

(No Model.)

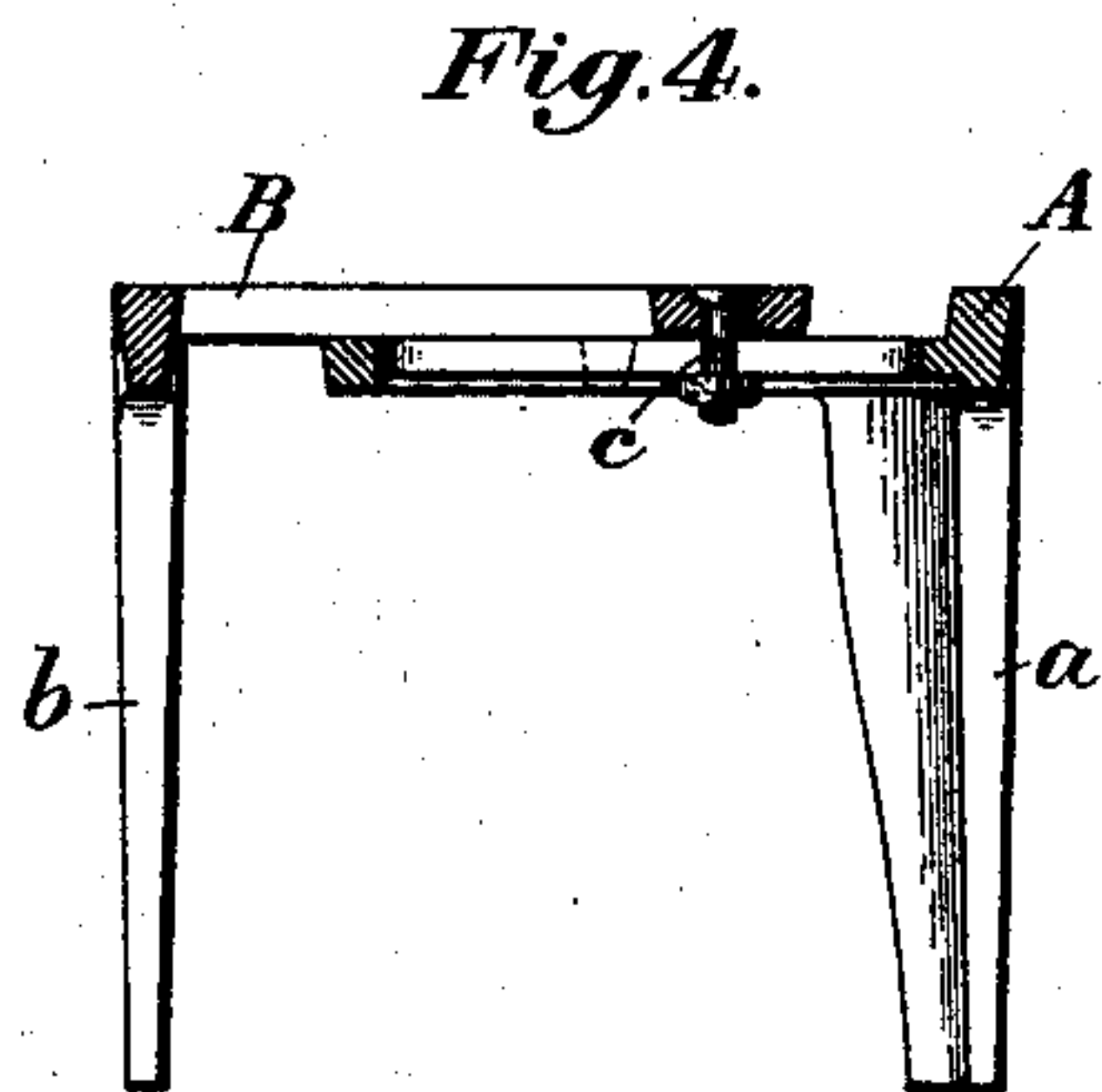
