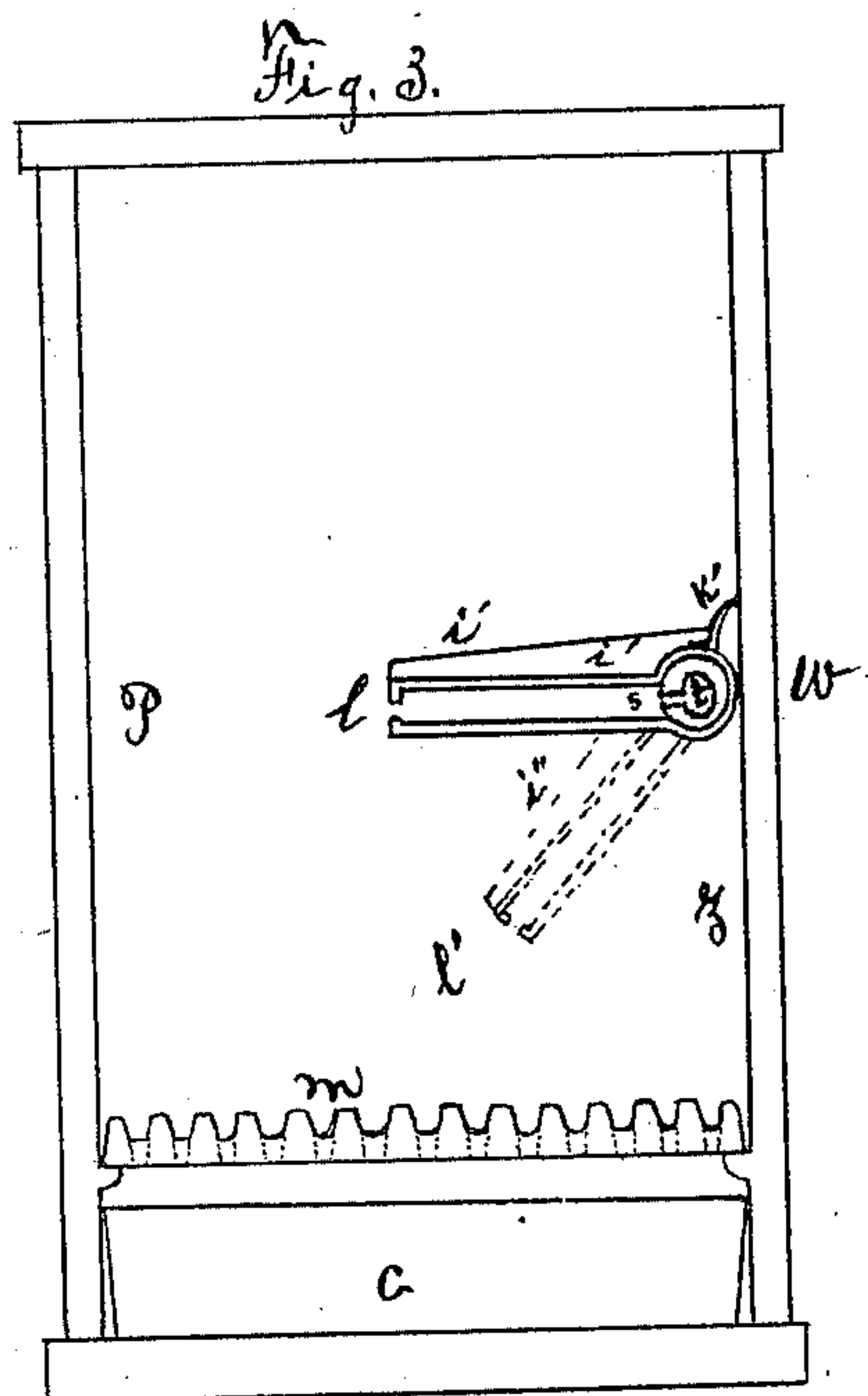
