

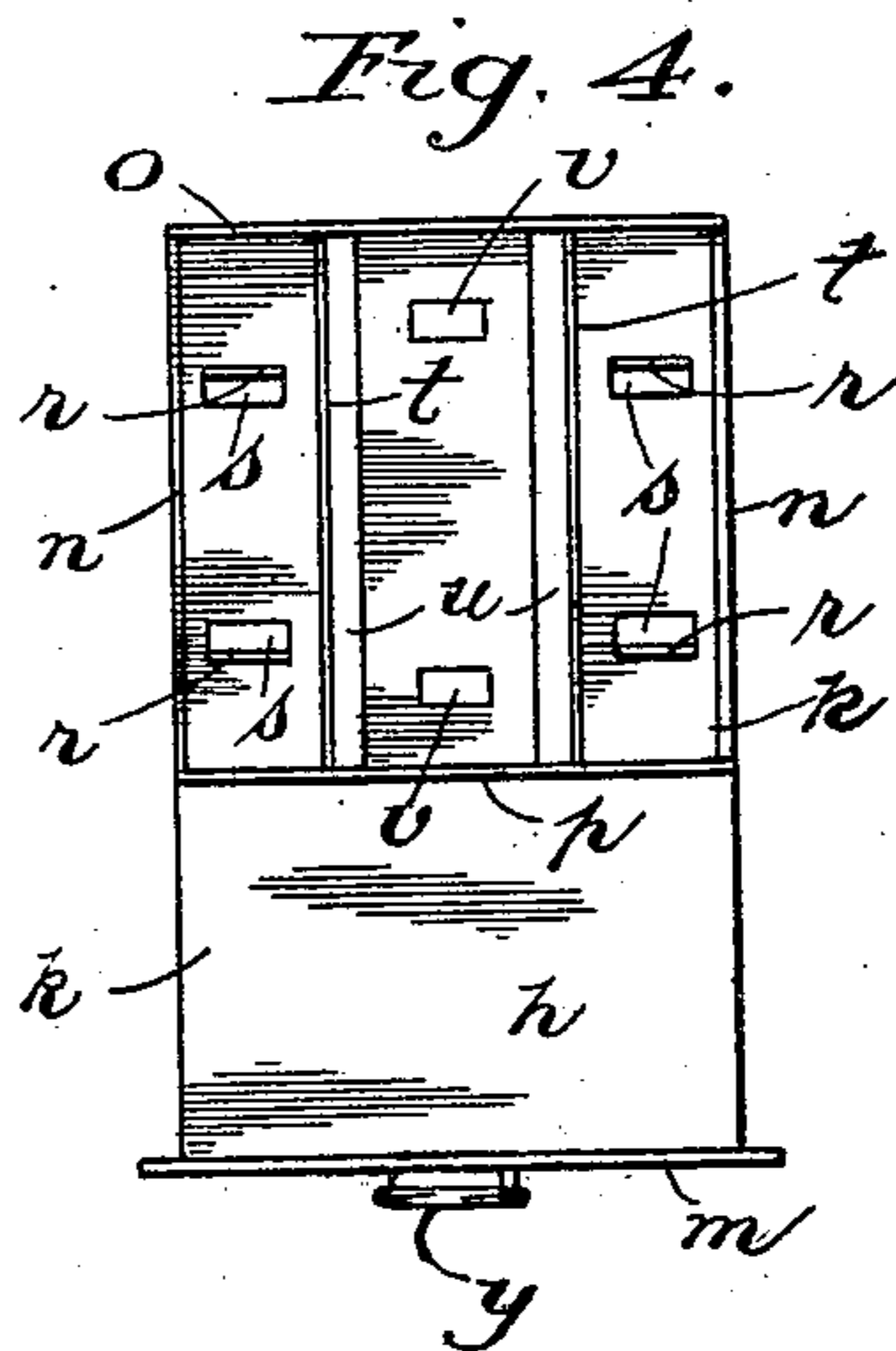
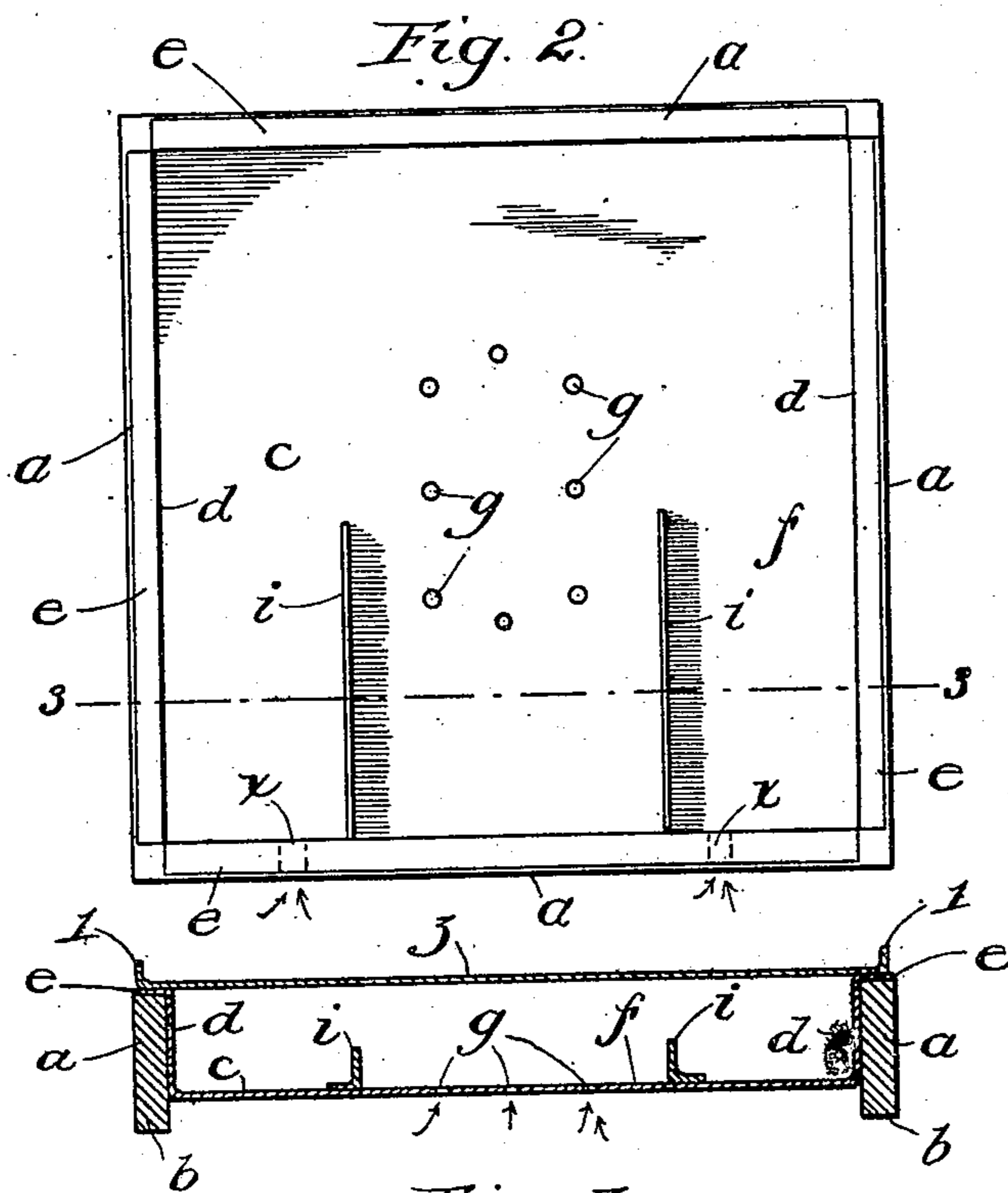
