

No. 679,145.

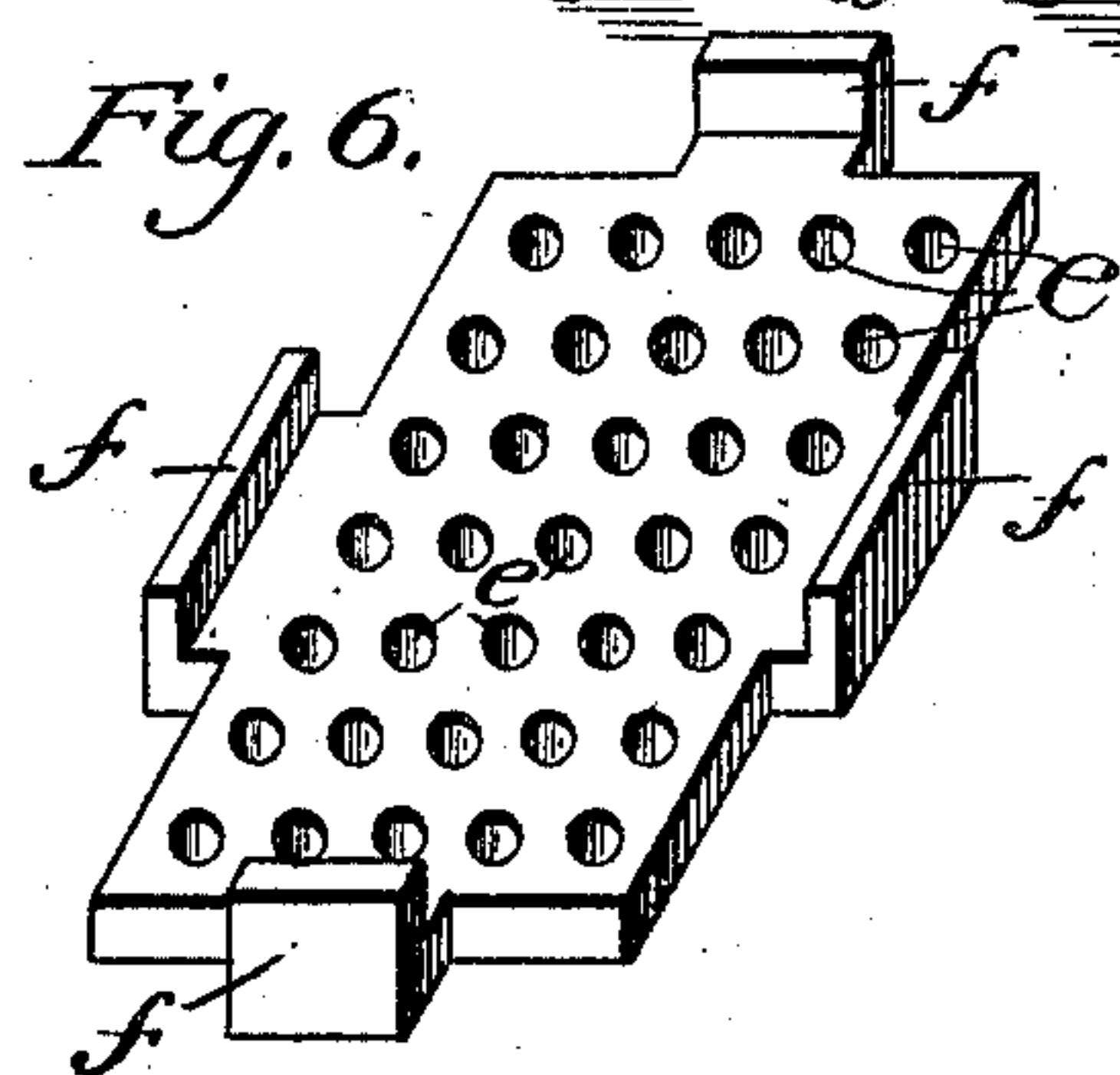
