

(No Model.)

2 Sheets—Sheet 1.

C. L. BEERS.
STOVE GRATE.

No. 483,295.

Patented Sept. 27, 1892.

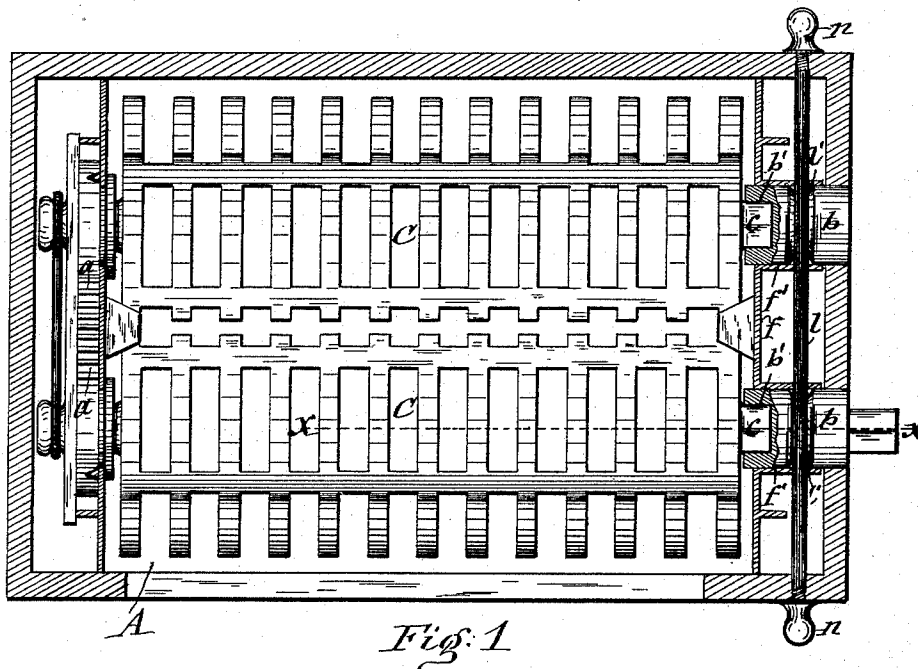


Fig. 1

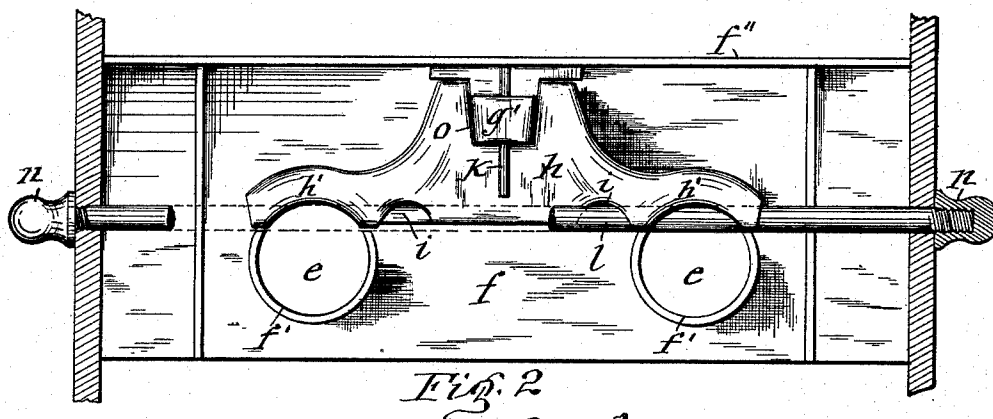


Fig. 2

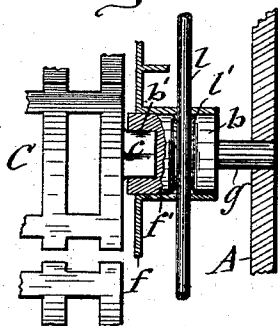


Fig. 5

WITNESSES:

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INVENTOR:

Charles L. Beers
By *Skull, Laessle & Skull*
his ATTORNEYS.

