

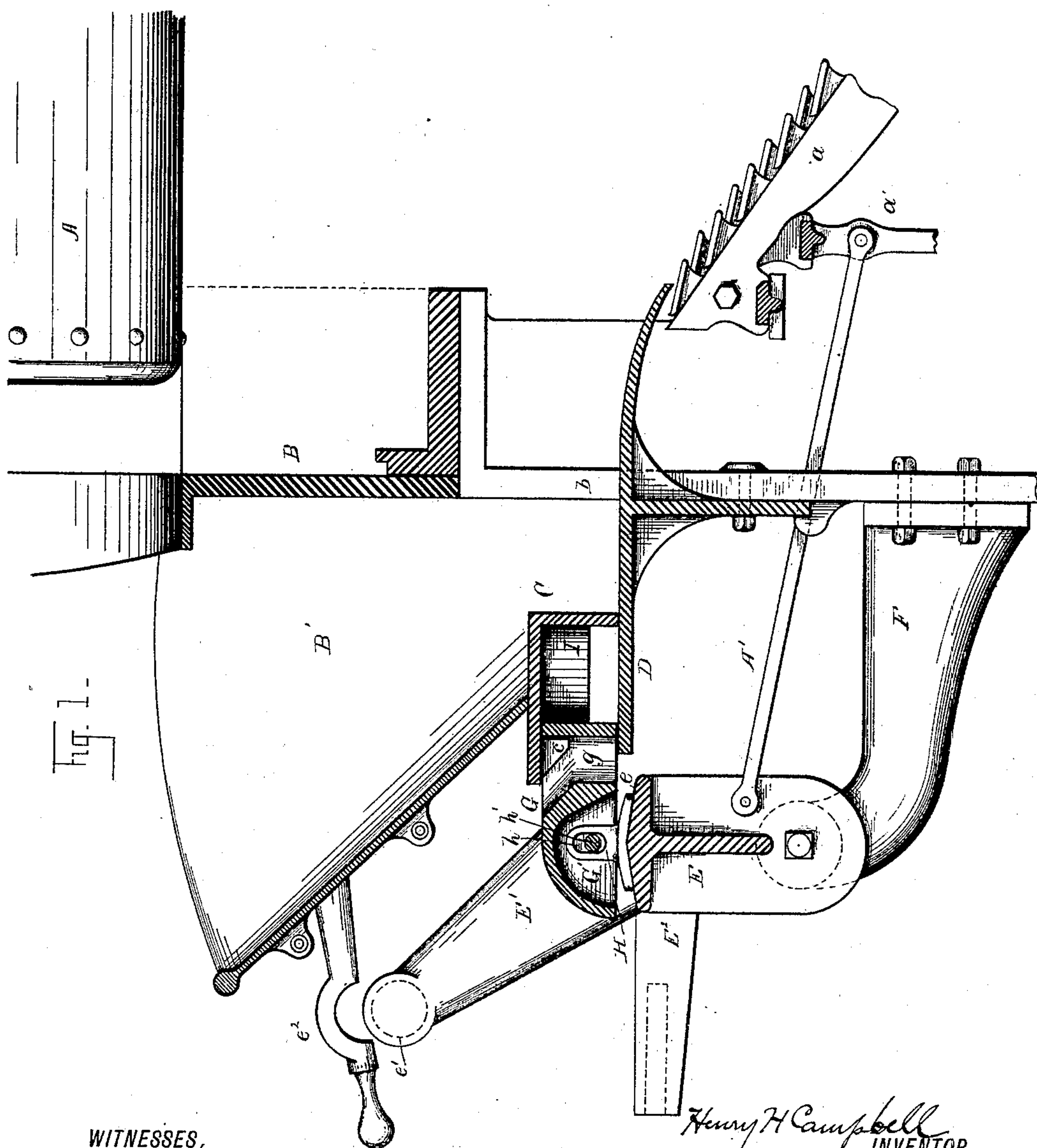
(No Model.)

2 Sheets—Sheet 1.

H. H. CAMPBELL.  
DEVICE FOR FEEDING FUEL.

No. 395,739.

