(No Model.)

# G. WELLHOUSE.

## BALANCED DOOR FOR STOVES OR GRATES.

No. 303,349. Patented Aug. 12, 1884.

Fig. 1.

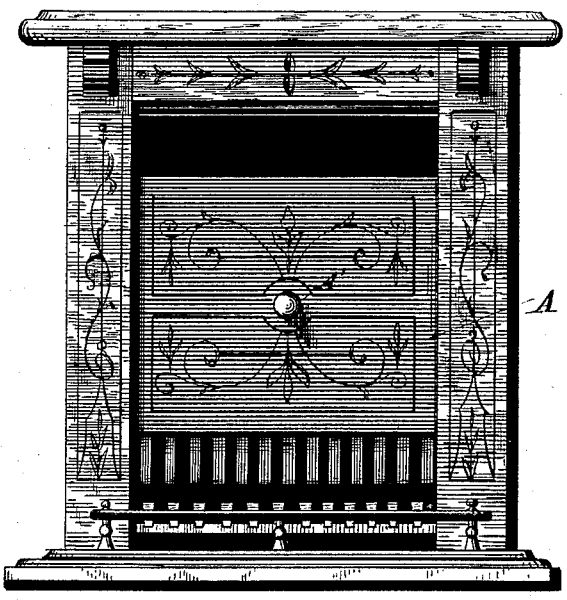



Fig. 2.

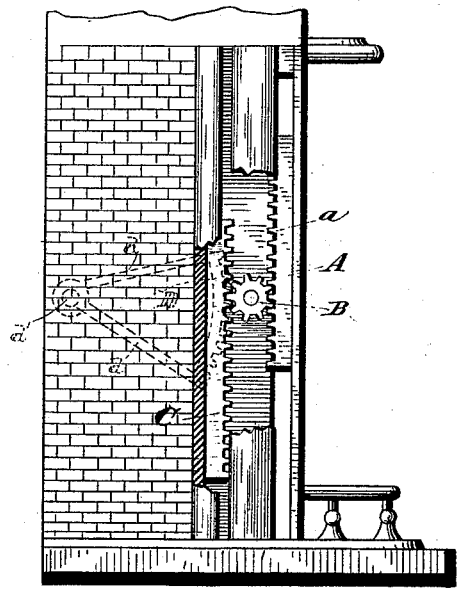



Fig. 3

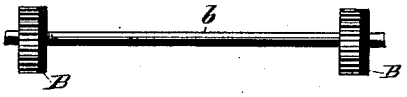
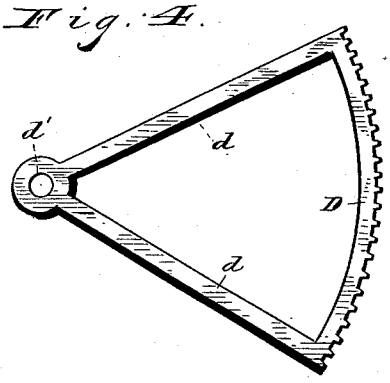



Fig. 4.




WITNESSES

W. Engel

Geo. W. King

George Wellhouse INVENTOR

By Seggett & Seggett

ATTORNEYS

N. PETERS, Photo-Lithographer, Washington, D. C.

# UNITED STATES PATENT OFFICE.

GEORGE WELLHOUSE, OF AKRON, OHIO.

## BALANCED DOOR FOR STOVES OR GRATES.

SPECIFICATION forming part of Letters Patent No. 303,349, dated August 12, 1884.

Application filed October 23, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE WELLHOUSE, of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Balance-Doors for Stoves or Grates; 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 improvements in balance-doors, adapted more especially for stoves and grates; and it consists of certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a front elevation. Fig. 2 is a side view with parts of the casing omitted. Fig. 3 is a front elevation of the pinions and shaft. Fig. 4 is a side elevation of a segmental rack adapted to be employed in place of the sliding weight.

A represents the door operating vertically, and guided at the ends by suitable ways or grooves, and provided with a knob or handle, A′. The door, on the back side and at each end, is provided with a rack, *a*, preferably integral with the door. These racks engage, respectively, the pinions B, that are preferably rigidly attached to the shaft *b*, that may be journaled at or near the ends to any convenient part of the jambs, casing, or stationary part of the structure.

C are balance-weights, provided each with a rack that engages the pinions B on the back side. The combined gravity of two weights balances the weight of the door. These weights can be provided with grooves in their front faces, in which the pinions move, or they can be guided between beads secured within the stove or fire-place, or by beads resting in a groove formed in the weights. Other constructions may be had, according to the peculiar requirements in special cases.

When there is sufficient room behind the door, the sliding weights C can be dispensed with, and the construction shown in Fig. 4 employed instead. This device is simply a segmental rack provided with rearwardly-extending arms *d*, which latter terminate in a bearing, *d′*, by means of which the racks are pivotally secured in position. The tooth portion of these racks engage the pinions B, and the weight thereof is sufficient to hold the door elevated. When the door is elevated, the rack ascends. Also, the door A may be bow-shaped in front, and made in various forms, as may suit the taste of the designer, or to extend around grates that extend too far in front to make it practicable to use a straight door, although I prefer the former construction, as it prevents the door from being cramped in the grooves or guides.

By means of the mechanism described and shown the door may be raised or lowered at pleasure, and will remain in any position desired.

I am aware that it is not broadly new to balance window-sashes by means of pinions engaging rack-bars on the window-sash and rack-bars attached to the balance-weights, and hence I make no broad claim thereto. In these sash-balances the pinions are disconnected and revolve independently, and hence, if the balances vary slightly in weight the pinion carrying the heavier weight, will turn faster than the one carrying the lighter weight, (when the weights are descending,) and consequently wedge the sash. In my device the pinions are rigidly secured together, and can be operated, if necessary, by a single pinion on one side without wedging the parts.

What I claim is—

1. In a door for grates or stoves provided on its rear face, near opposite sides, with racks, in combination with pinions B, rigidly secured together by the bar *b*, and a counterweight meshing with each pinion, substantially as set forth.

2. The combination, with a sliding stove or grate door provided on its rear face with rack-bars *a*, of pinions B, rigidly connected together by the rod *b*, and the sliding weights C, provided with rack-teeth, which latter mesh with the teeth of the pinions, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 26th day of September, 1883.

GEORGE WELLHOUSE.

Witnesses:

ALBERT E. LYNCH,

CHAS. H. DORER.