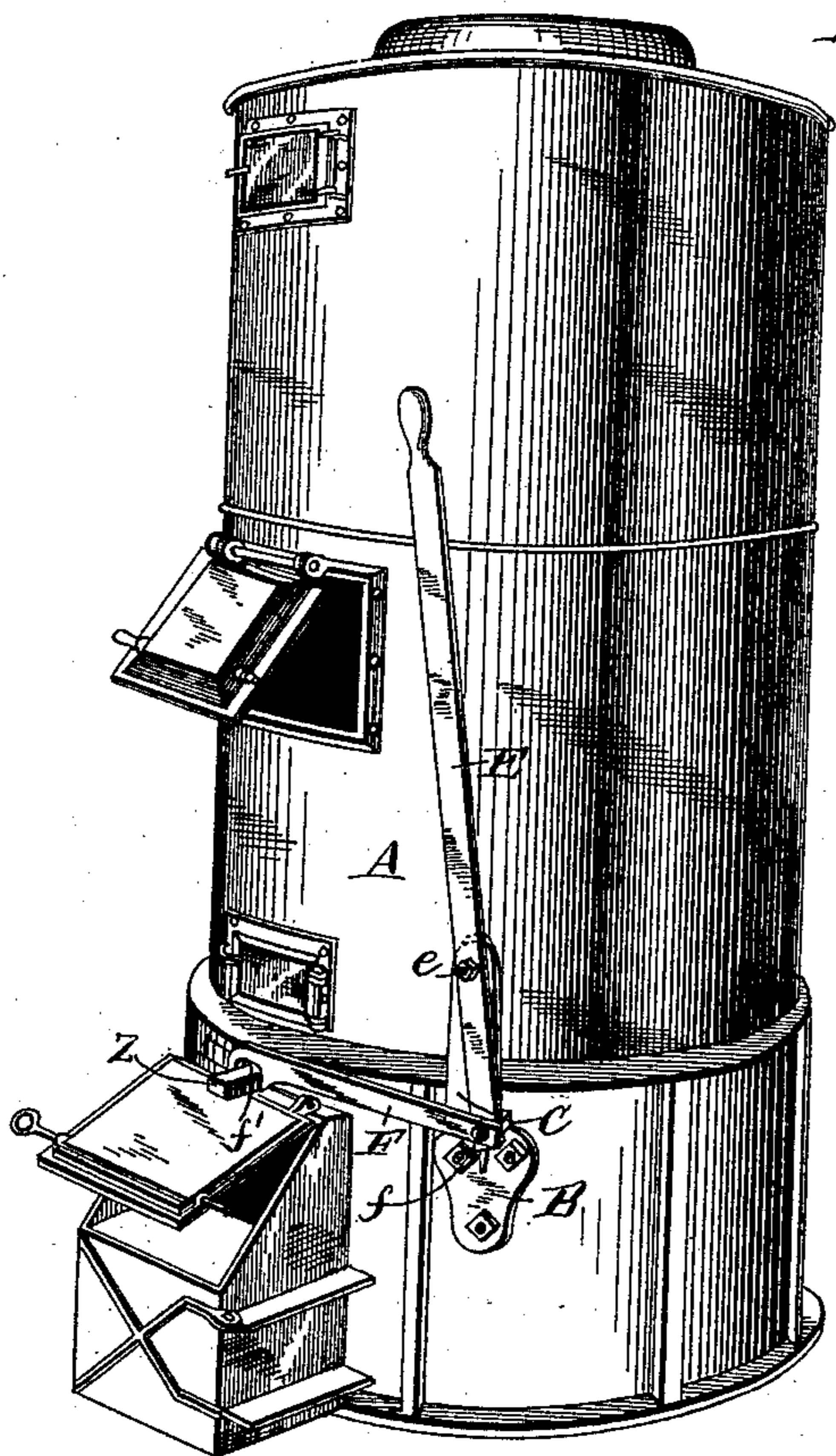
(No Model.)

