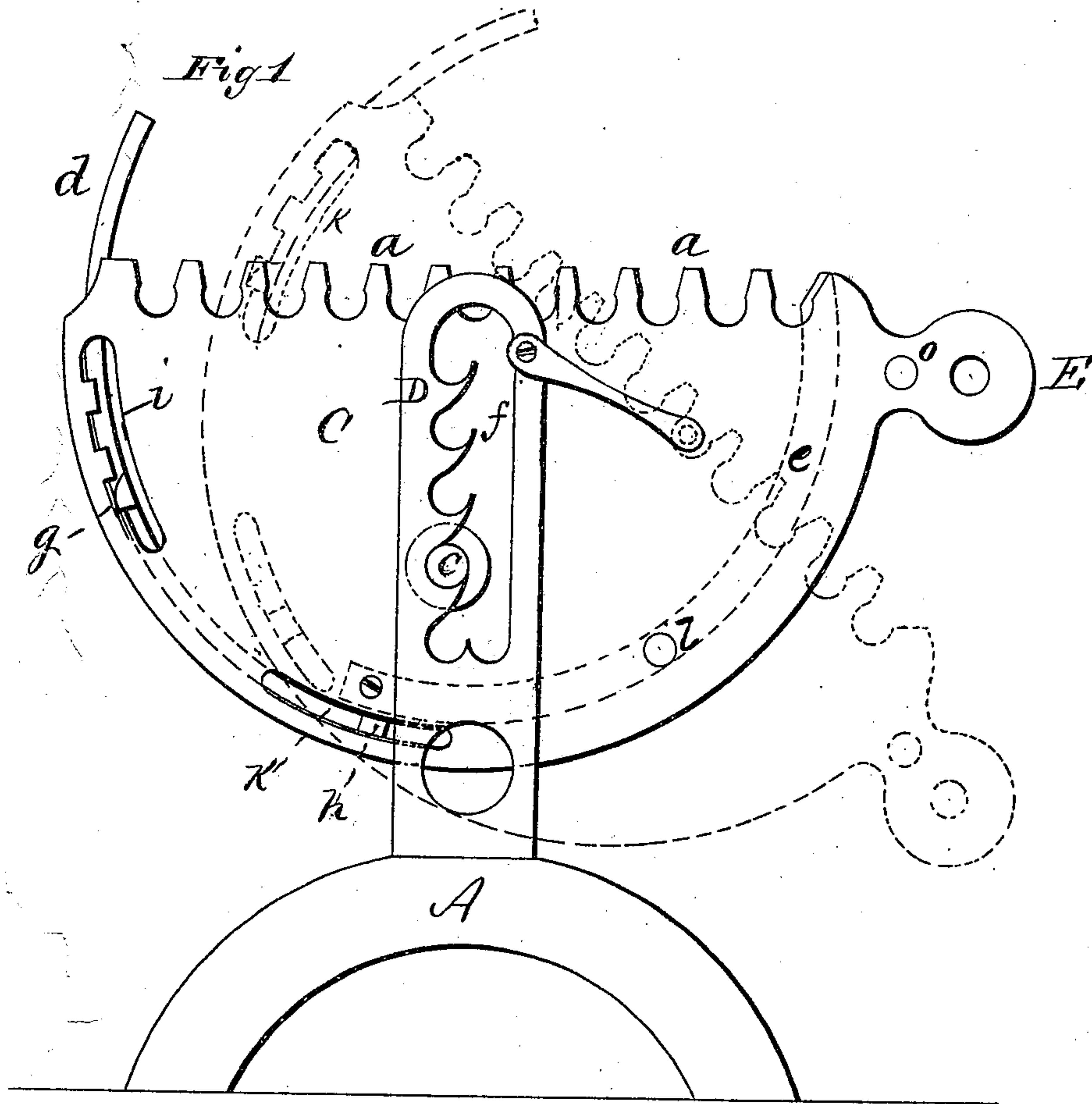


J. W. WILLIAMS.
GRATE.

No. 174,650

Patented March 14, 1876.