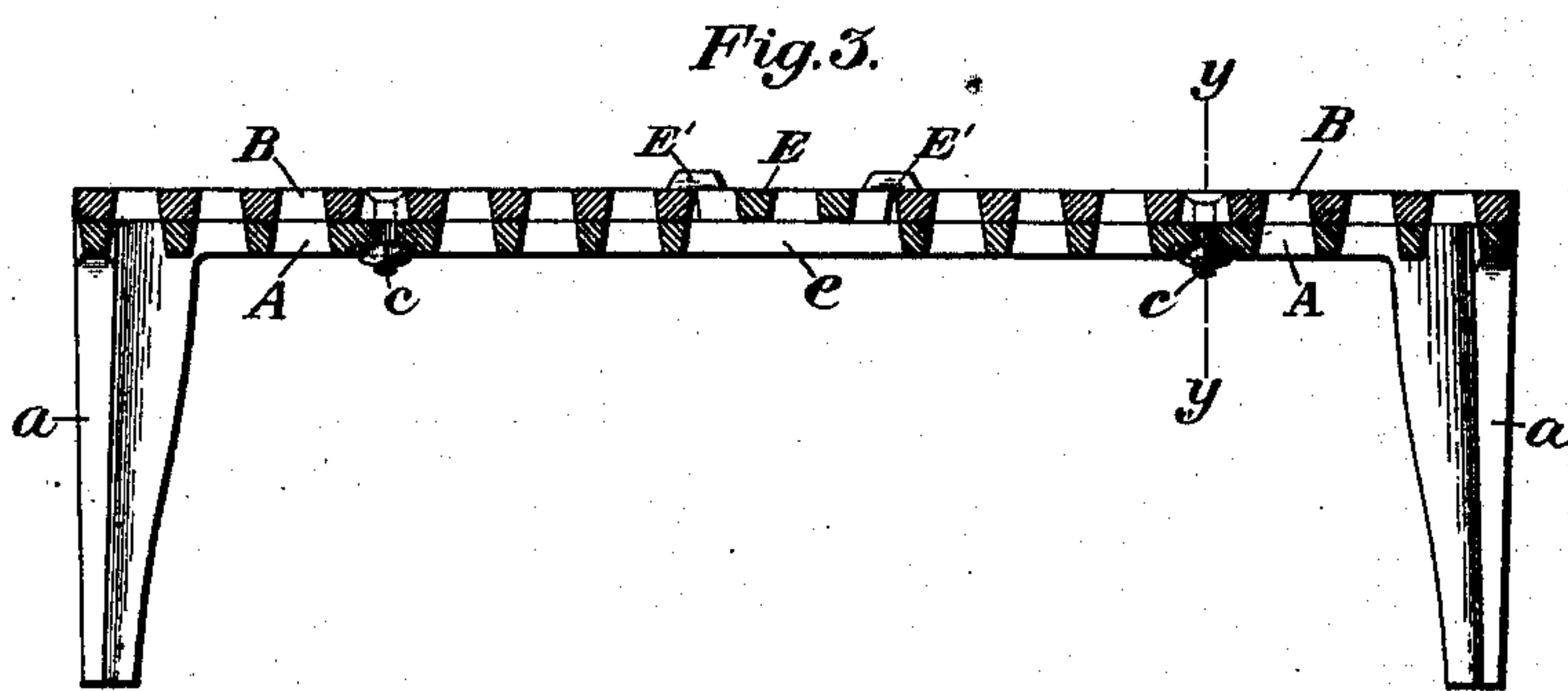