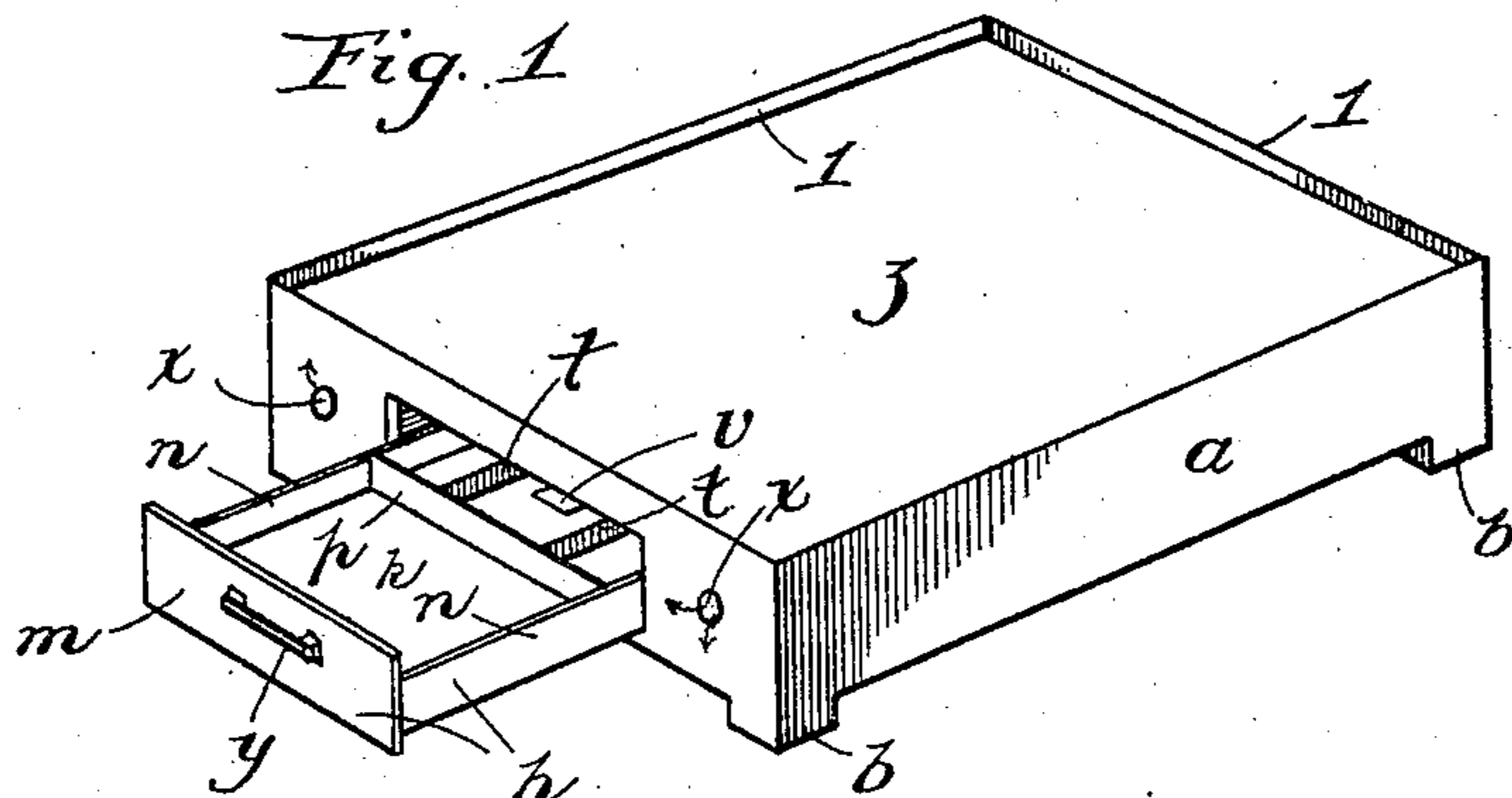
No. 680,487.

