

T. KLEINHANS.
DOOR FOR BAKERS' OVENS.

(Application filed June 4, 1902.)

(No Model.)

Fig: 1.

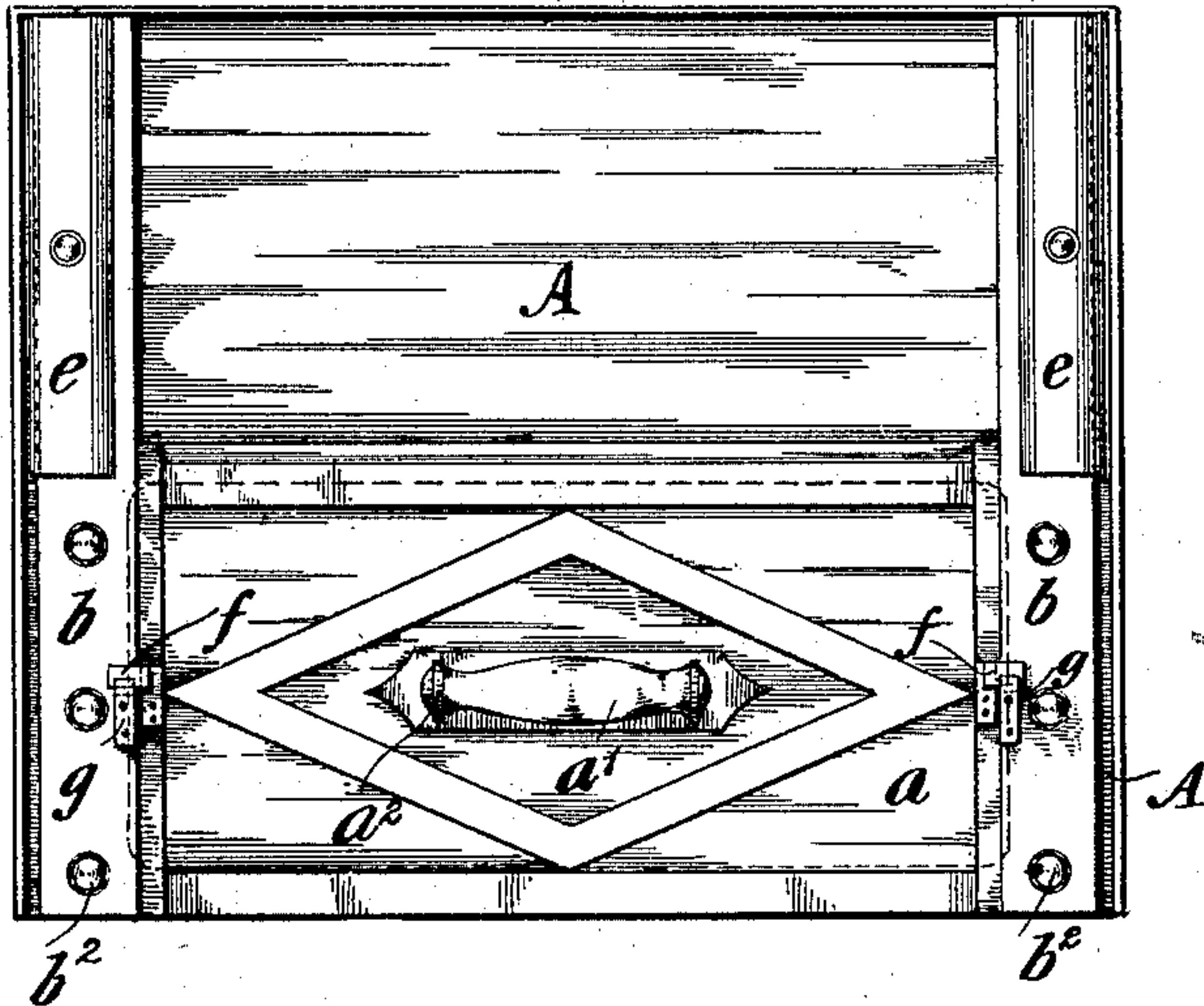


Fig: 2.