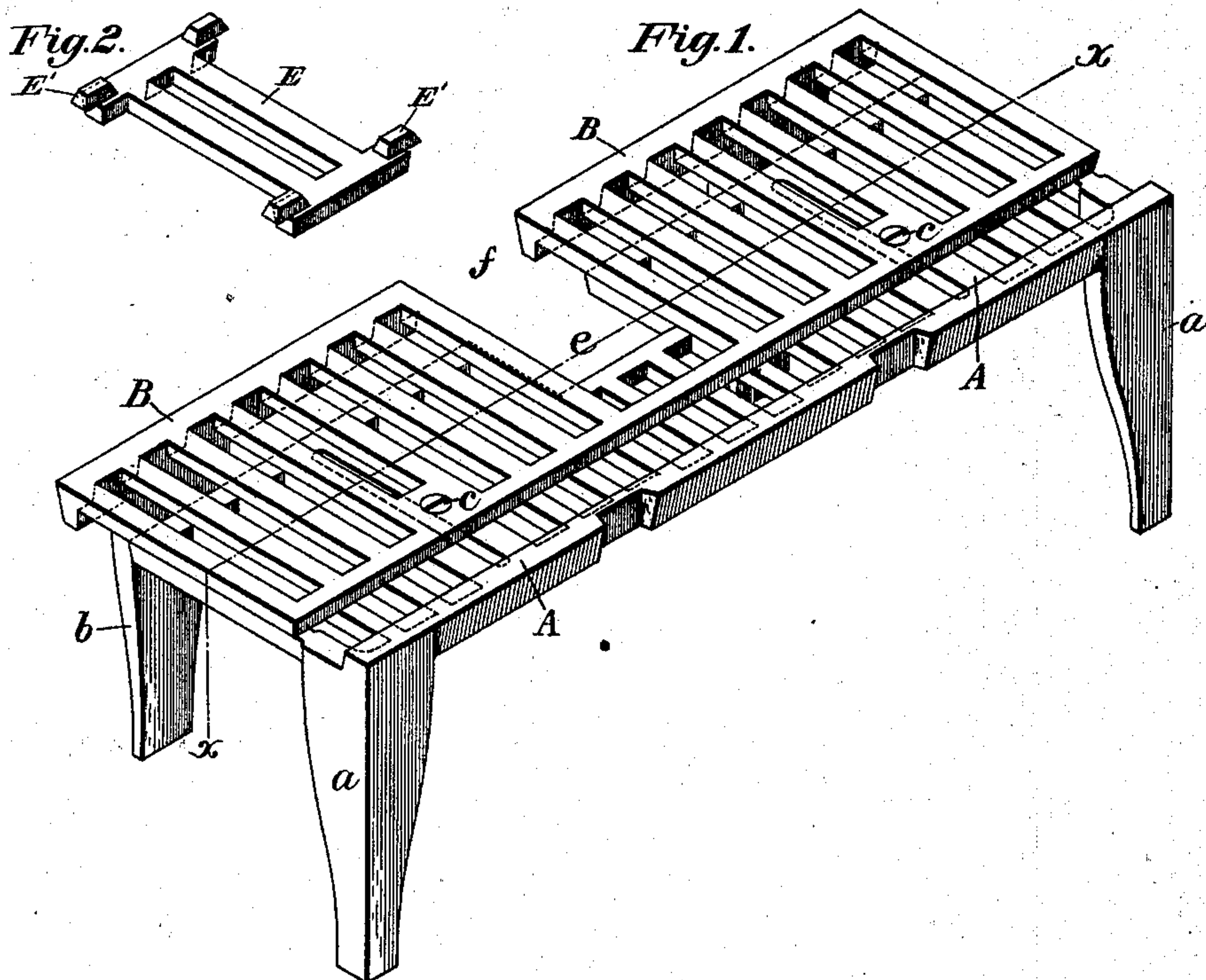
2 Sheets—Sheet 1.