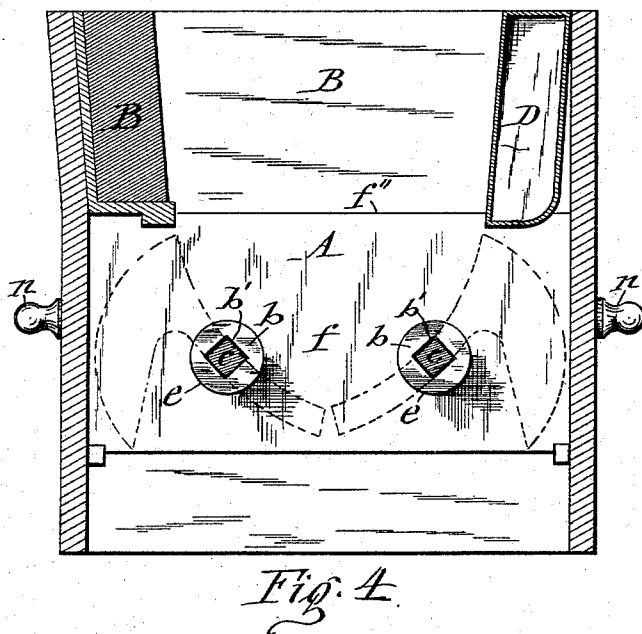
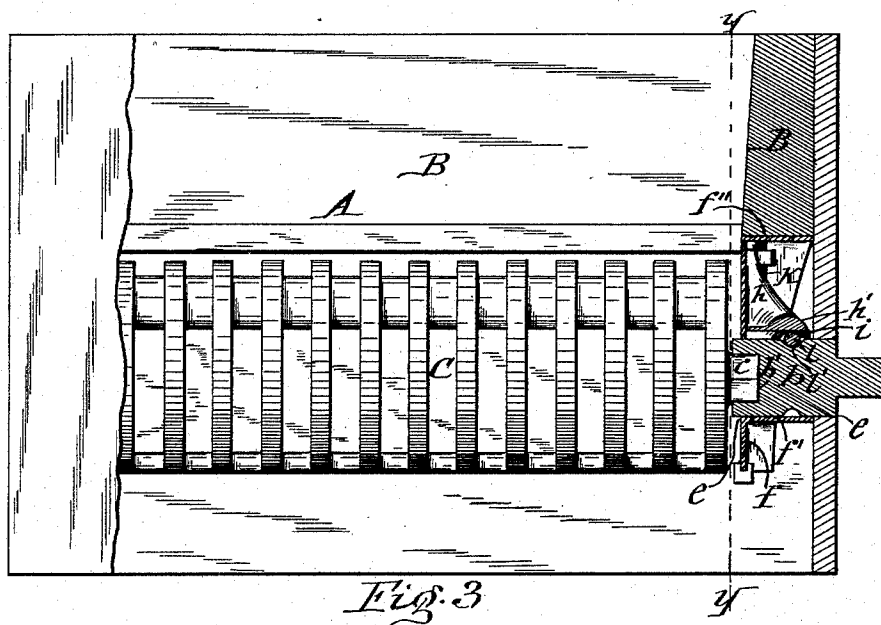
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STOVE GRATE.

No. 483,295.

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WITNESSES:

J. J. Saasz
Mark W. Dewey

INVENTOR:

Charles L. Beers
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UNITED STATES PATENT OFFICE.

CHARLES L. BEERS, OF SCRANTON, PENNSYLVANIA.

STOVE-GRATE.

SPECIFICATION forming part of Letters Patent No. 483,295, dated September 27, 1892.

Application filed April 18, 1892. Serial No. 429,552. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. BEERS, of Scranton, in the county of Lackawanna, in the State of Pennsylvania, have invented new and useful Improvements in Stove - Grates, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the attachment of grates to the fire-boxes of stoves, ranges, furnaces, and analogous apparatus.

The object of the invention is to render said attachment simple and inexpensive and to adapt it to be readily applied to any cooking stove or range without necessitating any change in the form of the fire-brick lining and without requiring a door in the end of the fire-box; and to that end the invention consists in the novel construction and combination of parts hereinafter described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a horizontal section of a fire-pot, taken immediately above the grate and having portions broken away to better illustrate the invention. Fig. 2 is an enlarged detached face view of the grate-supporting frame. Fig. 3 is a vertical longitudinal section on line *x x* in Fig. 1. Fig. 4 is a vertical transverse section on line *y y* in Fig. 3, and Fig. 5 illustrates a modification of my invention.

Similar letters of reference indicate corresponding parts.

A represents the fire-box, C C the grate-bars, B B the fire-brick lining, and D the water-front, all of which are of the usual construction and arranged in the usual manner.

