

J. D. SLICHTER.

Grate.

No. 159,361.

Patented Feb. 2, 1875.

Fig. 1.

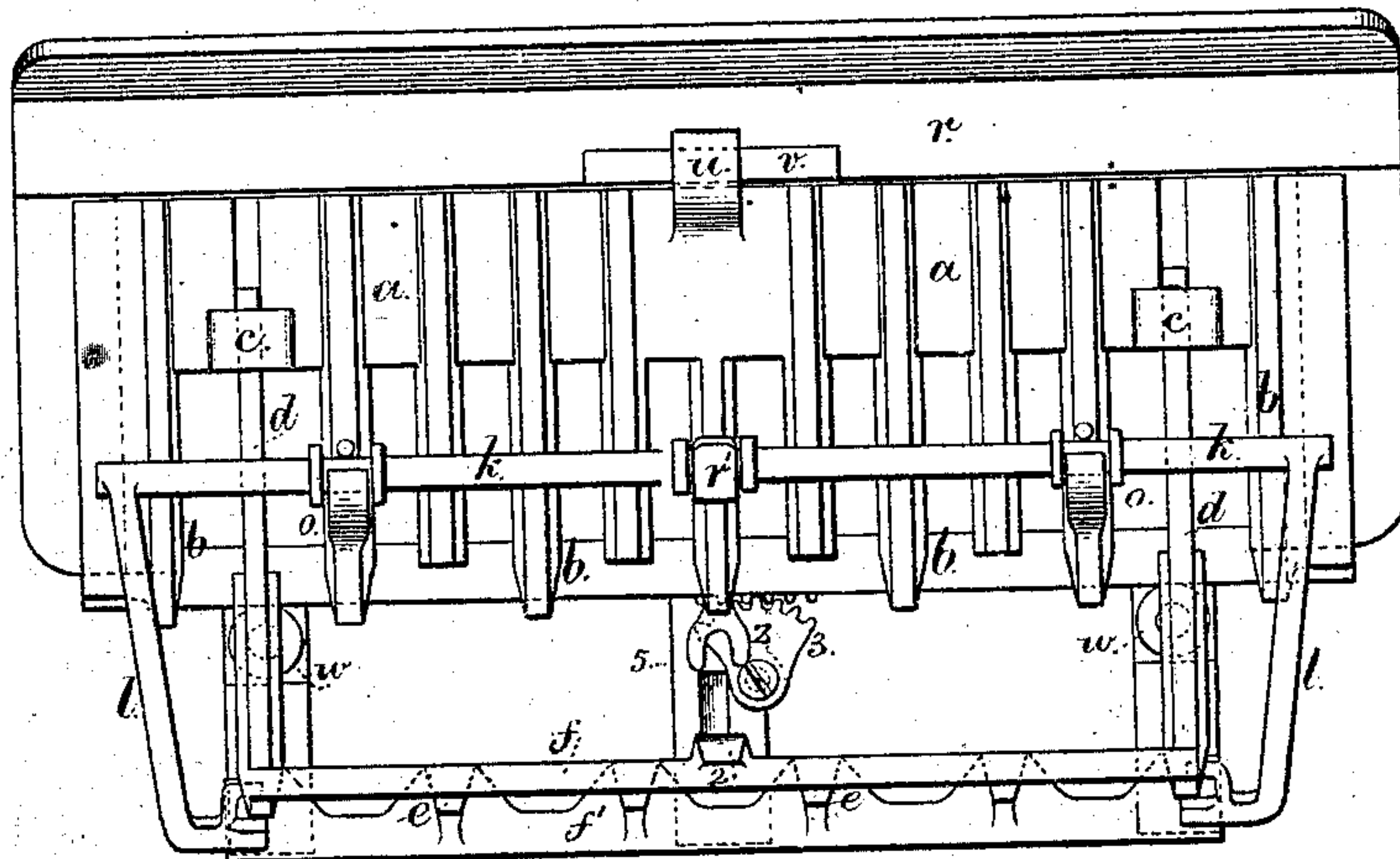


Fig. 3.