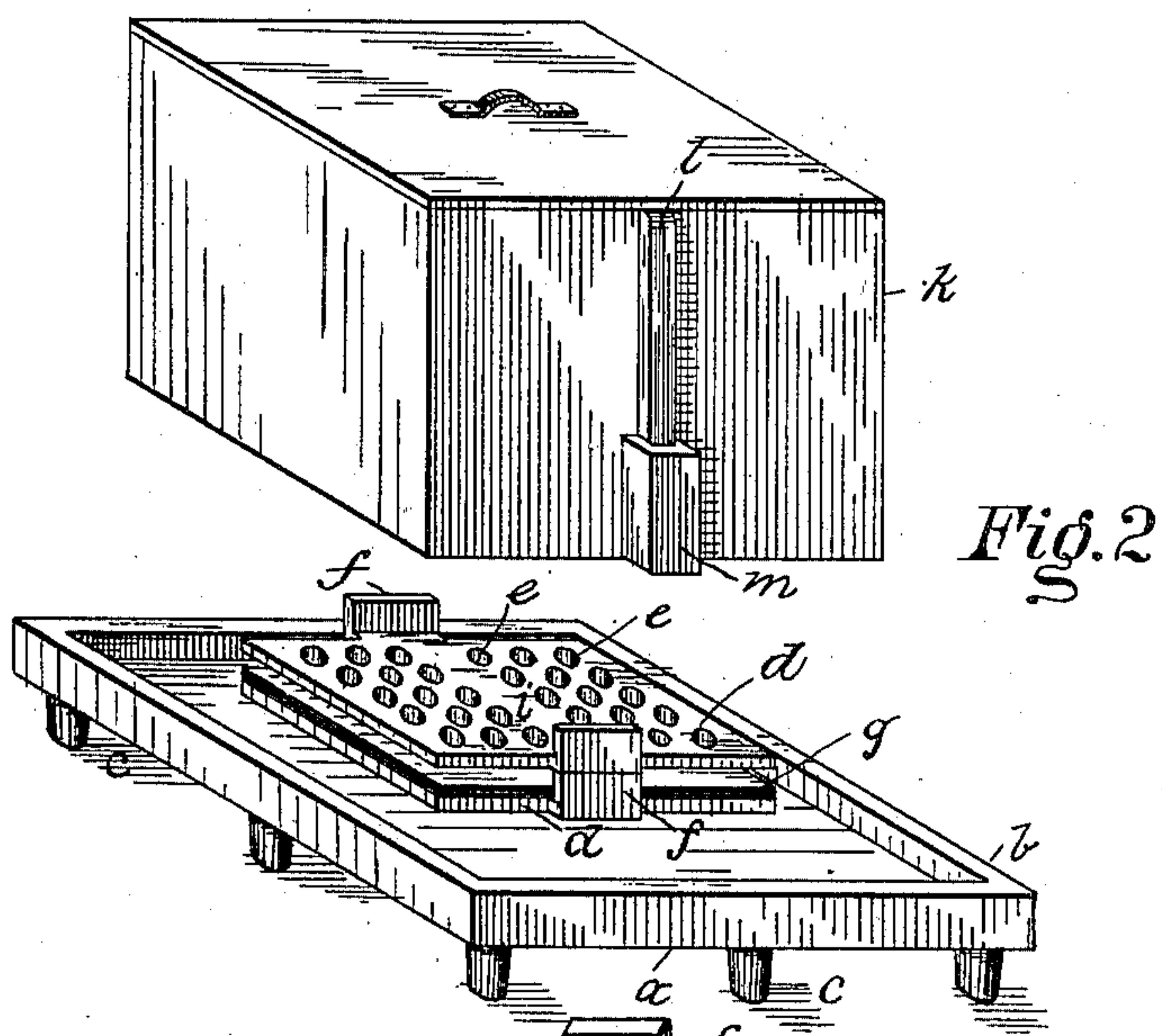