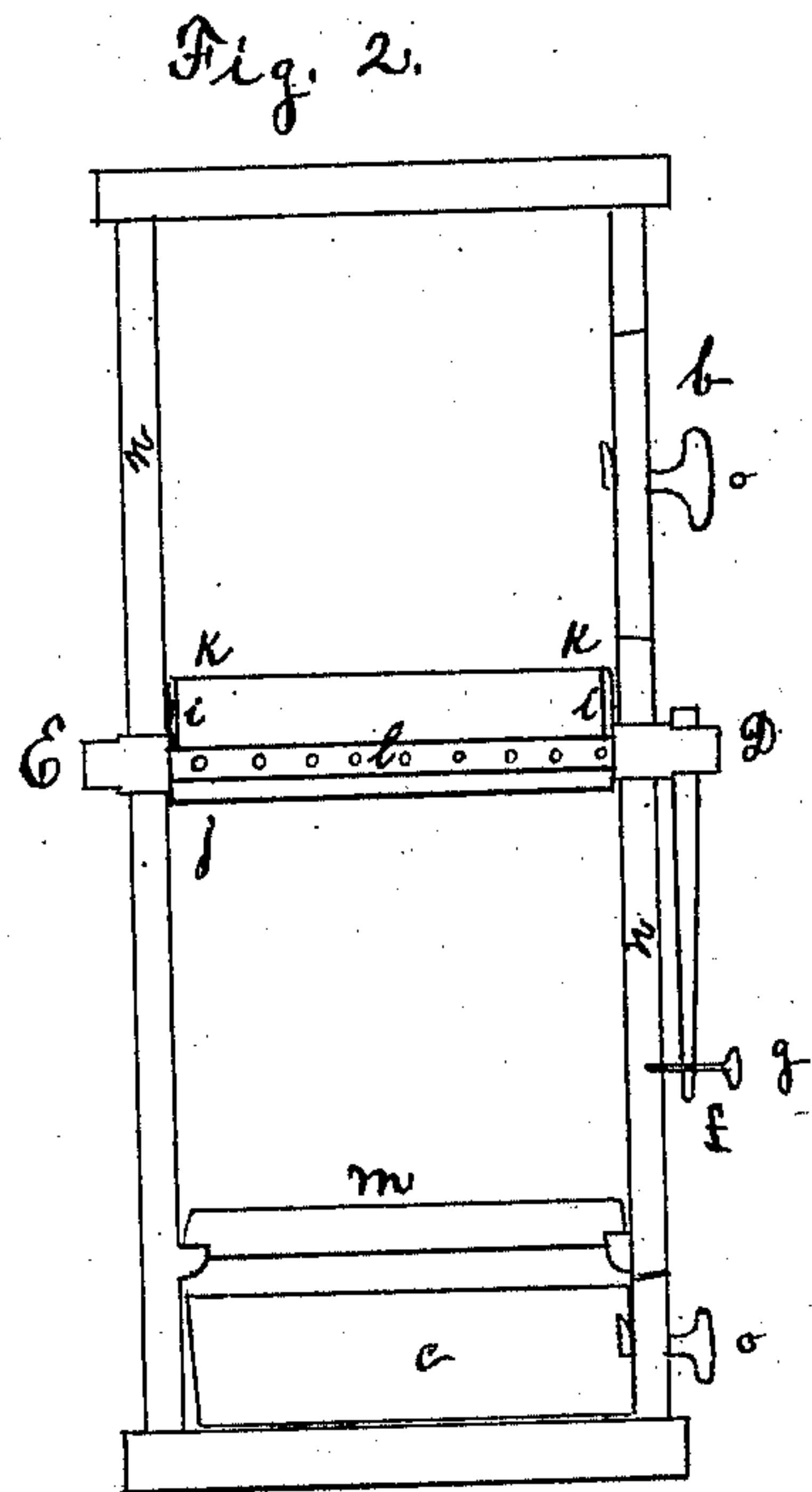
