

E. Perkins, *Metallic Shutter.*

N^o 82,159.

Patented Sep. 15. 1868.

Fig: 1

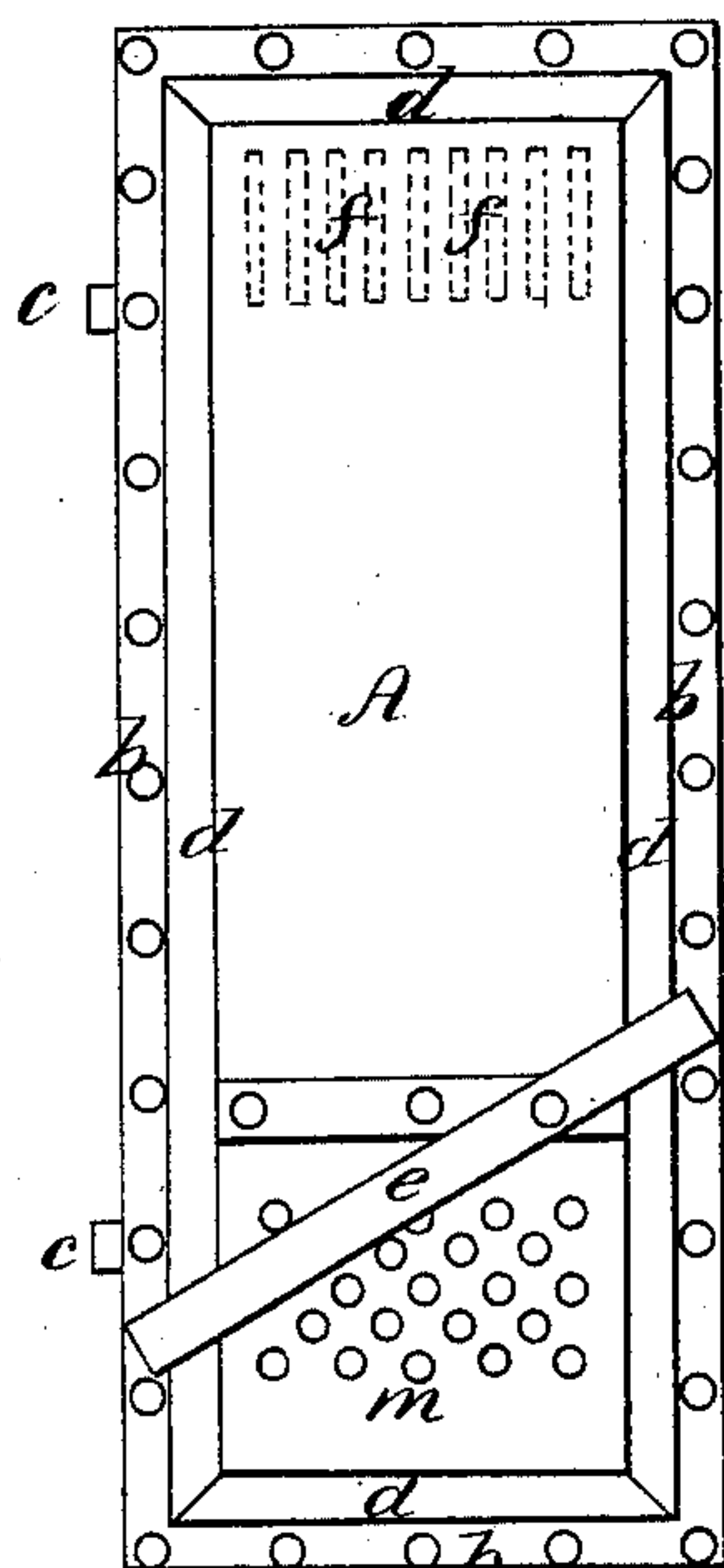


Fig: 2.

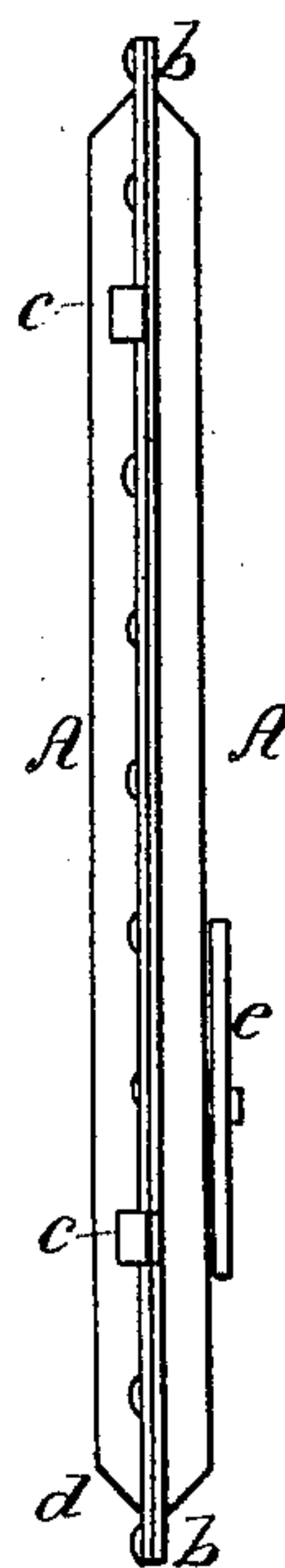


Fig: 3.