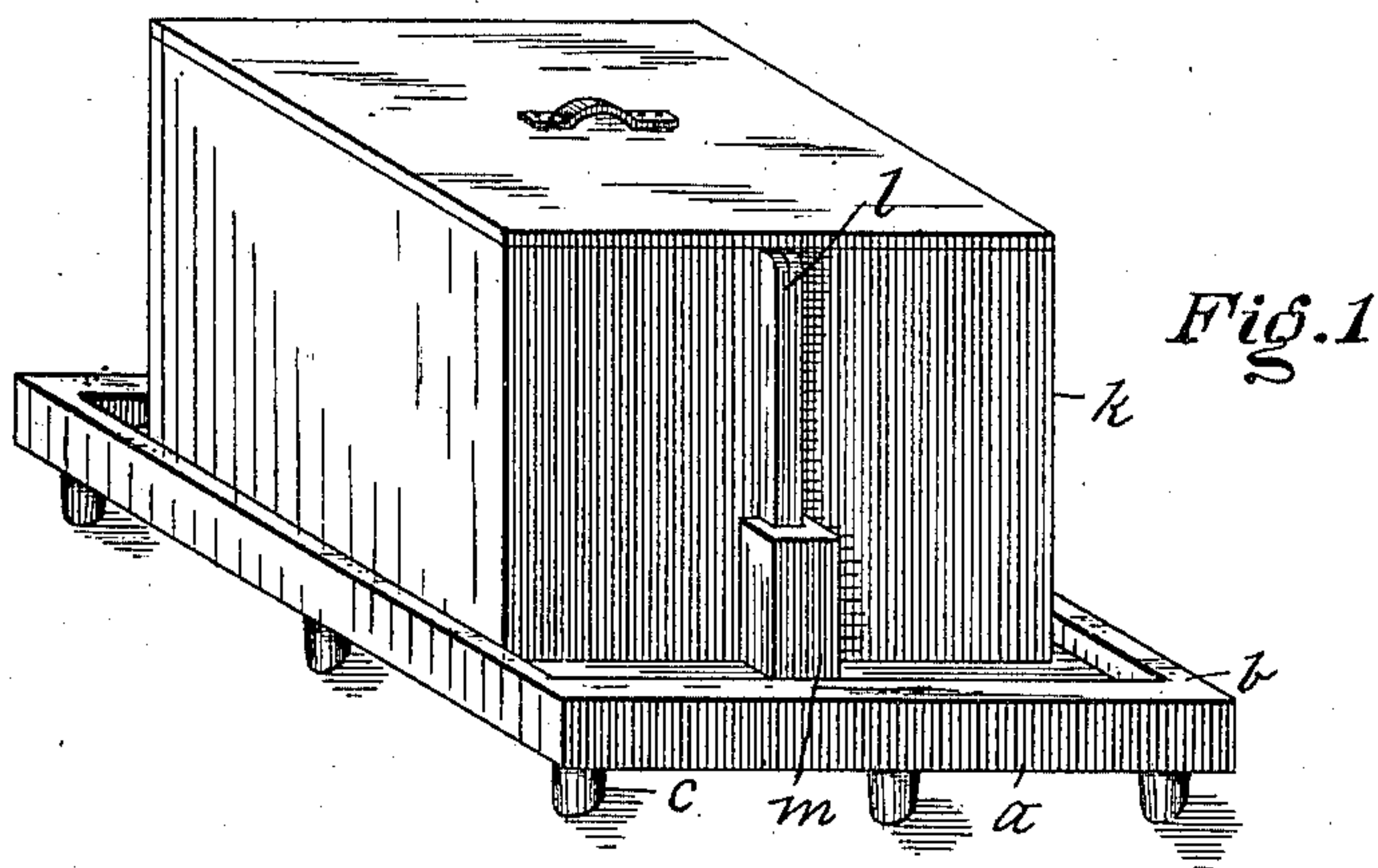
Patented July 23, 1901.