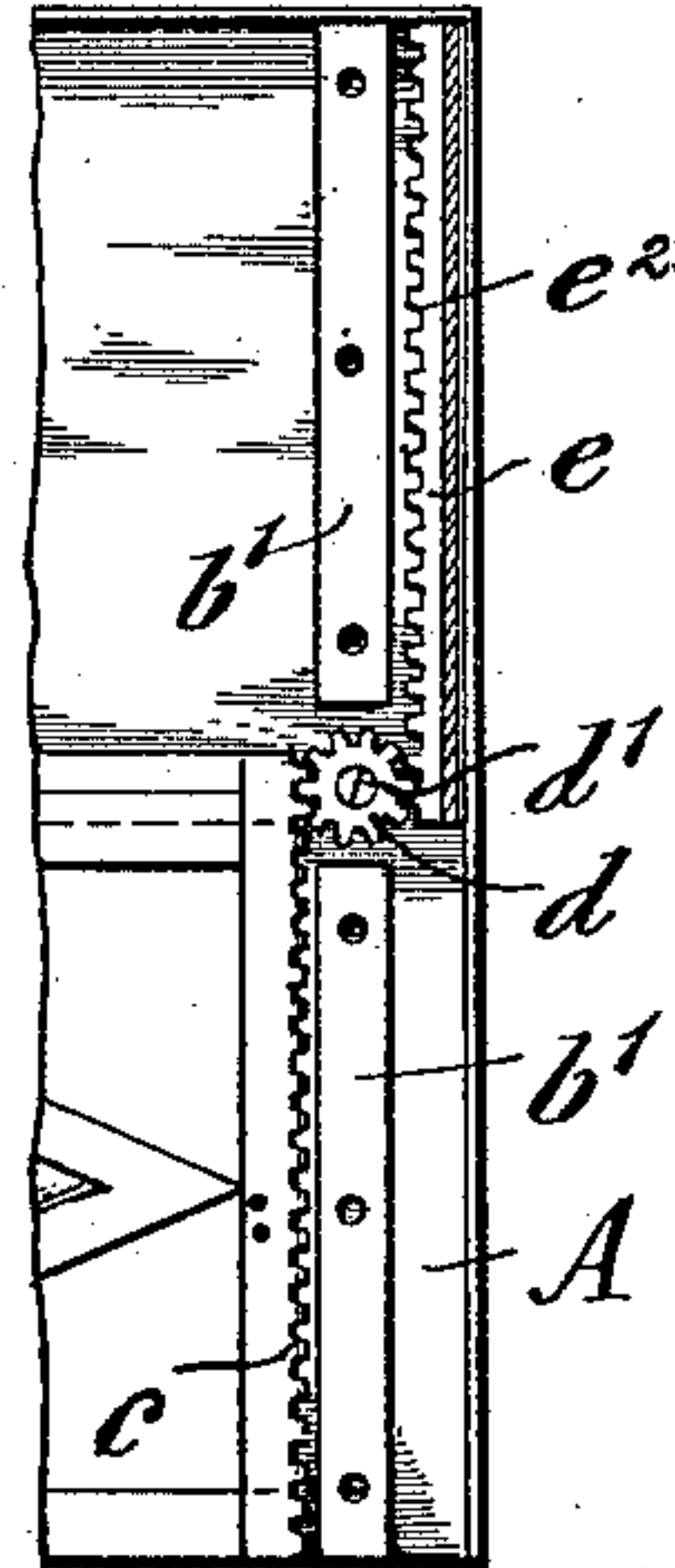


Fig: 3.