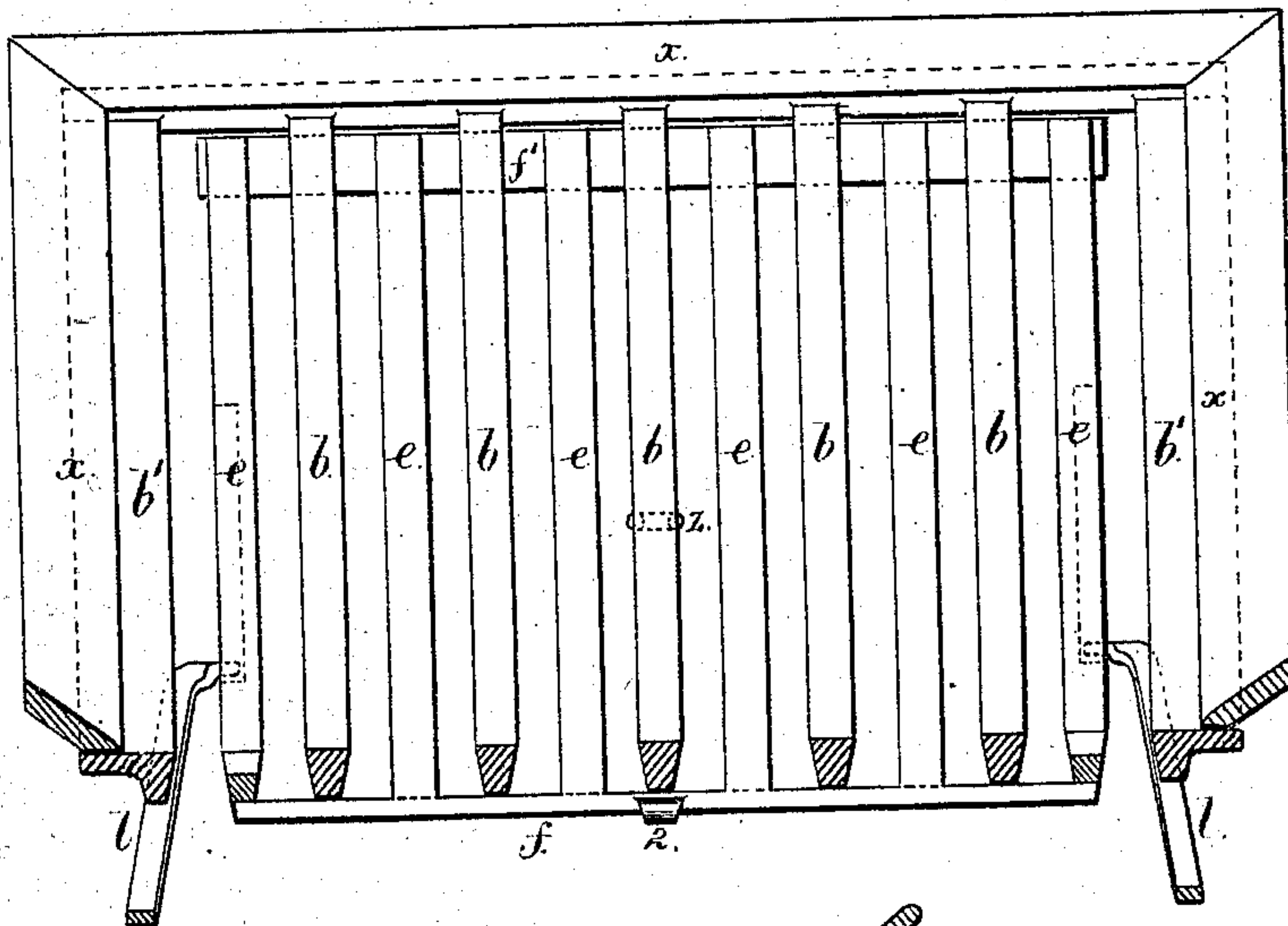
