

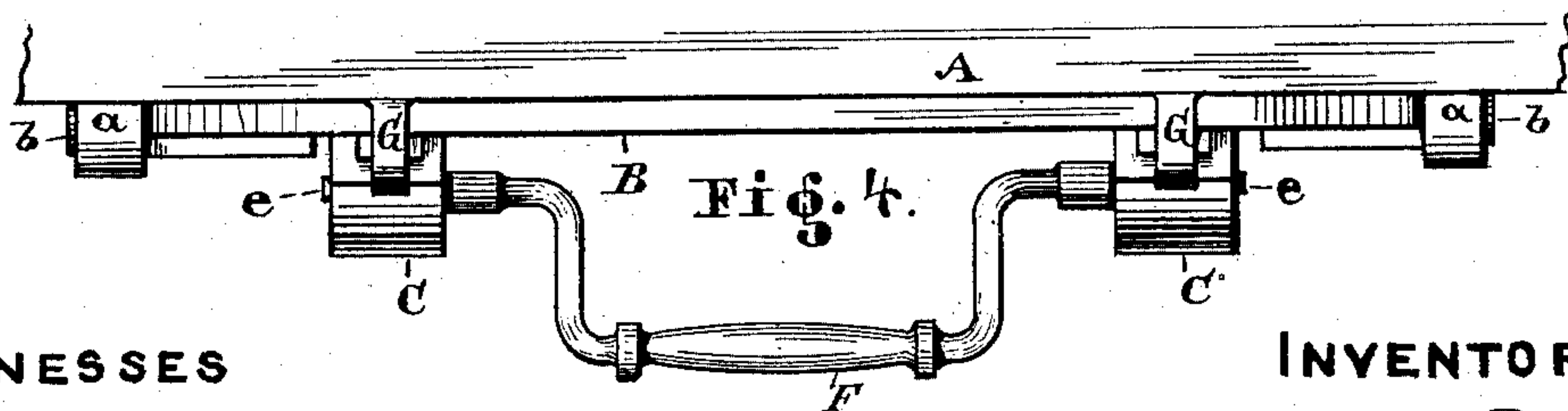