Patented Aug. 13, 1901.

J. W. KINNARE.
MORTAR BOARD.

(Application filed Mar. 18, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JOHN W. KINNARE, OF CHICAGO, ILLINOIS.

MORTAR-BOARD.

SPECIFICATION forming part of Letters Patent No. 680,487, dated August 13, 1901.

Application filed March 13, 1901. Serial No. 50,909. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. KINNARE, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Mortar-Boards, of which the following is a specification.

My invention relates to mortar-boards wherein means are provided for keeping the soft mortar more or less heated for preventing the freezing of the same when used in cold weather; and the objects of my invention are, first, to provide a board of light and durable construction and one which may be easily transported, and, second, to provide means whereby fuel may be burned beneath the receiving-surface of the board for heating the mortar thereon.

It is also my object to provide certain details hereinafter set forth.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the board, showing the oven-drawer partially withdrawn. Fig. 2 is a plan view of the device with the top floor and the oven-drawer removed. Fig. 3 is a sectional view of the board, taken in section on the line 3 3 of Fig. 2. Fig. 4 is a top view of the oven-drawer.

Similar letters refer to similar parts throughout the several views.

The framework *a a* of the device is preferably rectangular and constructed of wood and for the purpose of admitting draft from beneath is raised upon the legs or standards *b b*.

The bottom floor *c c* consists of sheet metal bent in the manner shown in Fig. 3, the upright portions *d d* serving to protect the side walls *a a* from the heat within the oven. The horizontal flanges *e e* project over the side walls *a a* of the framework, and thereby support said bottom floor *c* and also serve to further protect said framework. The lower and horizontal portion *f* of the bottom floor has the apertures *g g* for admitting draft into the oven from beneath.