W. E. HARRIS.
ANNEALING BOX.

(Application filed July 22, 1898. Renewed June 17, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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2 Sheets—Sheet 2.

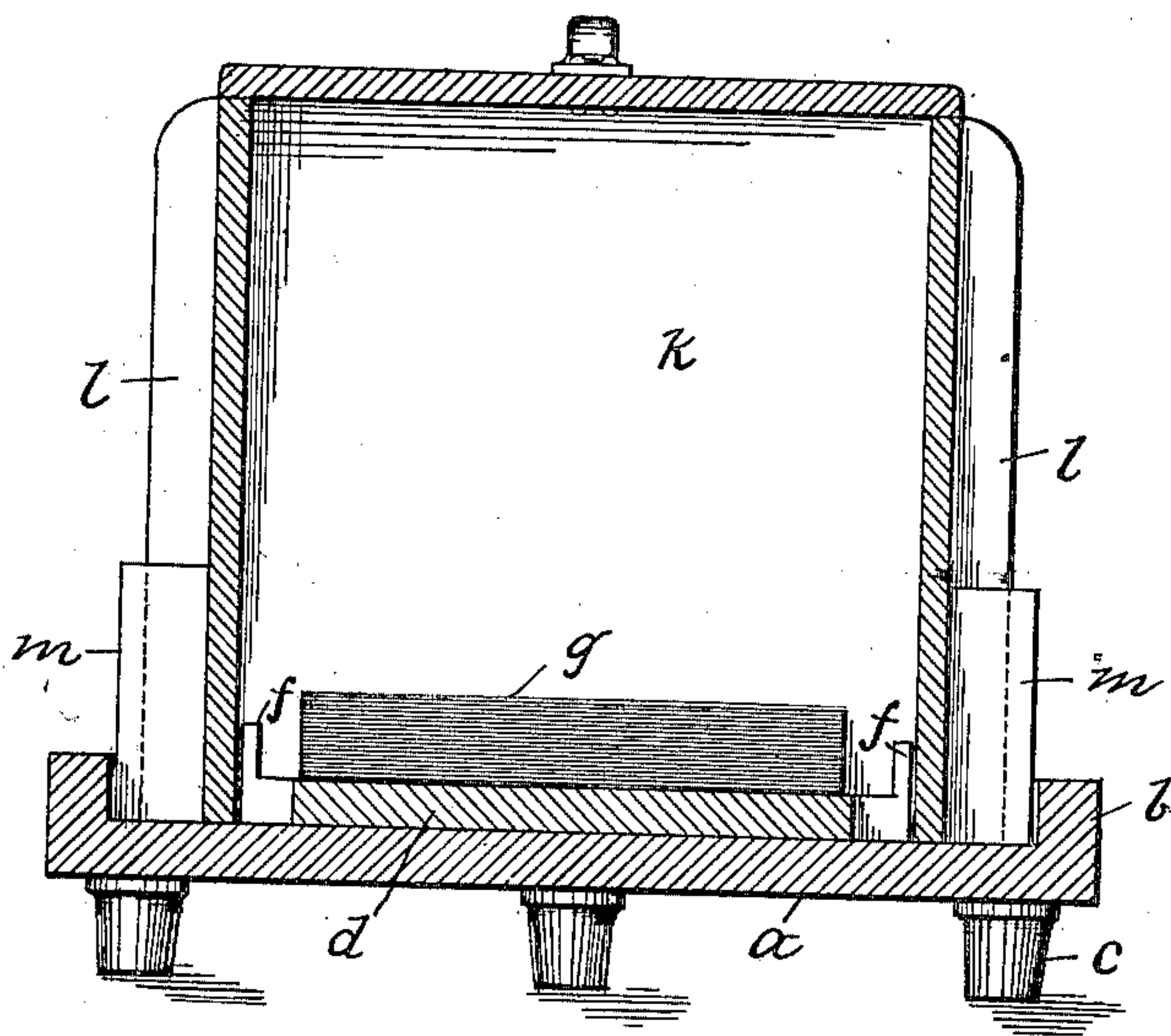


Fig. 3

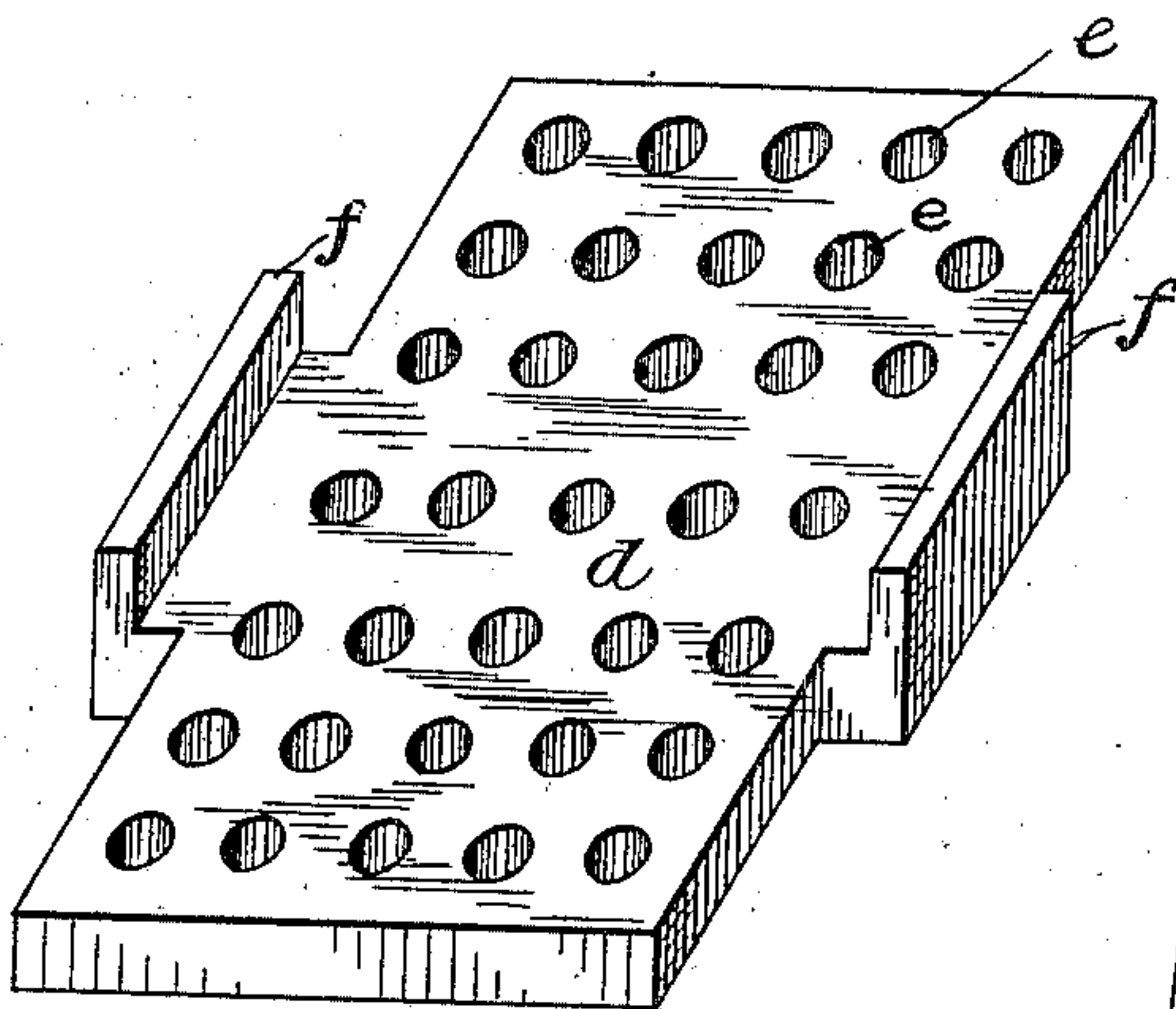


Fig. 4

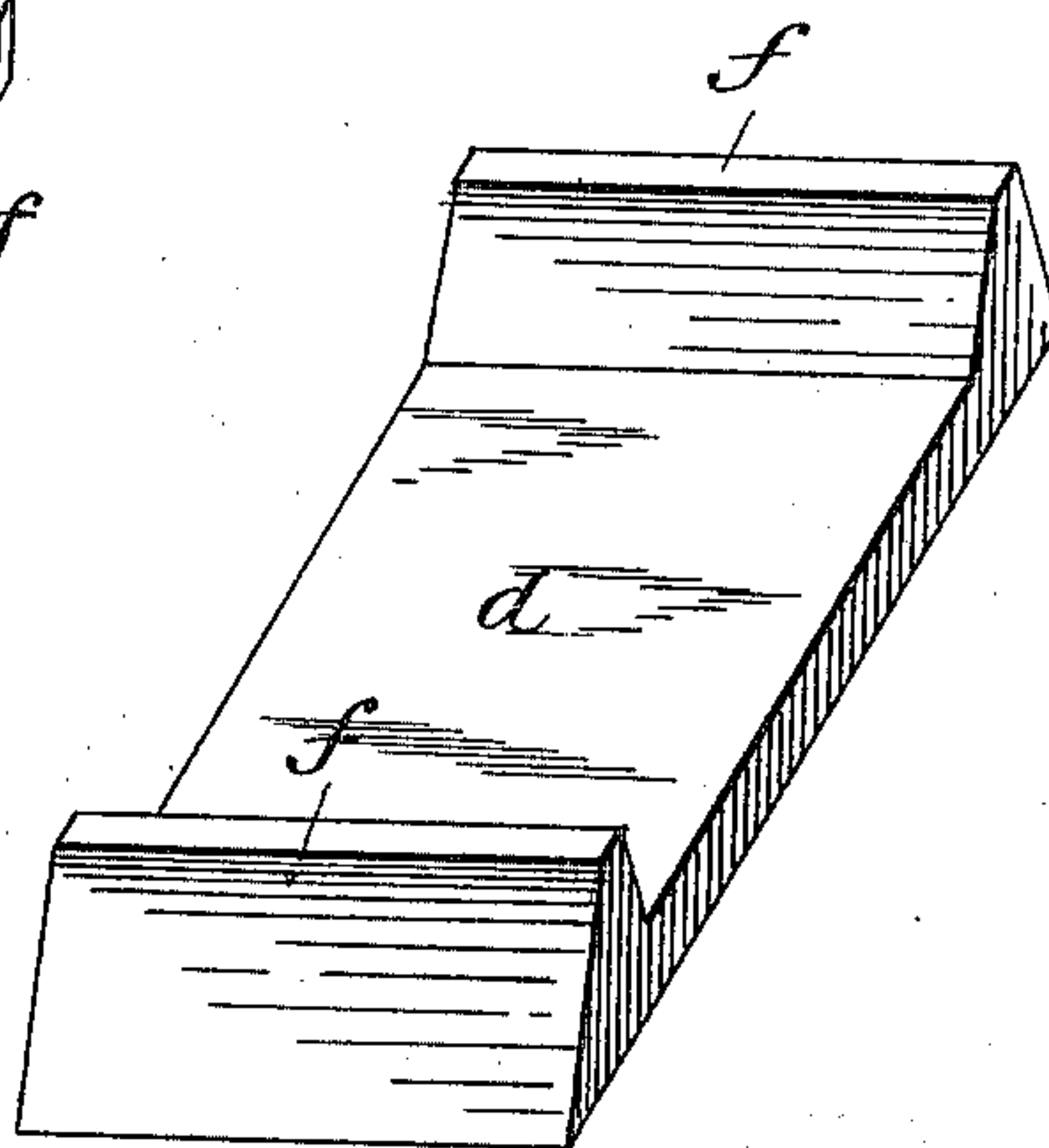


Fig. 5

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UNITED STATES PATENT OFFICE.

WILLIAM EDWIN HARRIS, OF NILES, OHIO.

ANNEALING-BOX.

SPECIFICATION forming part of Letters Patent No. 679,145, dated July 23, 1901.

Application filed July 22, 1898. Renewed June 17, 1901. Serial No. 64,934. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EDWIN HARRIS, a resident of Niles, in the county of Trumbull and State of Ohio, have invented a new and useful Improvement in Annealing-Boxes; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to annealing-boxes.