F. S. BISSELL.

GRATE.

No. 388,473.

Patented Aug. 28, 1888.



Witnesses.  
Harry L. Gill  
W. H. Corwin.

Inventor.  
Frank S. Bissell.  
by Baxwell & Hen.  
his Attorneys.

(No Model.)

2 Sheets—Sheet 2.

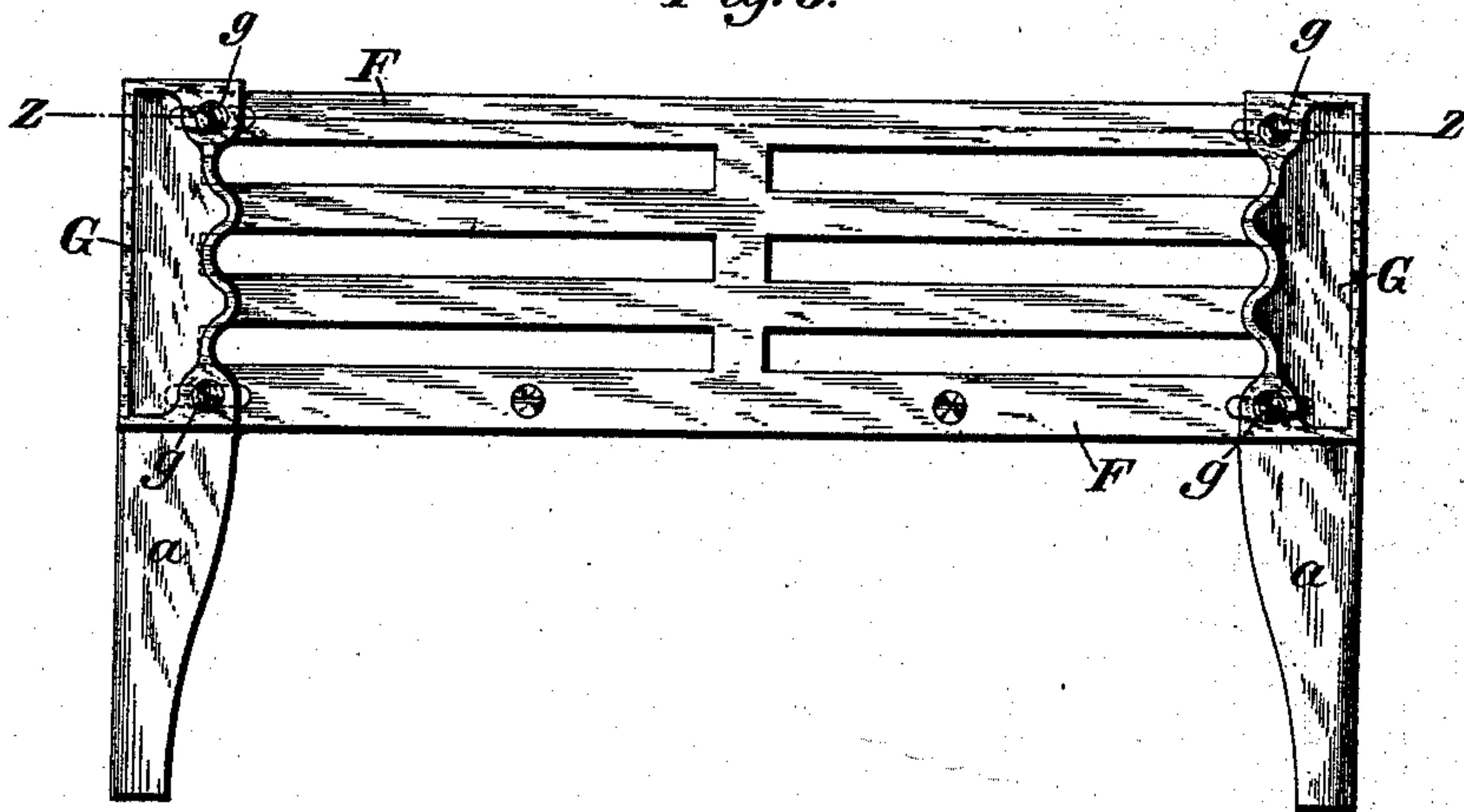
F. S. BISSELL,

GRATE.

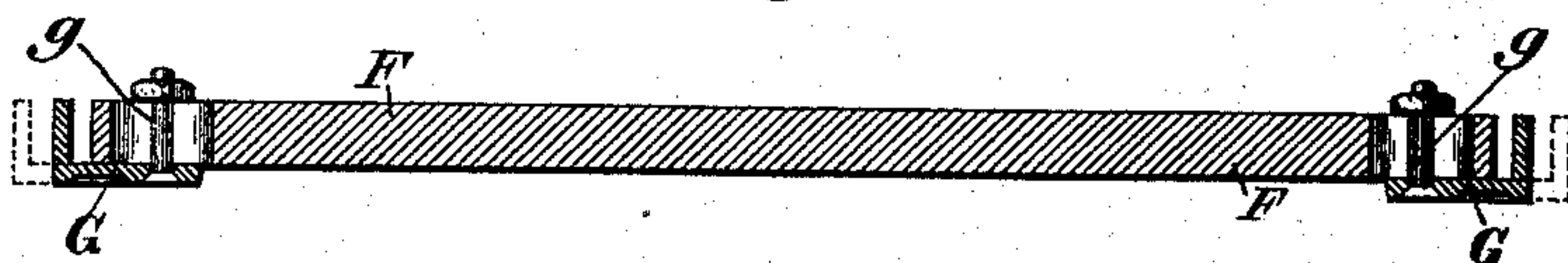
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*Fig. 5.*



*Fig. 6.*



*Witnesses.*

*Harry L. Gill*  
*W. D. Corwin*

*Inventor.*

*Frank S. Bissell,*  
*by Baxwell & Ken.*  
*his Attorneys.*



# UNITED STATES PATENT OFFICE.

FRANK S. BISSELL, OF PITTSBURG, PENNSYLVANIA.

## GRATE.

SPECIFICATION forming part of Letters Patent No. 388,473, dated August 28, 1888.

Application filed October 29, 1886. Serial No. 217,502. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK S. BISSELL, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Grates; and I do hereby declare the following to be a full, clear, and exact description thereof.