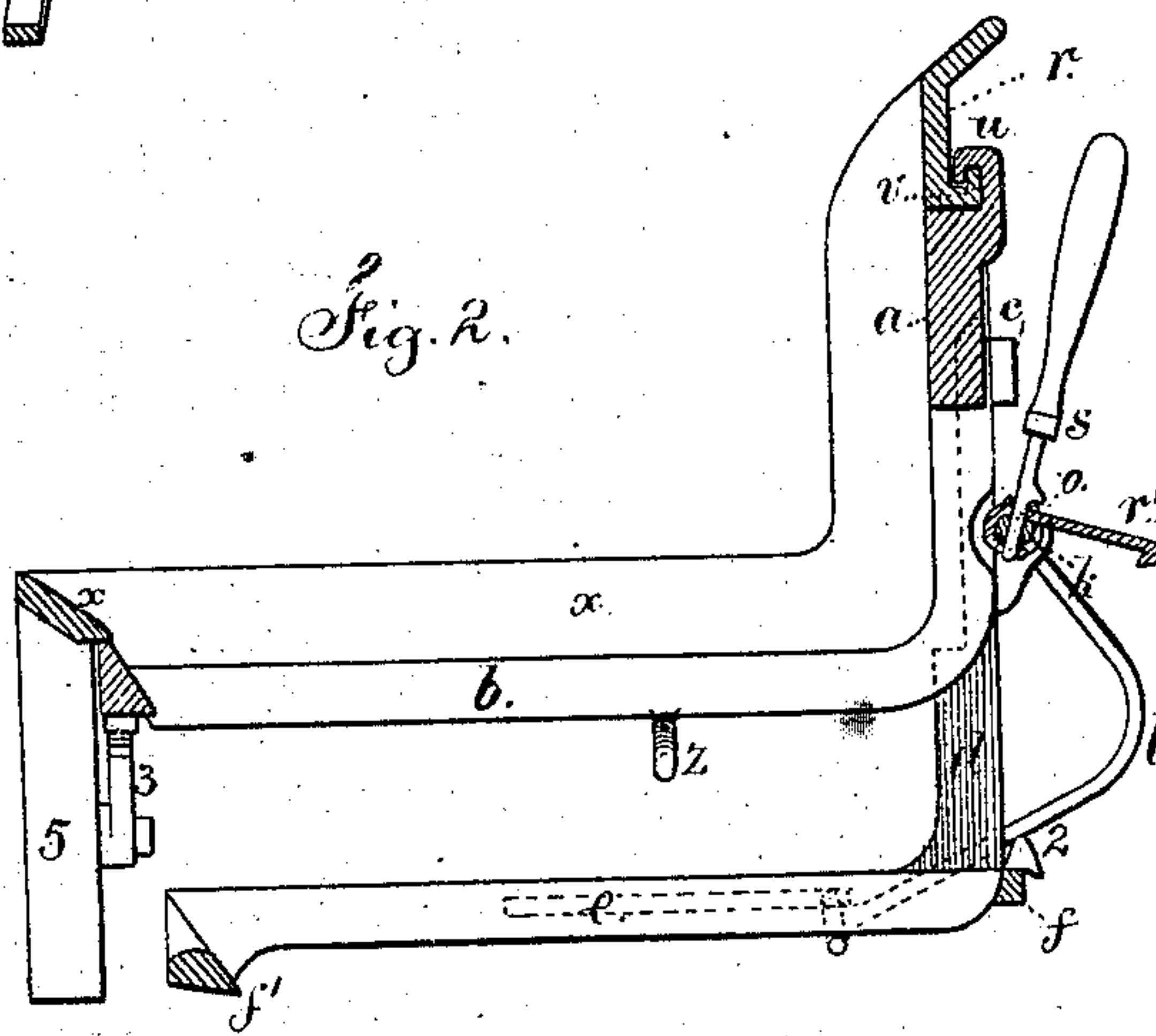