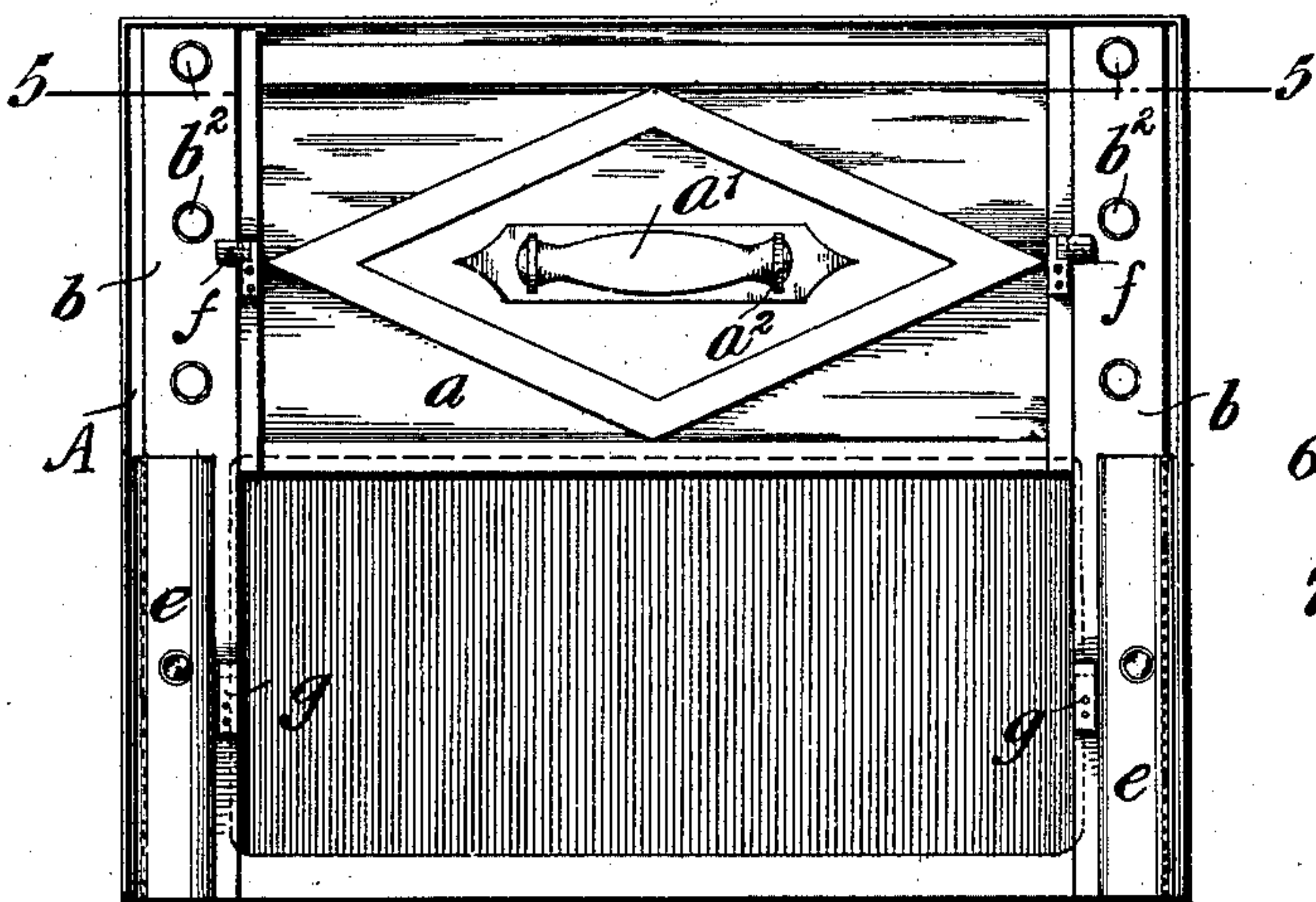


Fig: 4.