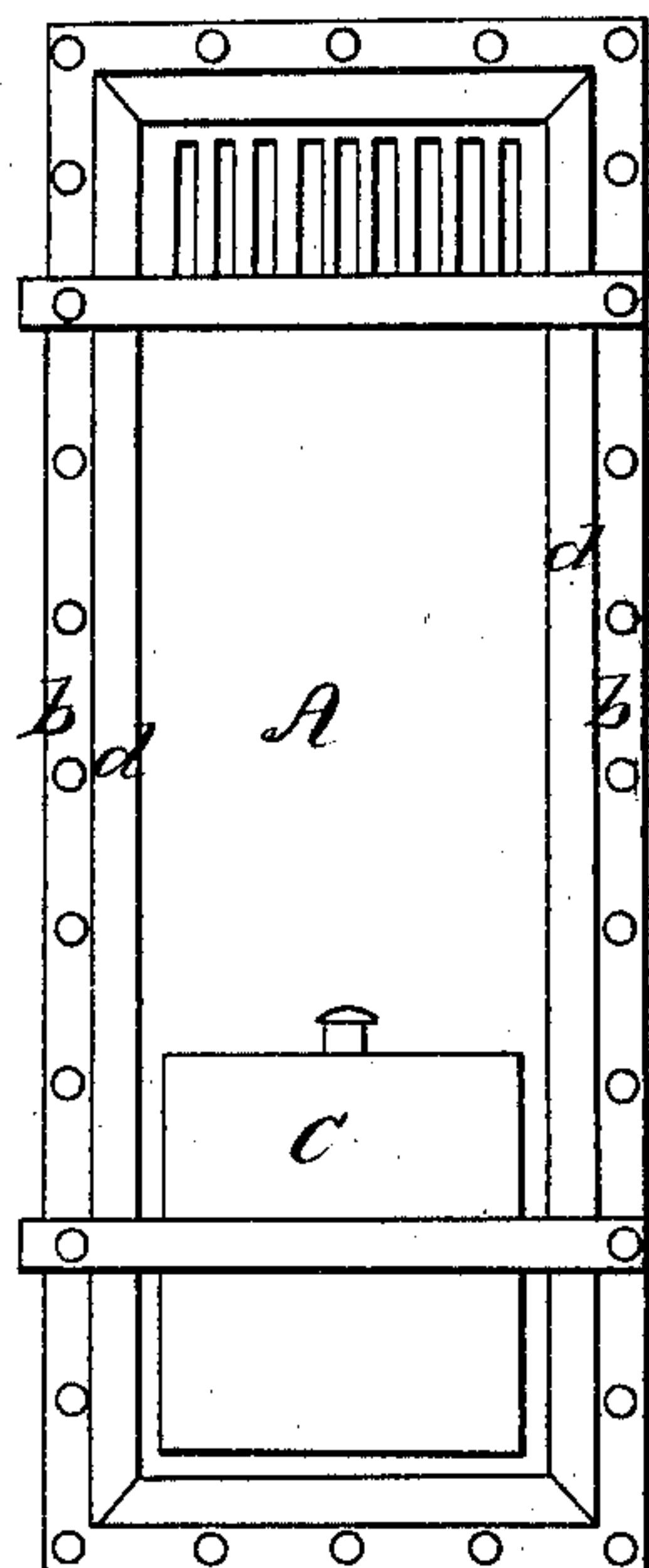
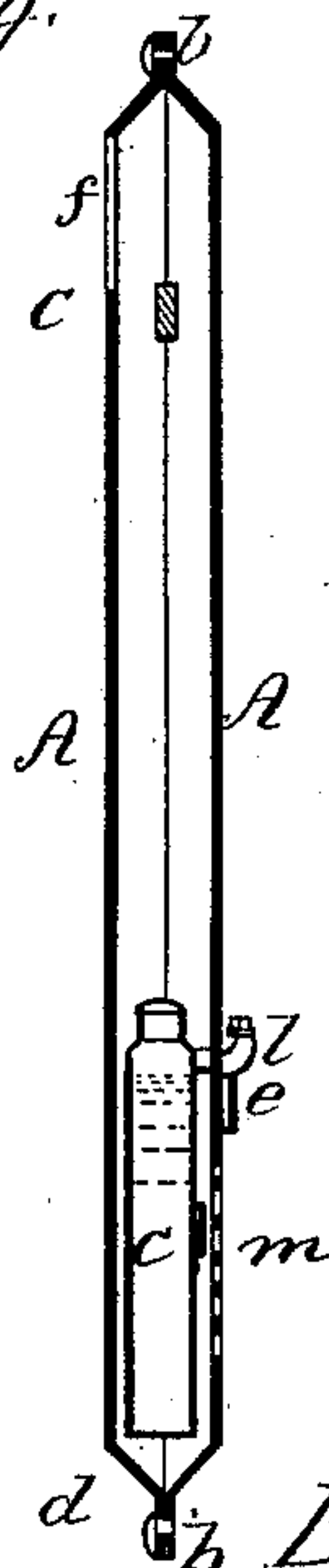