The form of annealing-box most generally employed in connection with the manufacture of sheet-iron, tin-plate, &c., comprises a base-plate upon which the sheets to be annealed are piled one upon the other and a box-like cover adapted to be lowered onto and rest upon said base-plate so as to inclose the sheets resting thereon. These box-like covers are subjected to the intense heat of the annealing-furnace, and consequently the wear and tear due to expansion and contraction is very severe. The lower portions of the sides of the boxes will warp and collapse, whereby the said boxes lose their shape, and to make them available for use they are sent to the blacksmith-shop, where these warped and collapsed portions are straightened out to correspond to the regular lines of the box. This operation consumes a great deal of time and labor and at the same time tends to weaken the box.

The object of my invention is to provide means for preventing this caving in of the sides of the box and preserve its shape, so that its life is greatly increased and much labor and expense avoided.

My invention comprises, generally stated, a base-plate, a freely-removable brace-block having upwardly-projecting portions, and a box or cover adapted to fit down over said brace-block, the upwardly-projecting portions of said block being in close proximity to the inner walls of the box to prevent the collapsing of same.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved annealing-box. Fig. 2 is a like view with the cover raised. Fig. 3 is a cross-section. Fig. 4 is a perspective view of the brace-

block, and Figs. 5 and 6 show modified forms of brace-blocks.