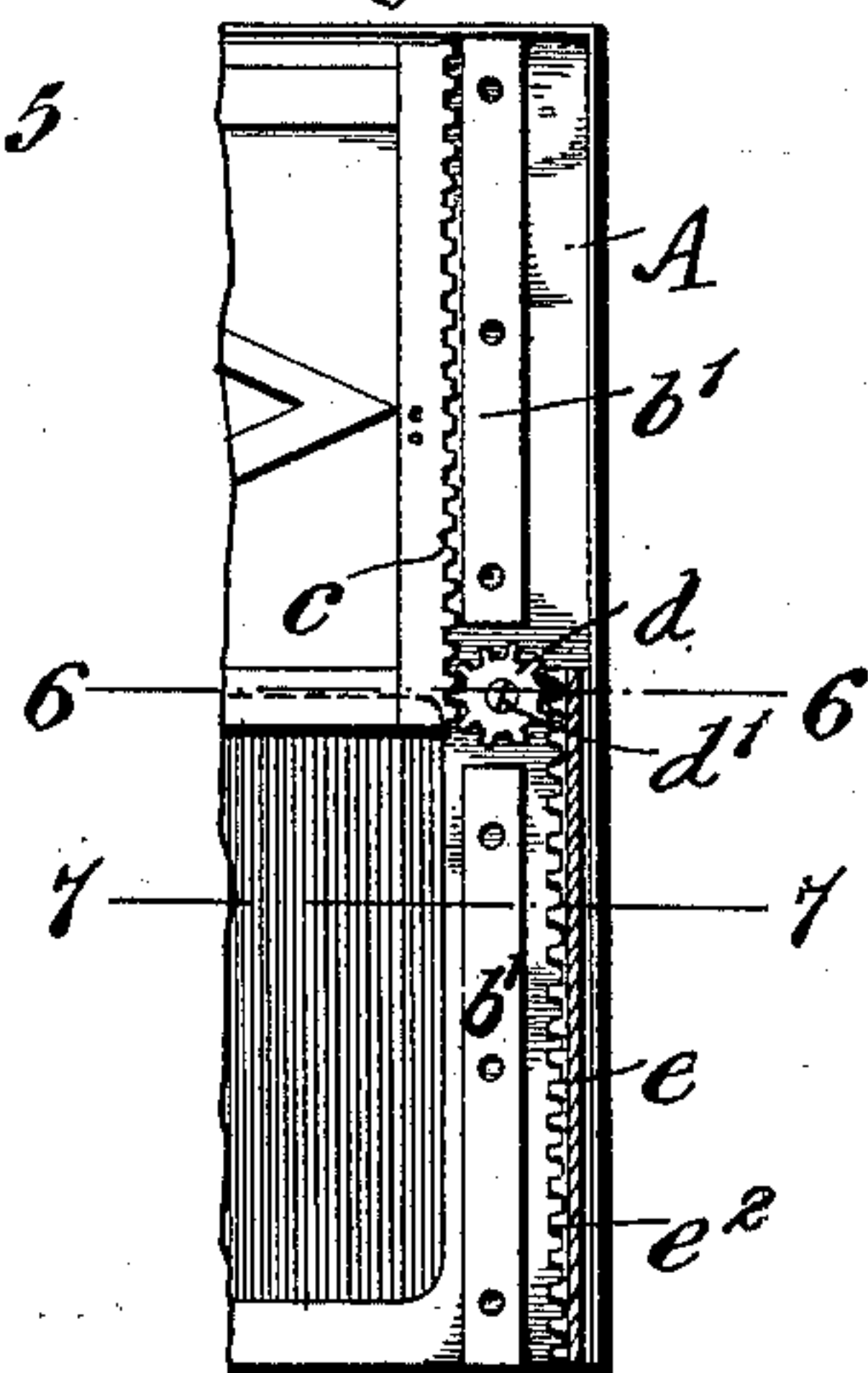


Fig: 5.

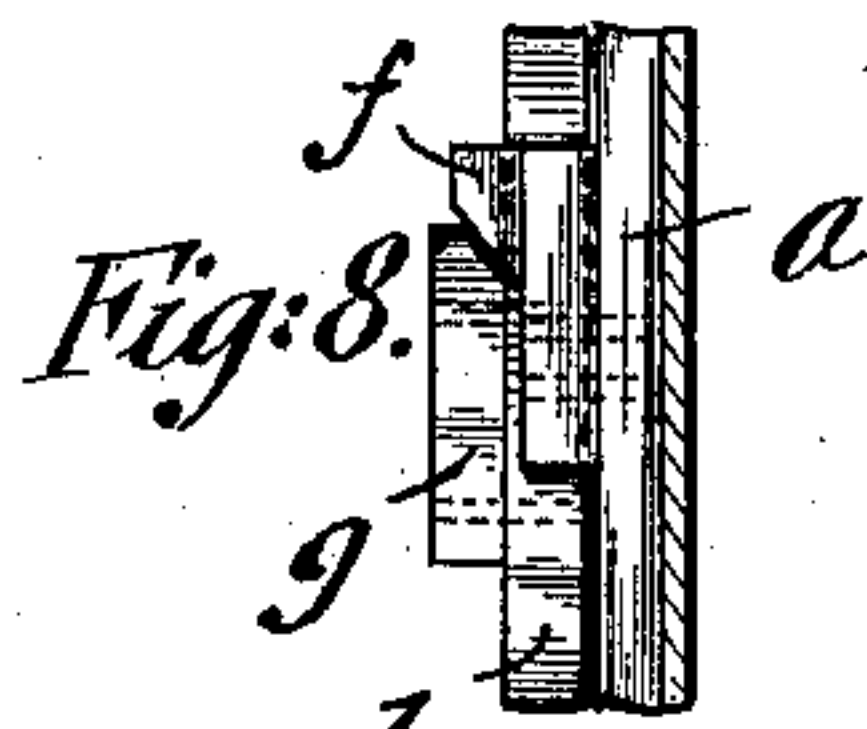
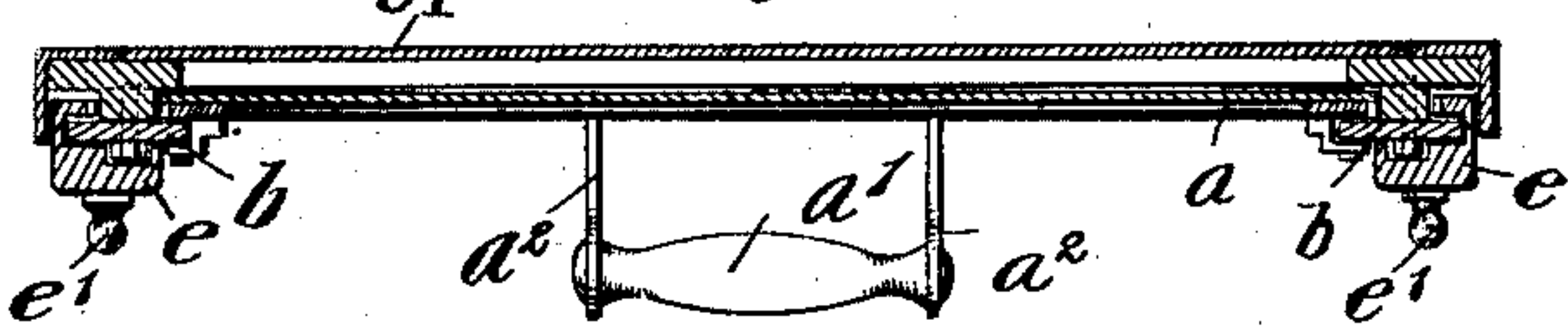


