

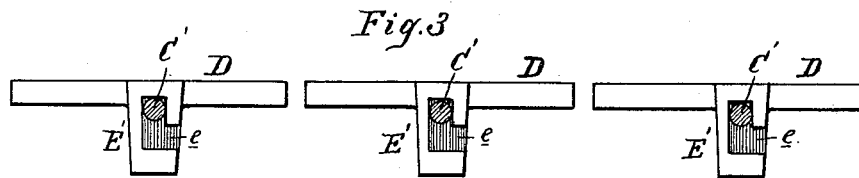
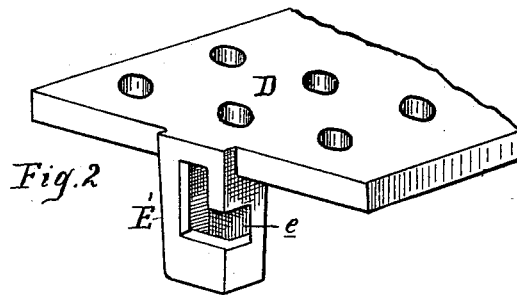
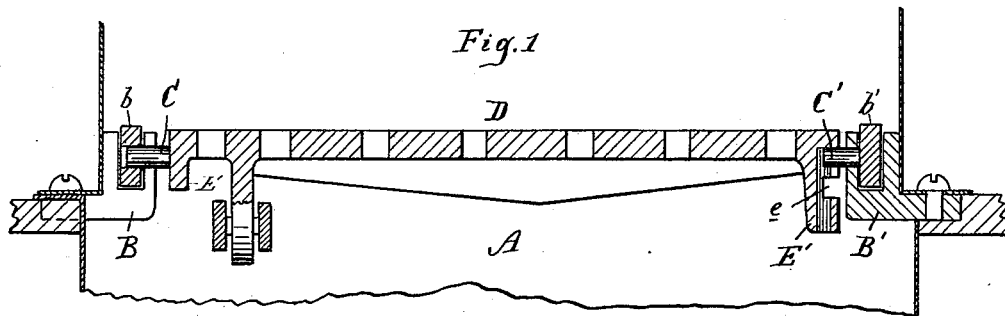
(No Model.)

C. KNAGGS.

GRATE OR ASH PAN BAR.

No. 386,474.

Patented July 24, 1888.



Witnesses:

John Schuman,  
Walter H. Wright.

Inventor:

Christopher Knaggs.

By Edmund J. Seully,

Att'y

# UNITED STATES PATENT OFFICE.

CHRISTOPHER KNAGGS, OF DETROIT, MICHIGAN.

## GRATE OR ASH-PAN BAR.

SPECIFICATION forming part of Letters Patent No. 386,474, dated July 24, 1888.

Application filed January 9, 1888. Serial No. 260,134. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTOPHER KNAGGS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Grate or Ash-Pan Bars, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement on bars designed for use as grate-bars or for the bottom of ash-pans, &c., such as are shown, for instance, in my patent, No. 374,839, issued December 13, 1887.

In the accompanying drawings, which form part of this specification, Figure 1 represents a vertical section of a grate or ash-pan provided with my improvements. Fig. 2 is a perspective view of one end of a bar. Fig. 3 is an end view of three of the bars detached.

Referring now to the details of the drawings, A represents the fire-box, to which are attached brackets B by bolts or screws or in any convenient manner. Supported in these brackets are two bars, *b b'*, the bar *b* having a series of round holes, and the other one, *b'*, carrying a corresponding series of pins, *C'*. The grate or ash-pan bar D has at its opposite ends downwardly-depending lugs E E', of different sizes. The small lug E has a pin, C, which fits in one of the holes in the bar *b*, while the lug E' has an L-shaped slot, *e*. (Shown best in Fig. 2.) By this construction it is only necessary to turn the bars of the ash-pan or grate up edgewise, if it is desired to remove the same, when a slight movement sidewise of the bar will cause the slot *e* to assume such a position as to allow the pin C', on which it is

supported, to pass out of the normally-horizontal part of the slot, but which will then be in a vertical position, so that by lifting the bar it can be readily removed.

The bar can be as readily replaced by setting it edgewise and allowing its pin to enter the slot and then moving the bar laterally and turning it into its normal position, when it will be securely held in place, and yet, as before described, it can be readily removed when desired. By this construction a very convenient and ready means is provided for readily securing the bars of grates or ash-pans in place without the necessity of movable pins, nuts, keys, or similar contrivances, which are liable to become fixed by oxidation or otherwise, so that they cannot readily be removed when it is desired to change or replace a bar.

What I claim as new is—

As an improved article of manufacture, a bar provided with a depending lug having a recess, said recess having a horizontal portion extending to one side of said lug and a vertical portion extending above the horizontal portion and communicating with said horizontal portion, said vertical portion being made in the face of the lug adjoining the face to which the horizontal portion extends and corresponding with the end of the bar, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 30th day of December, 1887.

C. KNAGGS.

Witnesses:

ARTHUR H. FLEMING,  
E. J. SCULLY.