The grate-bars C C have affixed to one end thereof the gears *a a*, by means of which they are caused to turn in unison in the operation of shaking or dumping the grate. The opposite end of each of said grate-bars is provided with the detachable journal *b*, which is provided in its inner end with the square or angular socket *b'* for the reception of a correspondingly-shaped tenon *c* on the end of the grate-bar. Said journals are supported in the frame *f*, consisting of a vertical plate formed with a horizontal ledge *f''* on its top, by which ledge it rests against the end wall of the fire-pot and supports the fire-brick lining B. The vertical plate of said frame and the adjacent

end wall of the fire-pot are provided with coinciding openings *e e*, adapted to receive endwise through them the journals *b b*. Around the lower and main portions of the openings in the frame *f* are journal-bearings *f' f'*, in which the journals *b b* are seated. In connecting said journals to the grate-bars the former are drawn outward sufficient to allow the tenons *c c* of the grate-bars to be inserted into the sockets *b' b'*, which they are caused to enter by pushing the journals inward. One of the journals is provided with the square lug on its outer end for the application of a wrench by which to shake the grate. Said lug also affords means for turning the journal into the requisite position to allow the tenon *c* of the grate-bar to enter the socket *b'* of the journal in connecting said parts, as before described. In order to allow the other journal to be adjusted in the same manner, the outer end thereof may be provided with a similar lug *g*, the outer end of which is flush with the exterior of the fire-box when the journal is connected to the grate-bar, as shown in Fig. 5 of the drawings.

For retaining the journals in their connections with the grate-bars I provide said journals with circumferential grooves *l'*, similar to the grooved journals shown in my prior patents, No. 423,721, of March 18, 1890, and No. 437,553, of September 30, 1890; but in order to simplify and facilitate the retention of the journals, as aforesaid, I now employ a rod *l*, which extends through the fire-box at right angles to the journals and through the grooves *l' l'* in the tops of the journals. The ends of the said rod are screw-threaded and extend through holes in the front and rear of the fire-box and are provided with nuts *n n*, which retain the rod in its position. By removing one of the nuts the rod can be withdrawn from either the front or rear of the fire-box, as may be desired or most convenient. To brace the rod, directly over the journals I secure to the frame *f* caps *h' h'*, provided with grooves *i i*, through which the rod *l* passes. To obviate the expense of drilling said grooves through the caps, I form the same on a yoke *h*, which is secured in position by means of a pin *K*, passing vertically through a lug *g'*, projecting from the vertical plate of the frame *f*. The lower end of said pin bearing on the outer

side of the yoke, in conjunction with the lug *g'*, projecting through a notch *o* in the top of the yoke, confines the latter in its position. The grate-supporting frame *f* I also utilize for properly supporting the fire-brick lining *B* by forming said frame with a ledge *f''* on its top, which ledge serves as a seat for the fire-brick.

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

1. The combination, with the grate-supporting frame provided with journal-bearings and the grate-bars having their journals mounted removably in said bearings and provided with circumferential grooves in said journals, of a longitudinally-movable rod extending across said journals and engaging the grooves thereof and thereby confining the journals in their bearings, as set forth.

2. In combination with the grate-supporting frame provided with journal-bearings, journals mounted removably in said bearings and provided with circumferential grooves and grate-bars detachably connected to said journals, caps fixed to the frame and extending over the journals, a longitudinally-movable rod passing through said caps at right angles to the journals and engaging the grooves of the latter, and the fire-box provid-

ed with a perforation for the insertion and removal of the aforesaid rod, as set forth.

3. In combination with the grate-bars, journals provided with circumferential grooves, the supporting-frame *f*, formed with the journal-bearings *f' f'* and lug *g*, the yoke *h*, formed with caps *h' h'* and grooves *i i* in said caps, the pin *k*, passing through said lug and confining the yoke in its position, and the rod *l*, passing through the grooves of the caps and journals, substantially as described and shown.

4. In combination with the grate-supporting frame and grate-bars, journals seated in said frame and provided with circumferential grooves, the fire-box provided with apertures through its front and rear walls, a rod extending through the said apertures and grooves of the journals and having screw-threaded ends protruding from the fire-box, and nuts on said ends to confine the rod in its aforesaid position and allow said rod to be withdrawn from either end, substantially as set forth.

In testimony whereof I have hereunto signed my name this 13th day of April, 1892.

CHARLES L. BEERS. [L. S.]

Witnesses:

MARK W. DEWEY,
H. M. SEAMANS.