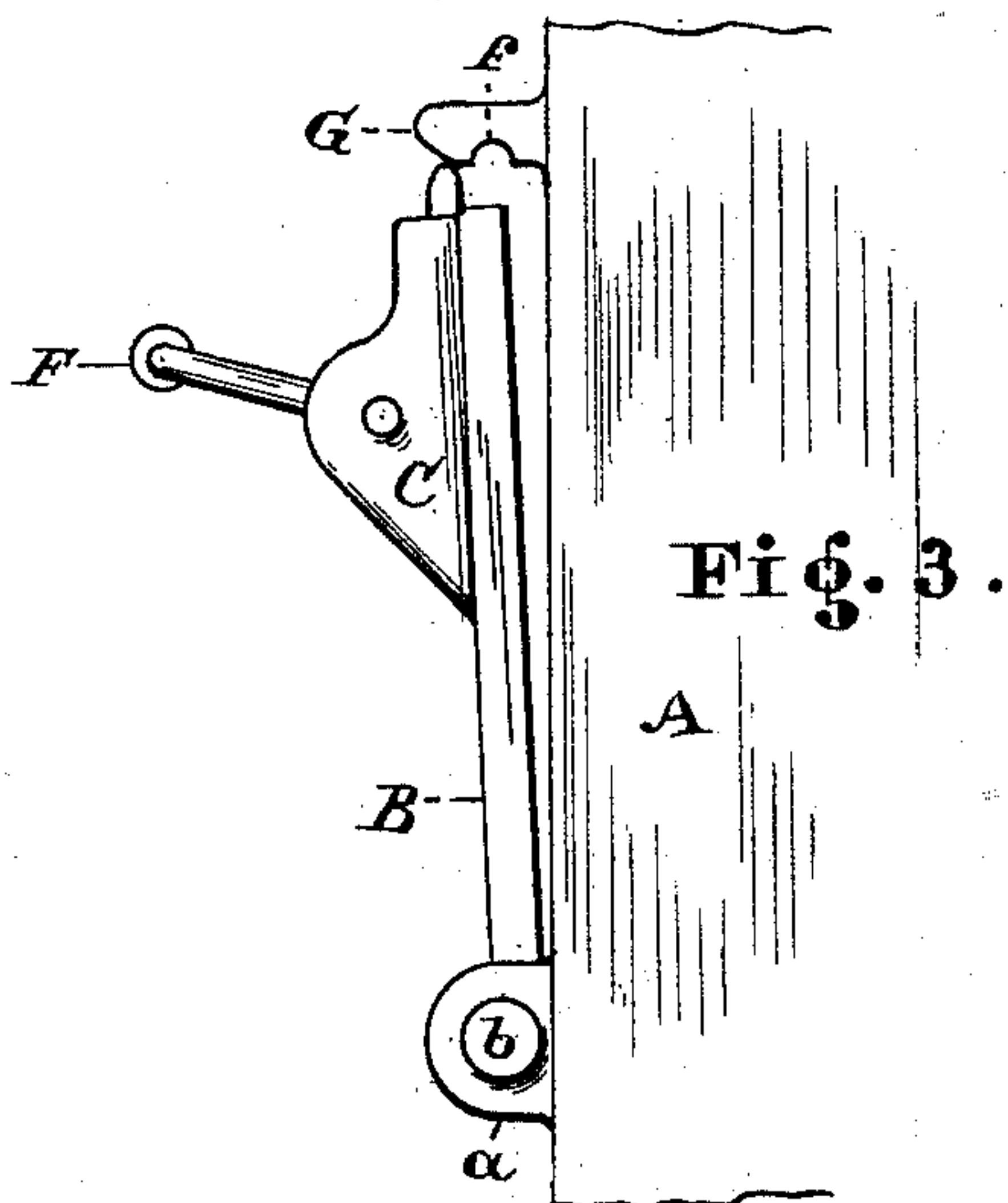
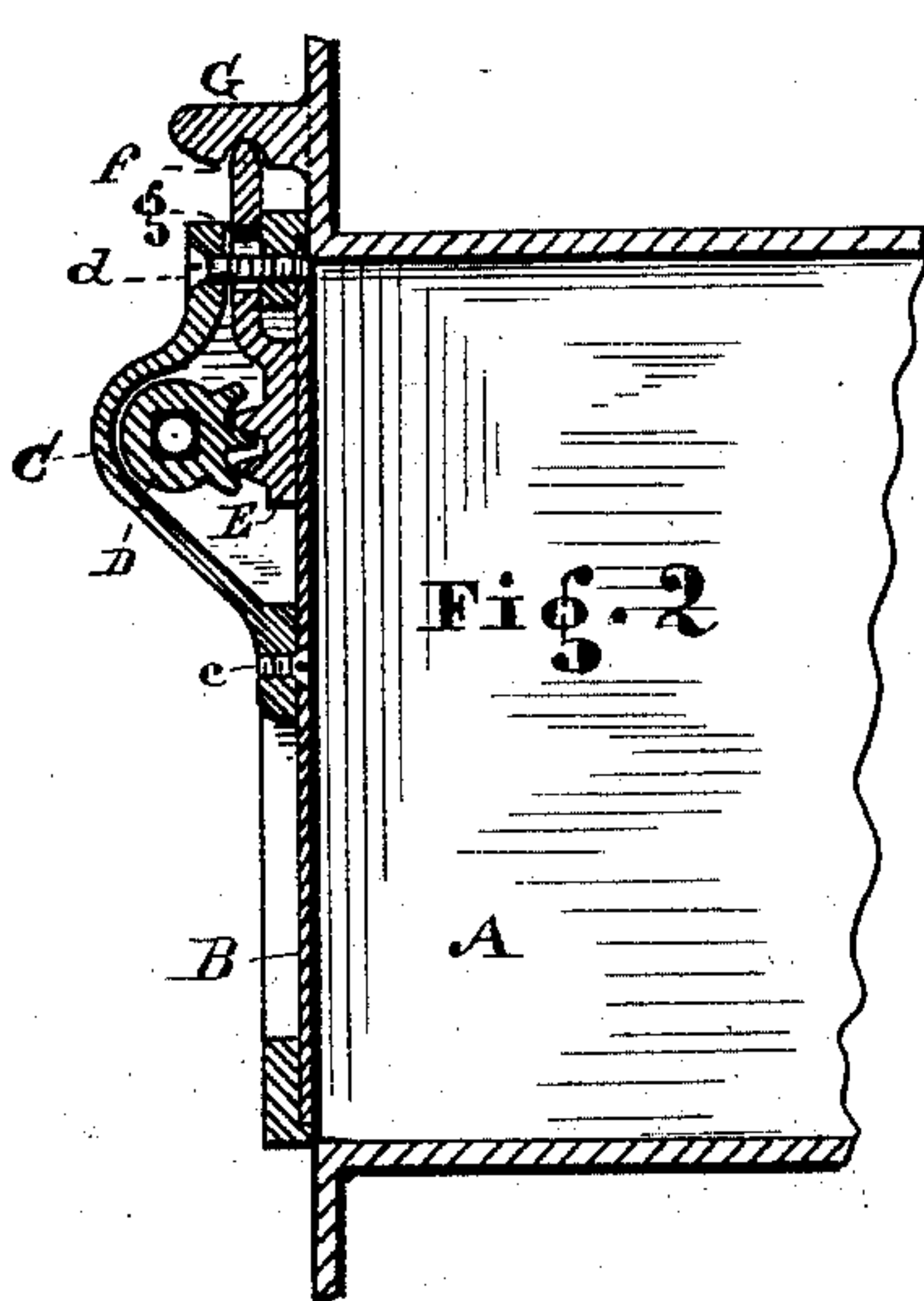