The front wall of the framework is apertured to receive the drawer *h*, and the guides *i i* are secured to said bottom floor *c* in such

a manner as to guide the said drawer and hold the same in position within the oven. Said guides *i i* consist, preferably, of angle-pieces, as shown in Fig. 3, one of the legs of each of said angles being fastened to said bottom floor and the other of said legs standing in an upright position.

The drawer *h*, above mentioned, is constructed of metal and comprises the bottom portion *k*, front wall *m*, side walls *n n*, rear wall *o*, and intermediate wall *p*. Said walls *n*, *o*, and *p* afford means for retaining the fuel in position upon the drawer. The drawer is so proportioned that when in position within the oven the area bounded by the walls *n*, *o*, and *p* occupies a central location within the oven. This is for the purpose of effecting a uniform distribution of heat. The bottom of the drawer *h* is provided with retaining-flanges *r r r r*, which are formed of a portion of the floor turned up into an upright position. These flanges also are for the purpose of retaining fuel in the drawer and are so located that the fuel will occupy positions at the four corners of the inner portion of the drawer. As the flanges *r* are formed from the bottom of the drawer *h*, there remains an aperture *s* in said floor adjacent to each of the said flanges, said apertures affording air-spaces for permitting a draft of air to gain access to the oven-drawer. The flanges *t t* extend longitudinally of the inner and central portion of the drawer *h* and are formed in a similar manner to the flanges *r*, thereby forming the slots *u*. The apertures *v v* are also formed in the central portion of the drawer for affording additional means for draft. Said apertures *r* and *v* are so located in the drawer *h* as to register with the apertures *g* in the bottom floor *c*. The apertures *x x* are formed in the side wall *a* and constitute vents for the escape of the gases of combustion formed within the oven. Said drawer is provided with a handle *y* for operating the same.

The upper floor *z* of the oven consists of sheet metal, preferably galvanized iron, which extends across the framework *a a* and is provided at its limiting edges with the upturned flanges *l l* for preventing the mortar from flowing off the board.

In operation fuel is placed upon the drawer *h* and ignited, and said drawer is inserted into position in the framework, the front wall *m* of the drawer covering the drawer-aperture in the front wall of the said framework. The heat of the burning fuel drives the air and gases of combustion out through the vents *x x* and simultaneously causes outside air to enter through the apertures *g*, *s*, and *v*. This sets up a draft which continues the combustion of the fuel. The burning fuel causes the heating of the top floor or receiving-surface *z*.

By the use of my device mortar may be used in very cold weather without danger of freezing.

The temperature of the top or receiving surface may be regulated by varying the amount of fuel within the oven.

Various kinds of fuel may be employed in connection with my form of mortar-board—as, for example, charcoal or coke—but by preference I employ an artificial fuel consisting of carbonaceous bricks, sometimes called “Clark bricks” or “Lehman bricks.” These bricks after being properly preheated burn slowly and evenly and generate heat for a considerable period of time without attention. By using these combustible bricks the amount of heat may be easily regulated both by varying the number of bricks and the sizes thereof. When using such bricks, I propose ordinarily to place a portion of a brick in each of the four covers of the drawer *h*.

An important advantage in my device as described is that it is of few parts, simply constructed, and serves well without the drawer as a substitute in warm weather for boards of the ordinary construction.

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

1. In a mortar-board, the combination of a wooden rectangular framework; a continuous sheet of metal extending across said framework to form the bottom of a heating-oven, said sheet of metal resting upon the side walls of said framework, thence extending downward along the inner faces of the walls of the framework and across said framework; a second continuous sheet of metal extending substantially straight across said framework and forming both a top to the oven, and a receptacle for mortar, said last-mentioned sheet having flanges turned up along the edges thereof to retain the mortar in position; and a fuel-drawer sliding upon the first-mentioned sheet, for heating said upper sheet of metal.

2. In a mortar-board, the combination of a wooden rectangular framework raised upon legs or standards; a sheet-metal bottom floor extending across said framework near the bottom thereof, and having side portions protecting the inner surfaces of said wooden framework said bottom floor also having laterally-projecting flanges resting upon the upper edges of said framework and perforations in the bottom floor for admitting air within said framework; a fuel-drawer sliding within guides upon said bottom floor; said drawer having apertures in the bottom thereof for admitting air thereinto; and a top floor extending across said frame for receiving the mortar.

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