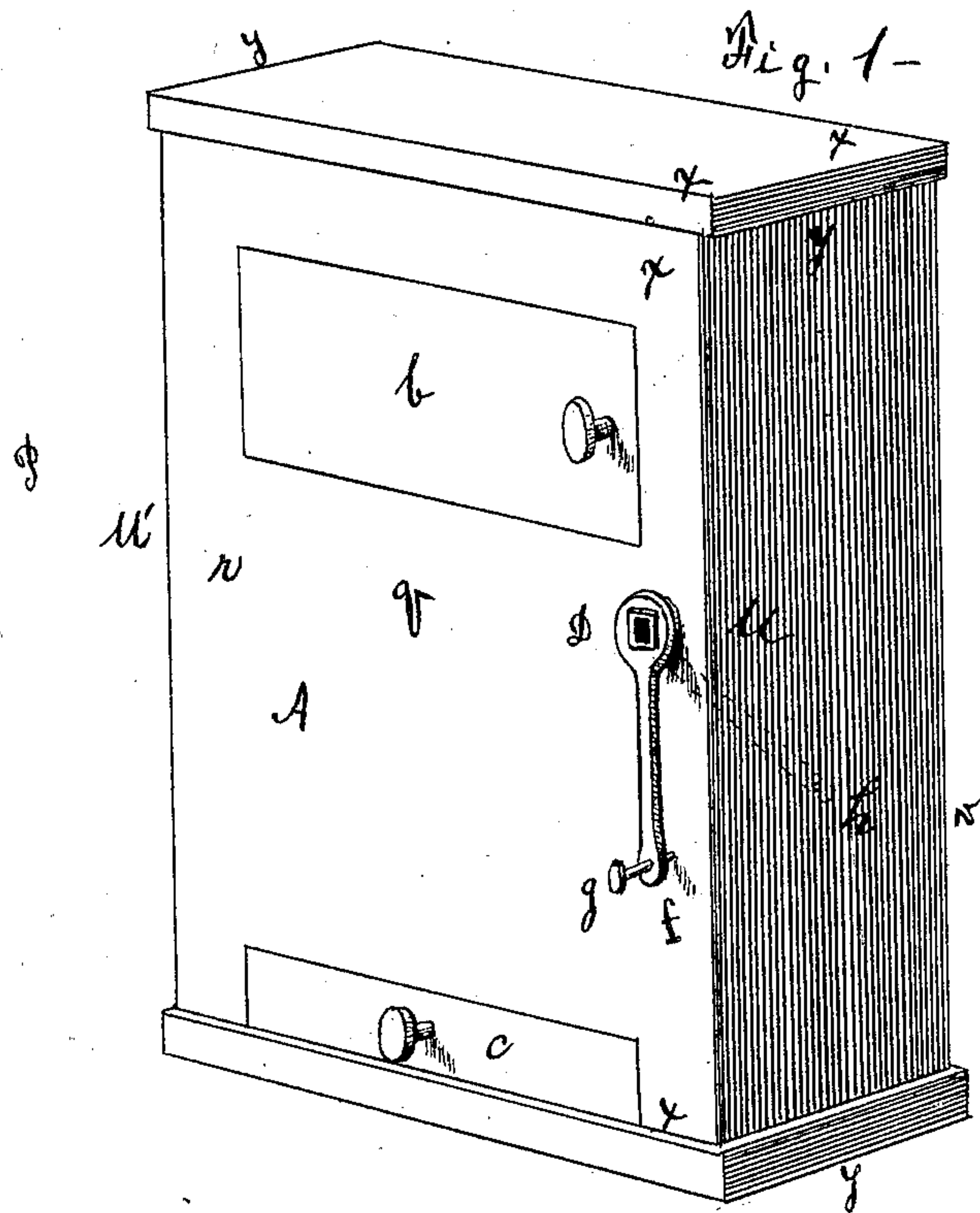