WITNESSES
F. L. Ourand
Henry N. Miller

By

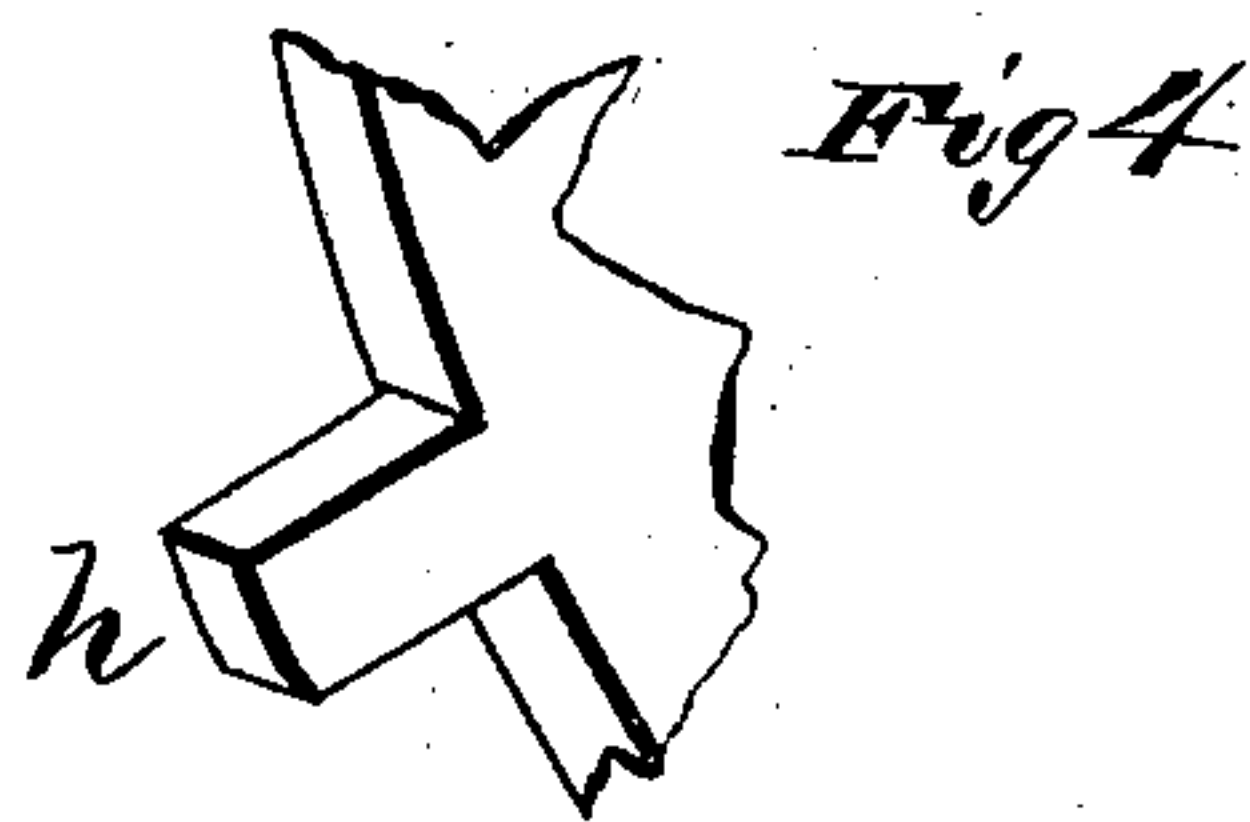
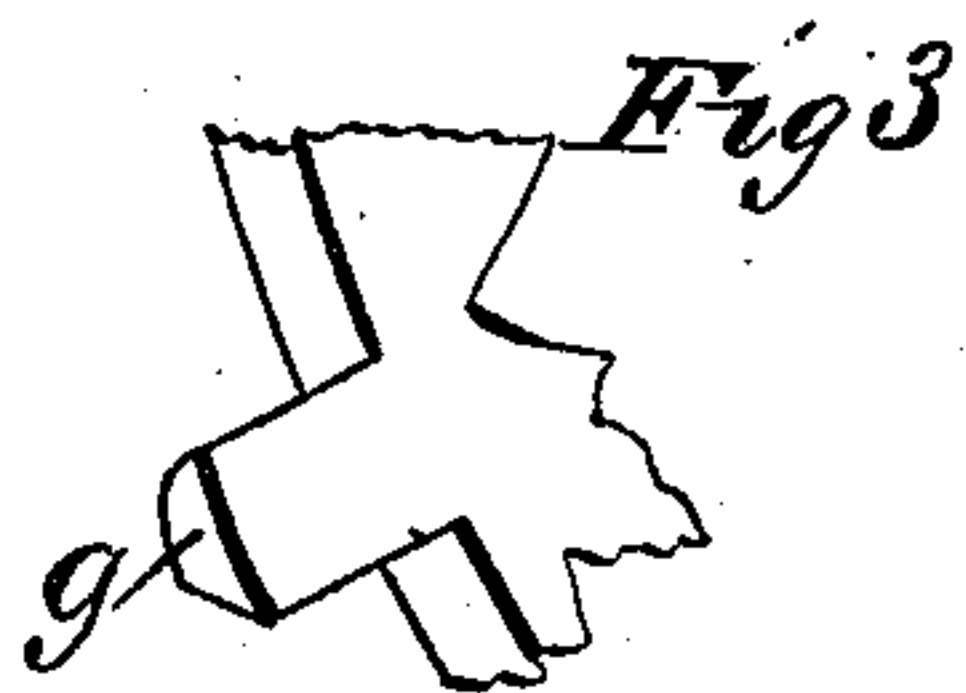