Fig: 8.

INVENTOR

WITNESSES:

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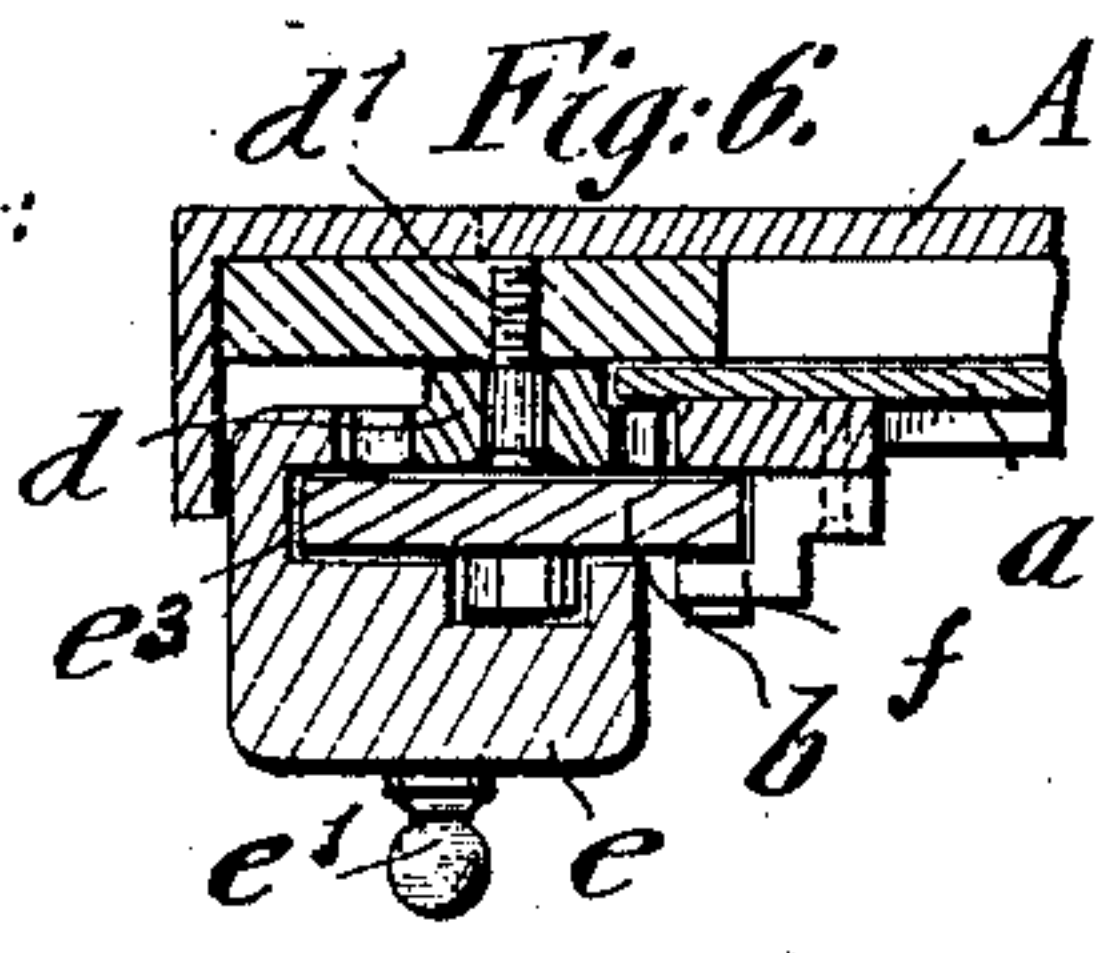