The letter *a* designates a suitable base-plate, which is provided with the upwardly-extending flange *b* around the edges thereof and with the supporting-feet *c*. Loosely supported on the base-plate *a* is the brace-block *d*, which is provided with the openings *e*, to reduce the weight thereof, and with the projections or flanges *f*, which may be of any suitable length and height and may be formed at the ends as well as sides, as shown in Fig. 6, if it is found desirable.

The sheets of metal *g g* to be annealed are piled upon the block *d* to the proper height, and are supported thereby above the bottom of the box, and, if desired, a second brace-block *d* may be placed on the top thereof, resting on and supported by the projections *f* of the lower block, said second block also having projections *f*, so that a third block may be placed on top thereof in the same manner. The box or cover *k* is then lowered by suitable means onto the base-plate *a*, so that when resting thereon it completely incloses the pile of sheets. When the box or cover *k* is made of wrought-iron or steel and composed of sections welded together along the ribs *l l*, I weld the caps *m* onto said ribs. These caps prevent the separation of the welded halves of the box and hold them securely together. These halves usually come apart at the lower portions thereof, and the caps *m* are shown as applied only to the lower halves of the ribs *l*; but it is obvious that they may be applied to the entire length thereof.

The brace-blocks are of such size that the sides of the box will slip down readily past the projections *f*, so as to rest on the base-plate; but said projections will be in close proximity to the inner walls of the box, so as to resist any tendency on the part of the walls of said box to cave in or collapse, thereby acting to brace and support the walls of the box from within. In this manner the shape of the box is preserved and actual experience has proven that the lives of the boxes are greatly increased. In case the cover does not go down readily or fits the base-plate too snugly a blow on the cap will remove the dif-

difficulty and at the same time will not injure the cover.

Annealing-boxes are usually made of wrought-iron or steel; but by having the
5 brace-blocks freely removable and not connected in any manner to the annealing-box said blocks may be made of cast-iron, thereby making said blocks not only cheaper to manufacture, but more substantial and of
10 greater life than if made of wrought metal. A further object of making the brace-blocks freely removable from the box is that by that construction a brace-block may be placed upon the top of the pile of sheets within the
15 box, as shown, so as to brace the annealing-box at different heights from the bottom. Furthermore, after the sheets have been properly annealed and the box lifted therefrom the latter is then lowered over a brace-block
20 to keep its walls from collapsing or warping during cooling. The same form of block as that above described may be employed; but the modified form shown in Fig. 5 is preferably used for this purpose, said modified
25 form comprising the body portion and the end projections f' , said projections having sloping outer faces, which tend to center the box and at the same time allow it to move upward thereon during its contraction while
30 cooling.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an annealing-box, the combination
35 with the base-plate and a box or cover, of a cast-iron brace-block loosely supported on said base-plate with its ends in close proximity to the inner walls of the box, said brace-

block constituting a support for the articles to be annealed and preventing collapse of the box.

2. In an annealing-box, the combination
40 with the base-plate and a box or cover, of a brace-block loosely supported on said base-plate and having upwardly-extending projections at its edges lying in close proximity
45 to the inner walls of the box, said brace-block serving as a support for the articles to be annealed and preventing collapse of the sides of the box.

3. In an annealing-box, the combination
50 with a suitable base-plate and a box or cover, of a freely-removable brace-block resting thereon and having laterally and upwardly extending projections along its edges lying in
55 close proximity to the inner walls of the box, said brace-block serving as a support for the articles to be annealed and preventing collapse of the sides of the box.

4. In an annealing-box, the combination
60 with a base-plate and a box or cover, of a cast-iron brace-block having apertures extending therethrough, said brace-block being loosely supported on the base-plate with its
65 ends in close proximity to the inner walls of the box and constituting a support for the articles to be annealed and preventing collapse of the box.

In testimony whereof I, the said WILLIAM EDWIN HARRIS, have hereunto set my hand.

WILLIAM EDWIN HARRIS.

Witnesses:

MINNIE MARVIN,
O. L. McCURTY.