J. G. CLARK & E. W. HAYNES.  
GRATE SHAKER.

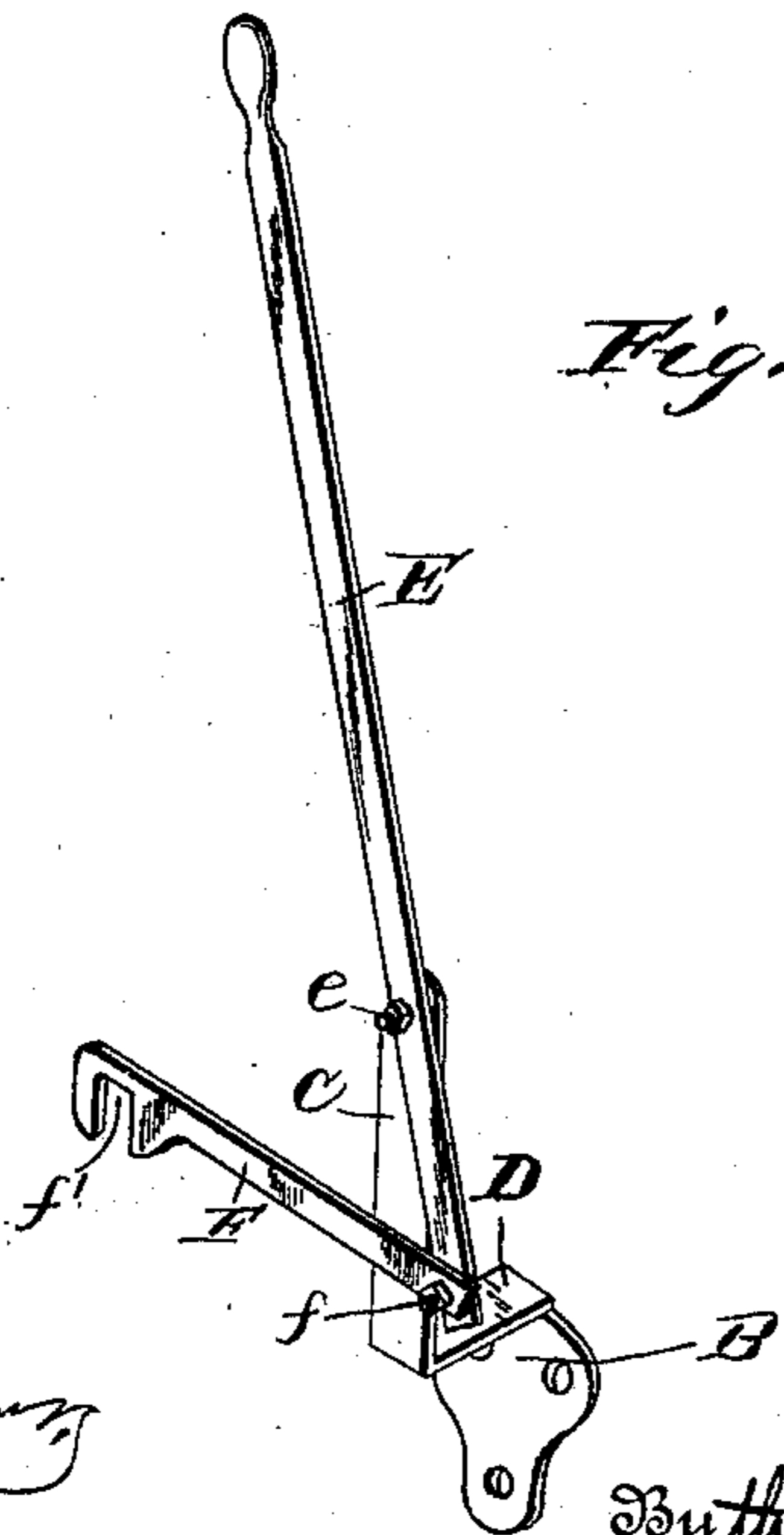
No. 361,345.