Fig: 6.

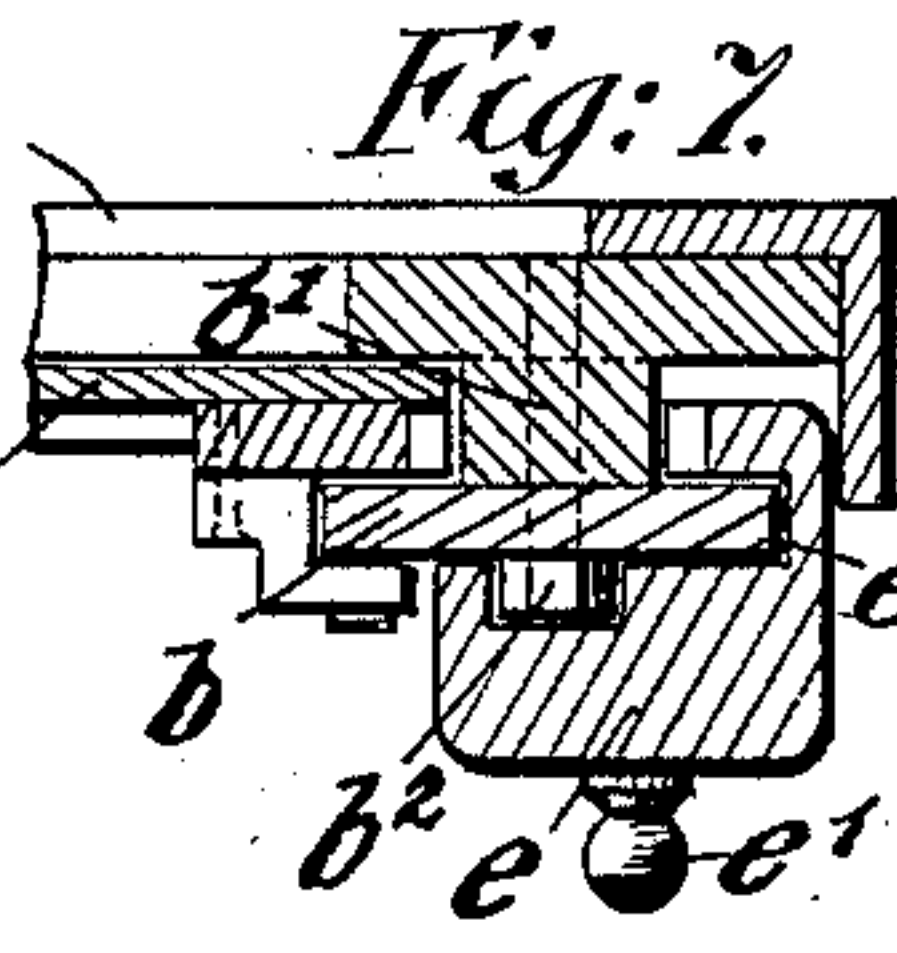


Fig: 7.

Titus Kleinhans.
BY
Glover Niles
ATTORNEYS.

UNITED STATES PATENT OFFICE.

TITUS KLEINHANS, OF KARLSRUHE, GERMANY, ASSIGNOR TO AUGUST G. OLLRY, OF BROOKLYN, NEW YORK.

DOOR FOR BAKERS' OVENS.

SPECIFICATION forming part of Letters Patent No. 717,217, dated December 30, 1902.

Application filed June 4, 1902. Serial No. 110,182. (No model.)

