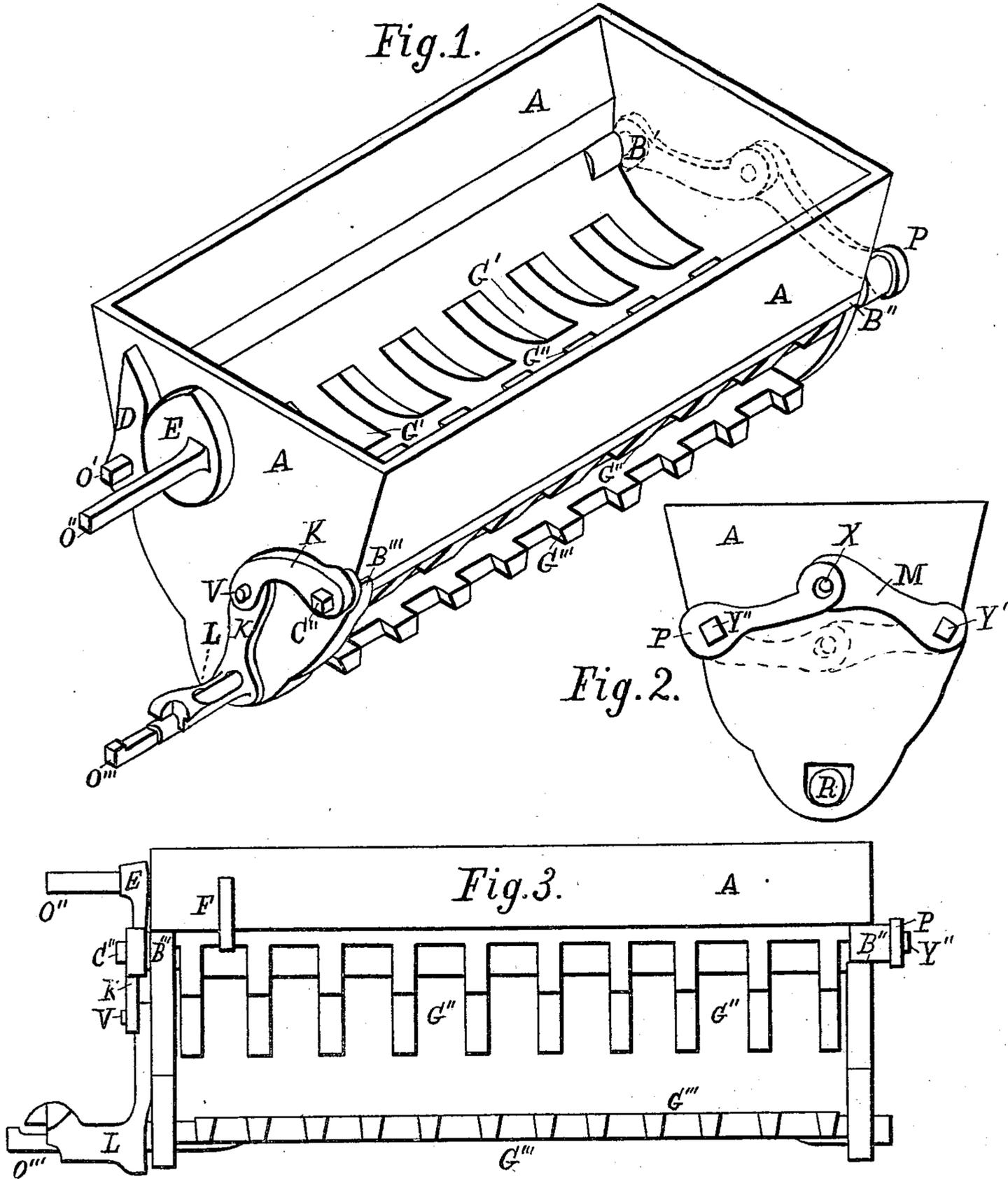


(No Model.)

E. HAYNER.  
GRATE FOR STOVES.

No. 246,388.

Patented Aug. 30, 1881.



Witnesses:

Inventor:

*A. Davidson*  
*G. Rivdan*

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# UNITED STATES PATENT OFFICE.

ENOCH HAYNER, OF TROY, NEW YORK.

## GRATE FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 246,388, dated August 30, 1881.

Application filed April 21, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, ENOCH HAYNER, of the city of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Grates for Stoves, Heaters, and Furnaces, of which the following is a specification.

The nature of my invention consists in making for stoves, heaters, and furnaces a sectional dumping-grate above the ordinary grate, with connecting appliances for opening and closing both grates either at the same time or independently, as may be desired, the upper grate being made in two sections, so as to be opened back against the walls of the fire-chamber above the lower dumping-grate; and the object is to provide stoves, heaters, and furnaces with an upper sectional grate, which in closing will take up and hold the fuel above the lower grate without disturbing the fire, and also so that the location of the fire in the fire-chamber may be changed in order to heat more economically and thoroughly the upper or some other particular part of the stove, as may be desired.