Patented Jan. 8, 1889.



WITNESSES,

*W. B. Nash*  
*Geo. W. King*

*Henry H Campbell*  
INVENTOR.  
*By Siggitt & Siggitt.*  
Attorneys.

(No Model.)

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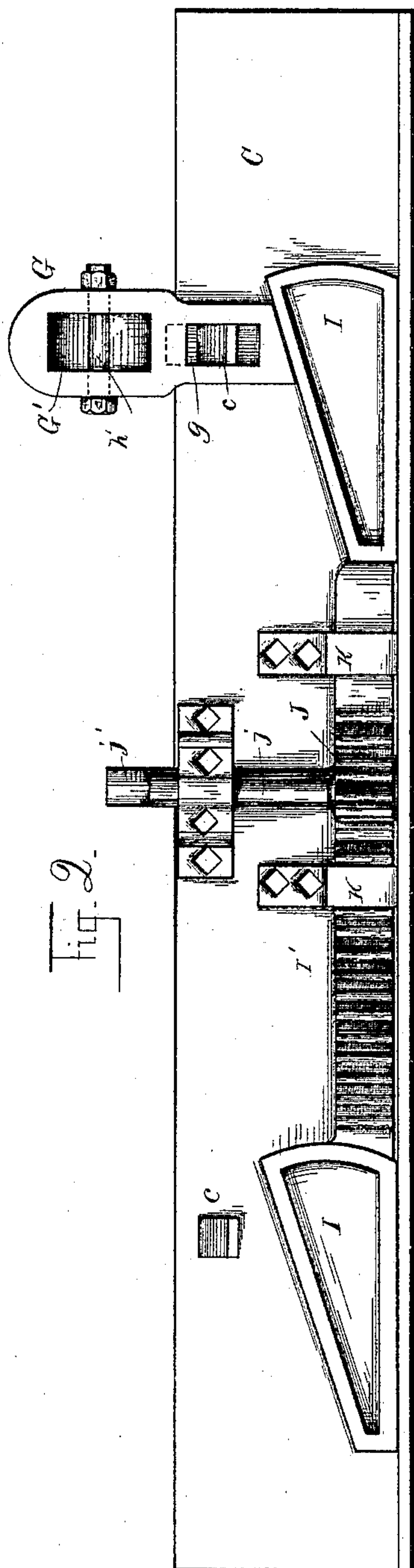


Fig. 2.

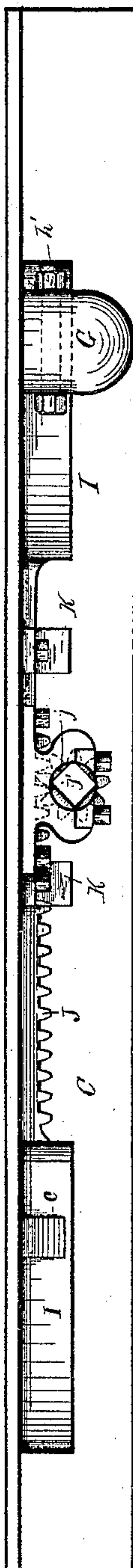


Fig. 3.

WITNESSES

*C. B. Wash.*  
*Geo. W. Lin.*

*Henry H. Campbell* INVENTOR  
By *Siggitt & Siggitt* ATTORNEYS



# UNITED STATES PATENT OFFICE.

HENRY H. CAMPBELL, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO  
NATHAN W. TAYLOR, OF SAME PLACE.

## DEVICE FOR FEEDING FUEL.

SPECIFICATION forming part of Letters Patent No. 395,739, dated January 8, 1889.

Application filed May 25, 1888. Serial No. 275,033. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY H. CAMPBELL, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Devices for Feeding Fuel to Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to a device for feeding coal to furnaces; and it consists in certain features of construction and in combination of parts, hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation partly in section. Fig. 2 is a bottom plan. Fig. 3 is a front side elevation.