To all whom it may concern:

Be it known that I, **TITUS KLEINHANS**, a citizen of the Empire of Germany, residing in Karlsruhe, in the Empire of Germany, have invented certain new and useful Improvements in Doors for Bakers' Ovens, of which the following is a specification.

This invention relates to an improved door for bakers' ovens which is counterbalanced and guided in such a manner that it can be readily opened and closed and held tightly when in closed position; and the invention consists of a door for bakers' ovens, a main door-frame having vertically-arranged ledges adjacent to its ends, said ledges being separated at their inner ends, pinions pivoted to the frame between the inner ends of the ledges, vertical guide-strips secured on said ledges, racked counterbalancing-weights meshing with said pinions and guided by the outer edges of said guide-strips, and a door having racked end edges in mesh with said pinions and also guided by the inner edges of said guide-strips.

The invention consists, further, of a latch device which is applied to the door and guide-strips, so as to hold the door tightly in closed position.

In the accompanying drawings, Figures 1 and 2 are respectively a front elevation of my improved door for bakers' ovens in closed position and a portion of the door with parts removed. Figs. 3 and 4 are respectively a front elevation with the door in raised or open position and a portion of the door with parts removed. Fig. 5 is a horizontal section on line 5 5, Fig. 3. Figs. 6 and 7 are respectively detail sections on lines 6 6 and 7 7, Fig. 4; and Fig. 8 is a detail view of the latch device.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, *a* represents a door for a baker's oven. The door is provided with a handle *a'*, which is supported at the center of the door on stationary straps *a²*, that extend at right angles from the door. The ends of the door *a* are provided with racks *c*, which intermesh with pinions *d*, that turn freely on fixed pivots *d'* of the frame *A* of the door. On the opposite sides of the pinions

d are arranged counterbalancing-weights *e*, which are made of approximately U shape, the rear edges of said counterbalancing-weights being likewise provided with racks *e²*, that intermesh with the pinions *d*. The frame *A* of the door *a* is set into the brickwork of the oven and provided above and below the pinions *d* with raised ledges *b'*. To these ledges are attached guide-strips *b*, that are extended over the pinions to the full height of the frame *A* and attached to the ledges *b'* by means of fastening-screws *b²*, as shown in Figs. 1 and 2. The counterbalancing-weights *e* are guided by interior grooves *e³*, adjacent to the racks *e²*, on said guide-strips *b* and provided with exterior handles or knobs *e'*. The counterbalancing-weights are moved in upward or downward direction by their intermeshing racks *e²*, pinions *d*, and the racks *c* of the door *a* when the door is moved from the closed into the open position, and vice versa, as shown, respectively, in Figs. 2 and 1. On each side of the door *a* is arranged a stationary latch *f*, that is provided with a beveled face which is engaged by a lug *g*, having a corresponding beveled face on the side guide-strip *b*, so that when the door *a* is closed the inclined faces of the lugs *g* bind on the inclined faces of the latches and hold thereby the door tightly in position in the frame *A*, so as to prevent the automatic opening of the same. When it is desired to open the door, it is first lifted slightly, so that its latches clear the lugs, when the door can be readily opened in connection with the counterbalancing-weights. The door is held in raised position by the counterbalancing-weights, so that the articles can be put into the oven for baking, while on lowering the door until its latches are engaged by the stationary lugs on the guide-strips it is retained tightly in closed position.

The advantages of my improved door for bakers' ovens are that the same can be conveniently opened or closed by the arrangement of the guided counterweights on both ends of the same and that the door when in closed position is tightly retained against accidental opening by the latch devices.

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

1. The combination, with a main door-
frame having vertically-arranged ledges adja-
cent to its ends, said ledges being separated
at their inner ends, of pinions pivoted to the
5 frame between the inner ends of the ledges,
vertical guide-strips secured on said ledges,
racked counterbalancing-weights meshing
with said pinions and guided by the outer
edges of said guide-strips, and a door having
10 racked end edges in mesh with said pinions
and also guided by the inner edges of said
guide-strips, substantially as set forth.

2. The combination with a main frame of
guide-strips attached to said main frame and

provided with lugs having beveled faces, and 15
a counterbalanced door, having latches with
beveled faces adapted to be engaged by said
lugs for holding the door tightly in closed
position, substantially as set forth.

In testimony that I claim the foregoing as 20
my invention I have signed my name in pres-
ence of the subscribing witnesses.

TITUS KLEINHANS.

Witnesses:

JACOB ADRIAN,

DANIEL BORN,

FRIEDRICH RONNER.