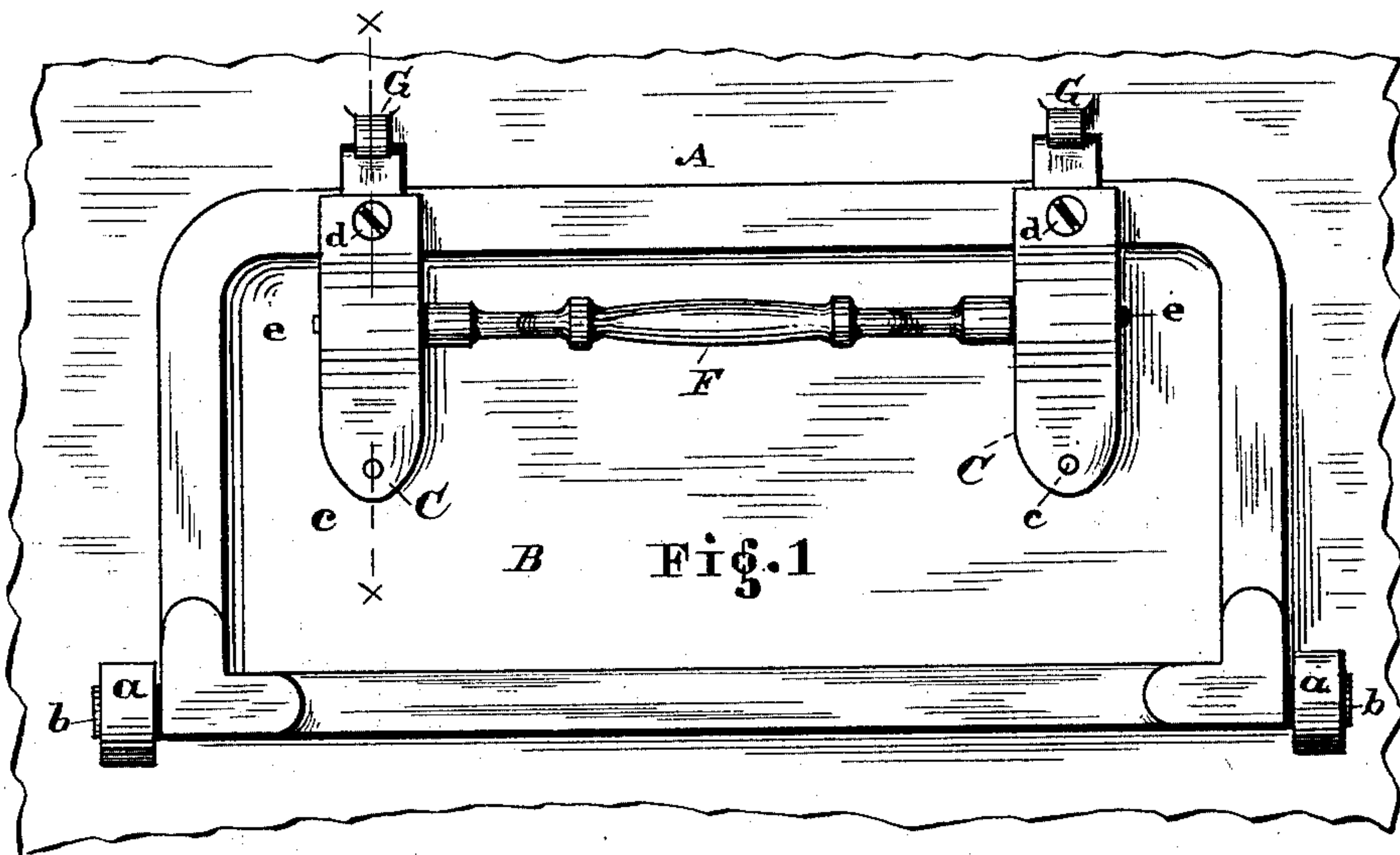
(No Model.)