Patented Apr. 19, 1887.

*Fig. 1.*



*Fig. 2.*



Witnesses

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# UNITED STATES PATENT OFFICE.

JEREMIAH G. CLARK AND ERVIN W. HAYNES, OF FRANKLIN FALLS, NEW HAMPSHIRE.

## GRATE-SHAKER.

SPECIFICATION forming part of Letters Patent No. 361,345, dated April 19, 1887.

Application filed October 27, 1886. Serial No. 217,333. (No model.)

*To all whom it may concern:*

Be it known that we, JEREMIAH G. CLARK and ERVIN W. HAYNES, citizens of the United States, residing at Franklin Falls, in the county of Merrimac and State of New Hampshire, have invented a new and useful Improvement in Grate-Shakers, of which the following is a specification.

Our invention is an improved grate-shaker, the novelty of which consists in the details of construction hereinafter described, and particularly pointed out in the appended claim.

The object of our invention is to provide a grate-shaker especially designed for use on steam-boilers and furnaces, which will be always within easy reach of the attendant, and which can be easily operated to expeditiously free the grate of all accumulations.

In order that our invention may be fully understood and the advantages gained by our improvement appreciated, we illustrate a device embodying our invention in the accompanying drawings, in which—

Figure 1 is a view, in perspective, illustrating our device in position to an upright steam-boiler; and Fig. 2 is a view of the device detached to more plainly illustrate the details of construction.

Referring to the drawings, in which similar letters of reference denote corresponding parts in both the figures thereof, A designates a portion of an upright or vertical boiler to the grate of which our grate-shaker is especially adapted to be applied. To the exterior face of the ash-box of the boiler A is attached, by screws, bolts, or like means, a bracket-plate or base, B. Formed integral with the base or bracket-plate B, and extending outwardly therefrom, is a right-angled horizontal arm, D, and a vertical arm or extension, C, the latter extending parallel with the boiler.

E designates a hand-lever, having its fulcrum at an intermediate point, *e*, on the upper end of the vertical arm C, and at its lower end is pivotally secured at *f* to the outer end of a grate-shaking arm, F, having the cut-out portion *f'* in its free end to engage or receive the usual lug or extension, Z, on the grate.

This being the construction of our improved

grate-shaker, the operation of the same will be readily understood.

The hand-lever extends upward some distance above the pivot-point *e* alongside of the boiler, and is always within reach. It is only necessary to grasp the lever E and move it back and forth, carrying the grate-shaking arm F, to which the grate is attached, thereby agitating or shaking the grate and discharging the accumulations therefrom into the ash-pan.

From the foregoing it will be observed that we provide a grate-shaker utilizing a lever of the first class, thereby attaining great power with a minimum expenditure of strength, which is very essential in this class of devices; and, further, that the grate-shaker combines extreme simplicity of construction with ease and efficiency of operation, and is adapted to be easily attached in position, and can be manufactured and sold at a very low price.

By providing the arm D and arm C, extending outward from the bracket-plate at an angle, the hand-lever is held in a vertical position and yet retained out of contact with the boiler or furnace.

We claim—

The combination, with a grate having a square bar projected from one side of the furnace, of a bracket, B, bolted to the ash-pit of the furnace on one side of the opening therein, and having the integral horizontal and vertical arms D C, a vertical hand-lever fulcrumed at an intermediate point of its length on the vertical arm of the bracket, and held thereby out of contact with the furnace-shell, and a horizontal bar, F, pivoted to the lower end of the hand-lever and having a notch, *f'*, formed in the lower edge thereof, at the free end, into which the square bar of the grate is fitted, substantially as described, for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

JEREMIAH G. CLARK.  
ERVIN W. HAYNES.

Witnesses:

E. B. S. SANBORN,  
W. D. HARDY.