J. W. WETMORE.  
FIREPLACE.

No. 112,199.

Patented Feb. 28, 1871.



Witnesses  
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JEROME W. WETMORE, OF ERIE, PENNSYLVANIA.

Letters Patent No. 112,199, dated February 28, 1871.

## IMPROVEMENT IN FIRE-PLACES.

The Schedule referred to in these Letters Patent and making part of the same.

I, JEROME W. WETMORE, of Erie, in the county of Erie and State of Pennsylvania, have invented certain Improvements in Non-Smoke-producing Fire-Places, of which the following is a specification.

### *Nature and Objects of My Invention.*

My invention consists in a shelf arranged above the grate-bars in the fire-places of stoves or heaters of any kind, onto which the fuel is first placed to be heated and partly burned on the surface, and from which it is thrown down onto the fire.

The object is as follows:

The effect of throwing cold coal onto a fire is to smother it, check combustion, and throw off unconsumed carbon. By my invention, the coal being heated and partly ignited before being thrown onto the fire proper, there is secured a more perfect consumption of the most deleterious part of the smoke now given off from bituminous coal fires.

The object is also to secure a fire-box in which fine coal can be burned. The fine coal will not fall through the shelf, but will be caked on the surface by the heat, and can be thrown off in lumps onto the grate.

It is a partial surface-burner for bituminous coal.

### *Description of the Accompanying Drawing.*

Figure 1, a perspective view of a stove or heater which contains the fire-box.

Figure 2, a sectional view of the case of fig. 1 through  $x x x$ , a view of the ends of the shaft D E as far as through the sides  $n n$ , and a front view of the shelf, seen from positions P, figs. 1 and 3.

Figure 3, a vertical section through  $y y$ .

### *General Description.*

A, the shell of the stove or fire-box.

b, the door for putting in fuel, &c.

c, ash-pan.

D E, shaft, which sustains the shelf.

D f, lever, to operate the shelf and dump the fuel onto the grate.

g, pin or hook, to hold the shelf in place.

h D, position of the lever when the shelf is dropped to throw the fuel onto the fire, as at  $l$ , fig. 3.

i i', flange sides of the shelf.

j K, front view of the shelf, seen from point P.

K K K', back of the shelf.

l s, air-chamber in the shelf, to prevent it from burning out.

l, openings in the face or outer edge of the shelf, for the heated air to pass into the furnace.

t, opening through the shaft D E.

S t, holes, from the hollow shaft into the air-chamber of the shelf.

m, grate-bars.

n n, sides of the furnace.

o, handles and latches to the door and ash-pan.

The operation is as follows:

The fire is started on the grate  $m$ . The shelf is held in a horizontal position by the hook or pin  $g$ , as seen in figs. 2 and 3, and fresh fuel placed on it. When this is heated and more or less ignited, and additional supplies are needed on the grate, some part of that on the shelf is thrown off by the poker, or the lever is released and the shelf drops, as seen at  $l$ , and deposits the remainder of its contents onto the fire on the grate.

The following are several other modes in which I have contemplated the application of the principle of my invention:

First, two shelves may be used together; the second one on the left side, similar to that described. There could then be a feeding-door at each shelf, and a middle door below, to get at the grate.

Second, another lever may be used on the shaft E D, fig. 2, at E. These two would be joined by a connection from  $h$  to near  $v$ , fig. 1.

Third, the hollow shaft may pass through at  $q$  instead of at D, fig. 1. In the fire-box of the steam-boiler the end E would be most entirely closed, and would rest in the tube of the boiler, opposite to  $q$ , across the fire-box. Then the shelf, instead of being on one side of the shaft D E, would extend equal distances to the right and left of it, and the air-openings would be on both sides of it into the air-chambers of the shelf. This form is preferred, because the weights of coal on the two wings of the shelf would balance each other.

Fourth, the shelf may be on the front side, on a shaft passing from W to W'.

Fifth, the shaft may be fixed in any of the positions, and the fuel thrown off by pokers, at the door or small openings for the purpose.

Sixth, the outer edge of the shelf,  $l$ , fig. 3, may rest loose on a fixed hollow shaft, or on a wall of iron or fire-brick; the edge W be movable, and be raised by a pinion-bar running from the middle of the edge of the shelf at W down below point  $z$ , in which a small pinion-wheel would work at  $z$ , operated by a lever on a shaft coming to the front at the point  $g$ , fig. 1. There would thus be a gain in lever power to tip the shelf.

Seventh, air-tubes may be constructed from K down to about Z, so that as the hot air rolls over the edge  $l$ , fig. 3, the colder air and unconsumed carbon may be conducted into the fire.

### *Claim.*

I claim as my invention—

The shelf for fresh fuel in the fire-places or fire-boxes of stoves and other heaters, constructed as and for the purpose hereinbefore set forth.

J. W. WETMORE.

Witnesses:

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