H. BORN.

OVEN DOOR.

No. 374,391.

Patented Dec. 6, 1887.



WITNESSES

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OVEN-DOOR.

SPECIFICATION forming part of Letters Patent No. 374,391, dated December 6, 1887.

Application filed February 16, 1887. Serial No. 227,777. (No model.)

To all whom it may concern:

Be it known that I, HENRY BORN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Oven-Doors; and I do hereby declare that the following is a full, clear, and complete description thereof.

The nature of my invention relates to new and improved means of opening and closing the doors of ranges or ovens, and the construction of said improvement is substantially as follows, reference being had to the accompanying drawings and specification for illustration and description thereof, in which—

Figure 1 represents a front elevation of a range-door provided with said improved devices. Fig. 2 is a vertical section of the same on line *x x*. Fig. 3 is an end view showing the door partly open and unlocked, and Fig. 4 is a plan view of Fig. 1.

Like letters of reference refer to like parts in the several views.

In Fig. 1, A represents a part of a range or oven, to which is pivotally attached or hinged the door B by means of the pivots *b*, fitted to and in the lugs or bearings *a*. To the upper side of the door is fixed the locking device above alluded to, which substantially consists of one or more rack-latches, E, and segmental pinion D, Fig. 2.

C C are housings of a peculiar form, wherein slide the rack-latches E and the pinions D are located. These housings are secured to the door or frame thereof by means of the countersunk screws *c* and *d*, which housings contain the bearings for the handle F, Figs. 1, 3, and 4, by which the conjoint and simultaneous action of the pinions D is established. The pivotal ends *e* of the handle F extend through said housings, as seen in Figs. 1 and 4, and are square at that part to which the pinions D are fitted, to prevent the turning of the pinions on the handle. The pivots *e* will therefore be larger at their inner ends, on which the square part joins, and smaller at their outer ends, in so much as a circle comprising the corners of a square is larger than a circle formed within the sides thereof. These conditions are necessary in order to fit the bearings in the housings and the square hole in the pinion. This connection of the pivots, pinion, and housing can be had by first

placing the pinion in the housing and then entering pivots in the housings, there being a rack and pinion in each housing C C in connection with the handle F. The pinions D engage with the teeth of the rack-latches E and hold the same up in the notch *f* of the lugs G, owing to the weight of the handle F, which acts as a lever, having its fulcrum in or on the pinions D. The housings are made to fit over the plain part of the rack-latches, thereby guiding the same.

To disconnect the rack-latch from the notch it is necessary to lift the handle F, which turns the pinion, thereby moving the rack-latch in a downward direction until the upper end of a slot, *g*, in said rack-latch strikes against the screw *d*, Fig. 2, thus preventing the rack from moving down any more than necessary to pass the lug G in opening the door. When the door is open and the weight of the handle comes again into action by means of the pinions in the racks, then the lower surface of said slot arrests the upward movement of the rack when brought in contact with the screw *d*, Fig. 2. The extent of movement of the pinion and racks is controlled by said slot *g*, and is very limited, so that only a few teeth are necessary to answer the purpose, and the whole construction may be arranged within a comparatively small space and housing, respectively. It will be noticed that the upper end of the rack is well rounded. The front and lower side of the lug G are also rounded and tapering toward the notch *f*, Figs. 2 and 3. This in closing the door renders the device self-locking, as the rack or bolt, when pushed against the lug G, which is attached to the oven, will yield and gradually slide down on the tapering side and into the notch *f* without the necessity of lifting the handle F.

In doors of smaller size or form only one rack-bolt and lug are essential. In that case they are arranged in the center of the door with a handle properly constructed and fitted for operating the pinion and rack latch or bolt.

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

1. A locking device for oven or range doors, consisting of a housing secured to the door, a handle pivoted in said housing and provided with a pinion for engagement in a rack-latch sliding between said housing and door, in com-

bination with a notched lug projecting out from the range or oven, substantially as and for the purpose described.

2. In a locking device for the purpose described, the combination of a handle provided with one or more pinions and pivotal bearings in housings secured to the door, of the rack-latches in gear with said pinions within said housings, and notched lugs connected with the oven, arranged substantially as shown and set forth.

3. In an oven-door-locking device, a rack-

latch, E, provided with a slot, g, and a pin or stem secured to the door and extending through said slot to control the extent of movement of the latch, in combination with the housing C, pinion D, door-handle, and lug G, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY BORN.

Witnesses:

W. H. BURRIDGE,

B. F. EIBLER.