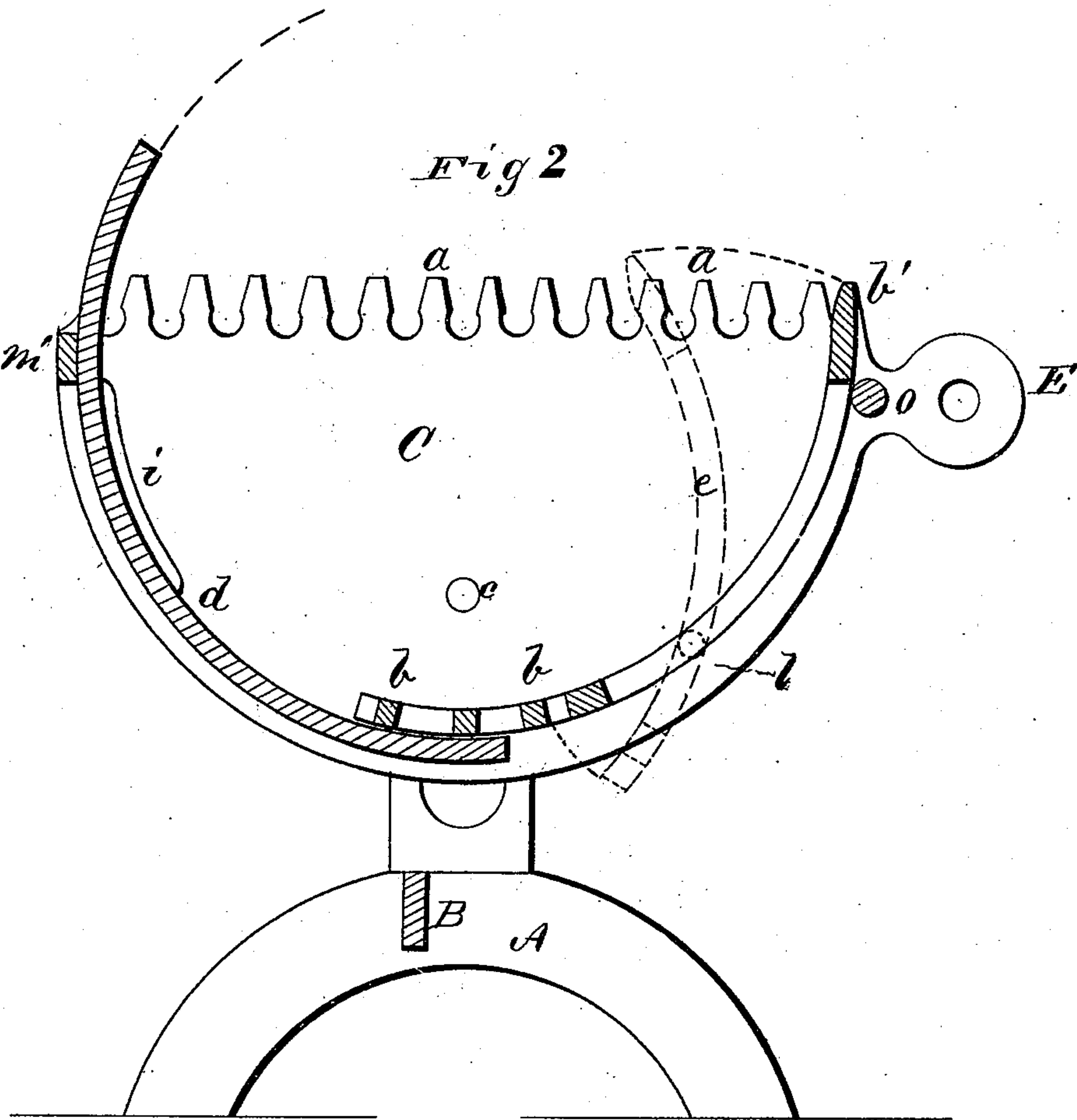
INVENTOR
James W. Williams
S. S. Lapinstock
Attorney