A represents a steam-boiler, B the front plate of the furnace, and *a* the grates. B' is the hopper into which the coal is placed, and is fed from thence through opening *b* by means of reciprocating block C. This block extends the internal length of the hopper, and in cross-section is of the angular variety shown in Fig. 1, the short depending leg thereof resting on a shelf, D, and the horizontal leg of the block reaching forward always under the front wall of the hopper. Plate D extends through opening *b* and reaches over the upper end of the grate.

F are arms extending forward from plate B, on either side of the furnace, the free ends of these arms having suitable boxes, in which are journaled the trunnions of the oscillating bar E. The latter has connected near the one end thereof rock-arms E' and E<sup>2</sup>, the former having attached a laterally-projecting wrist, *e'*, for engaging pitman *e*<sup>2</sup>, for operating the device by power. Arm E<sup>2</sup> has a chamber (shown only in dotted lines) for inserting a hand-lever for operating the device by hand when pitman *e*<sup>2</sup> is disconnected from the wrist. The upper surface of bar E at *e* is crowning, this face being approximately concentric with the axis of the bar, and on this crowning face rest, respectively, the push-bars G G. Each push-bar has a chamber, G', opening downward for receiving loosely an

upwardly-projecting lug, H, of bar E. Lugs H have lateral holes *h*, elongated vertically for receiving pins *h'*, the latter extending also through holes in the side walls of the push-bars, by which arrangement the push-bars move horizontally without cramping on the pins. Pitmen A' connect the oscillating bar *a*, on which the movable grates rest, with bar E, substantially as shown.

The mechanism thus far described is substantially the same as heretofore used, and provisions were made for oscillating the bar more or less to give the desired movement to blocks C, the latter being connected with push-bars G. With such arrangement the throw of the reciprocating grates was made longer or shorter, according to the movement given to block C, and this was not desirable, as the grates should have sufficient movement to feed the coal down the grate-surface, whether the quantity of coal was much or little.

As an improvement I provide the following: Push-bars G are provided with pockets *g*, in which operate depending lugs *c* of block C, the rear ends of these lugs being vertical for engaging the corresponding internal faces at the end walls of the push-bars, by which arrangement block C is drawn forward by the forward movement of the push-bars. Underneath the horizontal leg of block C are wedges I, of the same inclination and pointing in the same direction, the flat sides of the wedges engaging the vertical leg of block C and the inclined faces of the wedges presenting toward the push-bars. The wedges are connected or integral with rack-bar I', with pinion J, mounted on shaft *j*, for operating the rack-bar and wedges. The shaft extends forward to where the end thereof is accessible, and the extreme end *j'* is squared or otherwise prepared for receiving a wrench, or, preferably, a removable crank, (not shown,) for operating the device. When the wedges are moved a little farther to the left hand than the position shown in Fig. 2, the wedges will block the push-bars against lugs *c*, so that there will be no lost motion at this part, in which case block C will move the full throw of the push-bars. By backing the wedges to

the right hand by means of the rack-bar and pinion the push-bars will move a portion of their stroke rearward before engaging the wedges, and such lost motion will of course  
5 lessen the throw of bar C. By turning shaft *j* and the pinion in the one direction or the other the wedges may be adjusted to give the desired throw to block C to feed the requisite quantity of coal to the furnace, and this,  
10 too, without changing the throw of the movable grates. In Figs. 2 and 3 the push-bars are omitted on the left-hand side of the drawings to show more clearly the lugs *c*. The wedges and rack-bar are held in place by  
15 strap K, through the loops of which the rack may move freely endwise.

What I claim is—

1. In a coal-feeding device, the combination, with reciprocating block for feeding the coal,

and push-bars for actuating such block, of adjustable wedges interposed between the push-bars and reciprocating block for adjusting the throw of the latter, substantially as set forth.

2. In a coal-feeding device, the combination, 25 with reciprocating block and push-bars, substantially as indicated, of wedges interposed between the push-bars and reciprocating block, a rack for connecting the wedges, and a pinion for operating the rack, the parts being 30 arranged substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 15th day of February, 1888.

HENRY H. CAMPBELL.

Witnesses:

CHAS. H. DORER,  
ALBERT E. LYNCH.