In the drawings, Figure 1 is a view, in perspective, of the ordinary fire-chamber, A, of a stove, showing the sectional grate G' G'' closed and the lower dumping-grate, G''', in a horizontal position; also showing a portion of the appliances, which are hereinafter described, for working the upper and lower grates, together or separately. Fig. 2 is an end elevation, showing the outer end of the fire-chamber, (not shown in Fig. 1,) and showing the jointed arm M, connecting the two sections of the upper grate so that they may move together, and the position of said arm when the sections are closed, the dotted lines showing the position of the arm when the sections are open. Fig. 3 is a front elevation, showing the upper and lower grates closed or in a position for a fire upon either.

The upper grate is made in two equal or nearly equal sections, and having preferably curved finger-bars, the better to take up the fuel when required. The sections are pivoted into the ends of the fire-box at each end in such position that the ends of the fingers will just clear the lower grate in opening and closing. When closed the ends of the fingers of one section will quite or nearly touch the ends of the

corresponding fingers of the other section. When open the fingers of the front section will, in a cook-stove, constitute the grate-bars in the front and take the place of the usual grate-bars in the open front of a cook-stove.

The lower grate is pivoted in the fire-box in the usual manner, and may be a dumping-grate or a shaking-grate, or both. The pivot O''', at one end of the lower grate, passes through the fire-chamber and to the outside of the stove, and is squared or notched in such manner that a key may be fitted thereon for working the grate. On this pivot O''' I put a loose sleeve, L, to which is secured one end of the jointed arm K, the other end being secured to the pivot C'' of one of the sections of the upper grate. At the opposite end of the grate a jointed arm, M, is secured to the pivots Y' Y'' of the upper grate.

The grates may be worked together as follows: By employing a key made to fit the pin O''', and a notch or slit in the sleeve L, the operator can turn up or down the lower grate, to which the pin O''' is secured, and at same time turn up or down both sections of the upper grate by means of the jointed arms K and M. The lower grate can be worked independently by inserting the key upon the pin O''' only. The sectional grate can be worked independently by putting the key upon the pin O'', which is secured to a cam, E, on the end of the fire-box. This cam works against a small lever, D, which is secured to the pivot O' of one of the sectional grates, the opposite ends of which are connected by the arm M.

Whenever it is desired to hold the sectional grate in position for use as fire-grates the lever D is thrown back by means of the cam E, and is by it held firmly in position. The two sections of the upper grate, being connected by means of the jointed arm M, must move together.

My device is operated as follows: When the fire is to be made upon the lower grate the sectional grate is opened by means of the key upon the pin O'', the back section swinging close against the rear of the fire-chamber, and the front section swinging down to form the front bars of the grate. When the fire is to be made on the sectional grate the sections can be closed by turning the pin O'', when the cam E, working against the lever D, will hold the sections

securely in place. When the fire is upon the lower grate, and it becomes necessary to relieve it of ashes and clinkers without materially disturbing the fire, the sectional grate is closed by turning the pin O'', and in closing the fingers of the sections will take up and hold the unconsumed fuel, when the lower grate can be dumped; or, if preferred, the lower grate can be dumped simultaneously with the closing of the upper grate by using the key upon the pin O''' and the sleeve L at same time. Whenever it becomes desirable to change the location of the fire from the lower to the upper part of the stove the fingers of the sectional grate in closing will take up from the lower grate and hold in position the unconsumed and burning fuel.

By the use of this device the fire chamber may at all times be kept free from ashes and clinkers without materially interfering with the fire, and, besides, the location of the fire may be readily changed from the lower to the upper part of the stove, or from the upper to the lower part of the stove, and thereby economize fuel and more thoroughly heat the particular part of the stove requiring it, or some set of flues or attachment connected therewith.

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

30 1. In combination with the fire-chamber of a stove, heater, or furnace, a sectional and ad-

justable grate comprising two pivoted sections, located in the fire-chamber above the shaking or dumping grate, said sectional grate being arranged to constitute a fuel-supporting grate or to be opened to admit of a fire being built upon the lower or dumping grate, for the purposes herein set forth. 35

2. In combination with the lower grate of a stove, heater, or furnace, an upper grate adjustable to form the front bars of the fire-chamber, or to form a fuel-supporting grate, substantially as herein described. 40

3. In combination with the fire-chamber of a stove, heater, or furnace, an upper grate and a lower grate, arranged as described, to be operated either together or separately, as desired, substantially as herein set forth. 45

4. In combination with a sectional grate of a stove, heater, or furnace, a cam secured to the shell or fire-box and operating against a lever secured to a section of the grate for opening and closing such grate, and for holding it in a horizontal position for use, substantially as herein described. 50

In witness whereof I have hereto set my hand this 5th day of April, 1880. 55

ENOCH HAYNER.

Witnesses:

N. DAVENPORT,  
G. RIORDAN.