J. W. WILLIAMS.

GRATE.

No. 174,650.

Patented March 14, 1876.



WITNESSES

F. L. Ourand
Henry C. Miller

By

INVENTOR

James W. Williams
S. S. Lahnestock

Attorney

UNITED STATES PATENT OFFICE

JAMES W. WILLIAMS, OF CHARLOTTESVILLE, VIRGINIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO T. A. MICHIE AND T. L. MICHIE, OF SAME PLACE.

IMPROVEMENT IN GRATES.

Specification forming part of Letters Patent No. **174,650**, dated March 14, 1876; application filed August 11, 1875.

To all whom it may concern :

Be it known that I, JAMES W. WILLIAMS, of Charlottesville, Albemarle county, Virginia, have invented a new and useful Improvement in Grates, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to render more simple and efficient the grate patented to me, filed December 11, 1874, and dated January 5, 1875, No. 158,556.

In the drawings, Figure 1 represents a side or end view of my improved grate; Fig. 2, a normal sectional elevation of the same; Figs. 3 and 4, perspective views of the projections of sliding back plate. Fig. 5 is a perspective view of my detent-arm, as shown on Sheet 1.

A is the leg, there being two, connected by a bar, B. These legs sustain the upright toothed supports D, between the teeth of which rest the axles *c* of the grate or side plates C, both of which are slotted, the upper one being *i* and the lower one *k*. The upper slots *i* have several teeth or rests. *d* is the sliding back plate, having two projections, *g h*, on each side, working, respectively, in slots *i* and *k*. *e* is the tilting front grate, pivoted on each side by axles *l* below its center, and working in the side plates, which are secured together by bars *o* and *m*. *b b* are bars at the bottom of the grate, under which slides the back plate *d*, its position regulating the bottom draft, to do which, when the handles E are raised, projection *h* presses against the standards D and automatically pushes up the back plate *d*, uncovering the bottom bars, and increasing thereby the lower draft.

When dumping the ashes is desired, the top

part of the pivoted tilting grate *e* is pushed inward, leaving an open space below, through which the ashes fall, when its resume its original position automatically.

When the back plate *d* is pushed upward the projections *g* ride over the teeth in slots *i* and rest upon their upper edges. These teeth or rests are so shaped, as well as the projections *g*, as best mechanically to secure this purpose of holding the plate up, as also to permit it to be pushed in place again.

In Fig. 1 the grate is shown tilted forward in dotted lines.

f is a weighted lever or detent, having an elbow at its lower or outer end, the elbow-projection being intended to go between the teeth *a* of the side plates, holding the grate in any desired position.

A spring-stop may be attached to the standards D—one or both sides—the stop to enter holes in the side plates as detents, if such be desirable.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The toothed sliding back plate, in combination with the slotted side plates and the horizontal grate-bars.

2. In an oscillating grate, journaled in slotted standards, the front tilting grate-bars, in combination with the side plates and horizontal grate-bars.

3. The elbowed detent, in combination with the standards and toothed side plates.

J. W. WILLIAMS.

Witnesses:

J. M. BURNLY,
H. P. COCHRAN.