Fig. 2.



Witnesses
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att'y

UNITED STATES PATENT OFFICE.

JOSEPH D. SLICHTER, OF READING, PENNSYLVANIA.

IMPROVEMENT IN GRATES.

Specification forming part of Letters Patent No. 159,361, dated February 2, 1875; application filed October 3, 1874.

To all whom it may concern:

Be it known that I, JOSEPH D. SLICHTER, of Reading, in the county of Berks and State of Pennsylvania, have invented an Improvement in Grates for Ranges, Furnaces, Stoves, &c., of which the following is a specification:

This invention is made for raising and lowering the alternate bars in the grates of ranges, furnaces, or stoves, and for allowing the entire grate to be moved endwise.

The first-named movement shakes the fuel, separating the ashes from the coal, and allowing the larger pieces of clinker to drop or be raked out, and the endwise movement serves to break up any pieces of clinker that may be melted together, and to clean the lower part of the fire from ashes and foreign matter.

In the drawing, Figure 1 is an elevation of the grate with the alternate bars dropped. Fig. 2 is a cross-section of the same, and Fig. 3 is a section longitudinally of the bottom.

The grate is made with the front plate, *a*, and stationary bars *b* cast in one, and upon the front plate, *a*, there are guides *c*, in which slide the vertical bars *d* of the movable grate *e*. This grate *e* is adapted to set up between the stationary bars *b*, and the bearing-bars *f f'* connect the bars *e*, so that they may be raised or lowered bodily, and the vertical bars *d*, sliding in the guides *c*, serve to keep the bars *e* in a horizontal position, and parallel to the lower portions of the bars *b*. The cross-shaft *k* is set in bearings *o* upon the bars *b*, and at the ends are arms *l*, that act in slots in the bars *e*, to raise or lower them bodily as the shaft is turned. Upon this shaft *k* there is a catch, *r'*, that catches beneath the projection 2 on the longitudinal connecting or bearing bar *f*, so as to hold the bars *e* up in position when they are raised. This catch *r'* is either operated by the movable lever *s*, that is used to partially turn the shaft *k*, or else said catch *r'* may be self-acting by being weighted, in which case it will be drawn back by hand when the grate is to be raised or lowered to shake out dust, and to enlarge the

width between the stationary bars, and allow clinkers and other large accumulations to drop down through the stationary bars, or to be withdrawn.

The parts thus described are connected, as specified, and they can all have an endwise movement, so as to aid in clearing the fire. For this purpose the front plate, *a*, is connected with the stove front or plate *r* by the hook *u*, over the rib or ledge *v*, and at the bottom the grates are supported by the rollers *w* or a toothed segment, 3, so that the grates are free to be moved endwise bodily, to shake the fuel and separate the ashes. The inclined or hopper-shaped skirt *x* above the edges of the grates serves to prevent the clinkers from getting into the spaces at the edges of the grate, and with this object in view the end bars, *b'*, are made wider.

The back standard, 5, is shown with a recess in it, into which may be placed the end of a poker or bar, and said poker enters the fork *z* on the bar *b*, so that the required leverage may be obtained for shaking the grate by the endwise movement.

A roller may be provided at the ledge *v*, to support the weight and lessen the friction.

I do not herein claim a grate in which one or more of the bars have a vertical movement in guides.

I claim as my invention—

1. The grate-bars *e*, connected together and guided by the vertical bars *d* in the bearings *c*, in combination with the shaft *k* and arms *l*, substantially as set forth.

2. The bars *e*, sustained by the arms *l* and shaft *k*, in combination with the bars *b*, plate *r*, and supports *w w* and *v*, substantially as specified, whereby the entire grate can be moved endwise or the bars *e* lowered, for the purposes and as set forth.

Signed by me this 8th day of September, A. D. 1874.

JOSEPH D. SLICHTER.

Witnesses:

CHAS. H. SMITH,
GEO. D. WALKER.