In the accompanying two sheets of drawings, which illustrate my invention, Figure 1 is a perspective view of the grate. Fig. 2 is a perspective detail view of a part. Fig. 3 is a vertical longitudinal section on the line *xx* of Fig. 1. Fig. 4 is a vertical cross-section on the line *yy* of Fig. 3. Fig. 5 is a view of the front of the grate. Fig. 6 is a horizontal longitudinal section on the line *zz* of Fig. 5.

Like symbols of reference indicate like parts in each.

The grate is made in two parts, A and B, each of which consists of a flat grated frame, preferably provided with vertical legs. The legs *a* of the frame A are at the front thereof and the legs *b* are at the rear of the frame B. As shown in Fig. 1, horizontal grate-frame B rests upon the frame A, so that together they form a single basket or grate, the width of which may be varied by moving the frame A forward and the frame B backward. When thus adjusted to the desired position, the frames may be rigidly joined together by bolts *c*, which pass through the upper frame, B, and through transverse slots in the lower frame, A, and are provided with set-nuts on the under side of the latter. When it is desired to set a grate in a fire-place, one of the compound grates above described, of the proper length, is chosen, and its parts A and B are adjusted so that the width of the frame from front to back shall be equal to the depth of the fire-place. The grate may then be set in position without necessarily removing any bricks from the fire-place and without need of employing the services of a bricklayer, as must be done when setting grates of the sort heretofore employed. A saving of time and expense is thus effected, the dirt arising from resetting the grate in the manner now practiced is avoided, and the grates are made easily changeable from one fire-place to another.

The frames A and B may be cast in two single pieces integral with their respective legs, though I do not intend to limit the scope of

my invention strictly to the use of the legs, which may be dispensed with and hooks or other supporting devices substituted therefor.

In some cases when a grate is set its ends do not fit neatly in the fire-place, because the grate is of less length than the width of the setting. To compensate for this, I provide the grate with an adjustable front. (Shown in Figs. 5 and 6.)

F is the grate-front, of ordinary construction. At its ends it is provided with small vertical ornamental pieces G, which are fitted to the front F by set-bolts *g*, passing through longitudinal slots in the front. By these means the sections G may be moved, as shown by the full and dotted lines in Fig. 6, so as to cover and compensate for any opening or crevice which would otherwise be between the ends of the grate and the setting.

In addition to the improvement which I have described, I also show another device which is of use when the grate is to be used in connection with a natural-gas burner. In fitting gas pipes and burners in grates it has been common practice to take out one of the grate-bars, and after the grate has been set to put the gas pipe or burner neck from below up through the hole in the grate, and then to secure the burner upon the end of the pipe. The fitting is then difficult to do, because of the interference of the grate, which is set before the burner is adjusted. To obviate this, I provide the grate with an opening or space, which extends from the back toward the middle. The burner may then be adjusted before the grate is set, the grate being afterward put in place by pushing it horizontally toward the back of the fire-place and causing the opening before referred to to inclose the burner pipe or neck. This construction also enables the gas-burner to be easily repaired or removed, when desired. The grate is also provided with means for closing this space when it is intended to use it with coal as a fuel. In the drawings, *e* is this opening, which is made by omitting a portion of the back rib of the frame A and parts of the grate-bars at the middle. The upper frame, B, has also a central space or opening, *f*, to register with the space *e* of the lower frame. I do not desire to limit this feature of my improvement to the adjustable grate which I have described, since, obviously, it may be applied to other



forms of grate as well. When it is desired to use coal instead of gas as a fuel in this grate, the gas-burner is removed and the opening *e* is closed by a small frame, *E*. (Shown in perspective in Fig. 2.) This is fitted over the hole *e*, and is there supported by the lugs *E'*, which fit on the grate-frame.

I claim—

1. The combination, with a grate having a vertical fire-front, *F*, of end plates or pieces, *G*, secured to the said front by pins and slots at the ends of the front, whereby said end pieces are adjustable longitudinally of the front to vary the length thereof, substantially as and for the purposes described.

2. The superposed and adjustable grate-

frames *A* and *B*, the frame *A* having an opening, *e*, extending from its back toward the front thereof, and the frame *B* having a similar opening, *f*, registering with the hole *e*, substantially as and for the purposes described.

3. A grate for fire-places having a gas-burner space, *e*, open at the back of the grate and extending toward the front thereof, and a removable grating for covering said space, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 23d day of October, A. D. 1886.

FRANK S. BISSELL.

Witnesses:

T. W. BAKEWELL,  
W. B. CORWIN.