Fig: 4.



Witnesses,

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UNITED STATES PATENT OFFICE.

E. PERKINS, OF FOND DU LAC, WISCONSIN.

IMPROVED METALLIC SHUTTER.

Specification forming part of Letters Patent No. **82,159**, dated September 15, 1868.

To all whom it may concern:

Be it known that I, ELIAB PERKINS, of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Metallic Shutters for Buildings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention consists in constructing metal shutters for buildings in a manner to render them stronger than when made of a single thickness, as has heretofore been customary. It further consists in securing within the shutter a reservoir of water to render it more effectually fire-proof.

Figure 1 is a front elevation of a single shutter. Fig. 2 is an edge view of the same. Fig. 3 is inside view of one-half of the shutter, showing the water-vessel in place; and Fig. 4 is a transverse vertical section, taken on the line *xx* of Fig. 1.

In constructing my improved shutter, I take a plate of iron of the proper size, and form it up, in a die or otherwise, in the manner represented in the drawings, the body of it being recessed on the inside, and having a flange, *b*, projecting radially all around, the flange and body being united by an inclined shoulder, *d*, as represented more clearly in Figs. 2 and 4. After making a pair of these plates, *A*, just alike, they are placed with their recessed sides together and firmly secured by riveting their flanges *b* together all around. Previously to thus uniting the plates *A*, I form in each of them, near one end, a series of openings in the form of small slits or holes, as represented at *f* and *m* of Fig. 1, the plates being so united as to bring the openings or perforations at the bottom of the inside plate and at the top of the outside plate, as represented in Figs. 1 and 3. The object of these openings is to render the shutter more effectually fire-proof by permitting a current of air

to pass up between the plates, when heated from the outside by the burning of an adjoining building.

In order to render them still more effectually fire-proof, I secure between the plates *A* a metallic can, *c*, as shown in Figs. 3 and 4, which is to be filled with water, so that, as soon as the heat becomes sufficiently intense, steam will be generated and fill the space between the plates.

The can or reservoir may be of any desired size and form adapted to the space it is to occupy; but I prefer to have it so arranged as to leave an air-space between it and the plates, as shown in Fig. 4.

A small spout or tube may be arranged to come opposite, or protrude through, a hole in the inside plate, as shown at *l* in Fig. 4, through which the can may be replenished or filled, when necessary.

When the water-reservoir is used, there may be openings to permit the steam to escape on the inside, if preferred, for the purpose of more effectually protecting the wood-work of the window or frames.

It is obvious that, if preferred, the space between the plates *A* may be entirely filled with any suitable non-conducting substance, to render the shutters fire-proof, the same as the walls of safes are now filled. In such cases the recesses in the plates may be made more shallow, so as not to render the shutter, when thus filled, too heavy.

By constructing the shutters on this plan, they are rendered very much stronger than when made of a single flat plate or sheet; and it is obvious that much lighter metal may be used in their construction. A shutter thus made is not only a much better protection against fire, but it is also a much better protection against burglars, as it is far more rigid, and not so easily pried open.

If desired, the plates may also be corrugated, to render them still more rigid, in which case it would be best to have the corrugations run vertically on one plate and transversely on the other, or diagonally in one direction on one plate and diagonally in the opposite direction on the other plate.

The hinges *e* may be formed on the protrud-

ing ends of bars which extend across between the plates, and securely riveted to the flanges at each side, as shown in Fig. 3.

The fastening may consist of an iron bar, *e*, bolted securely to the inside plate *A*, in the same manner that it is ordinarily used on metallic shutters.

Having thus described my invention, what I claim is—

1. A metallic shutter formed of two plates,

recessed and riveted together in the manner substantially as described.

2. A metal shutter constructed substantially as herein described, and provided with a water-reservoir, substantially as set forth.

E. PERKINS.

Witnesses:

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