

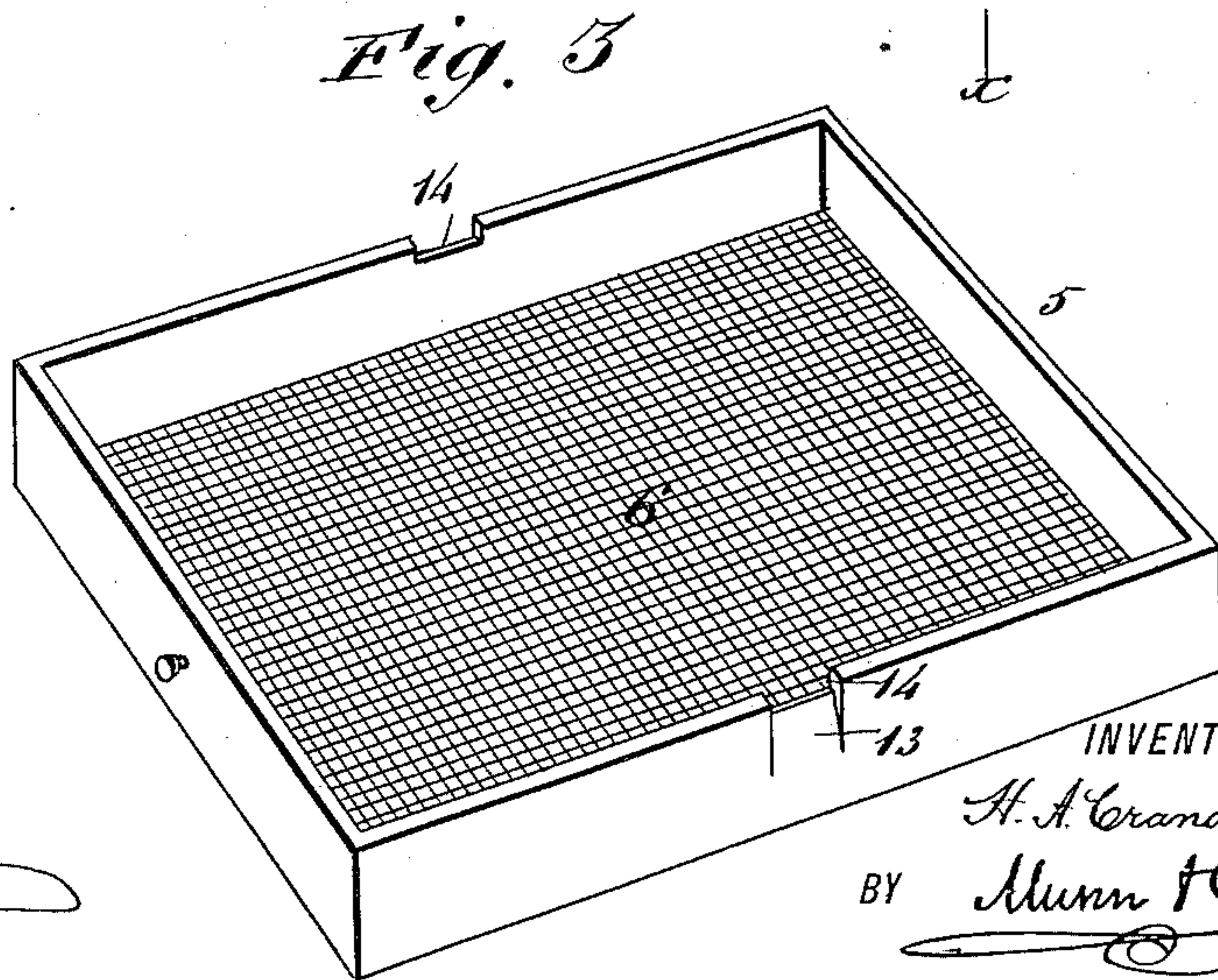
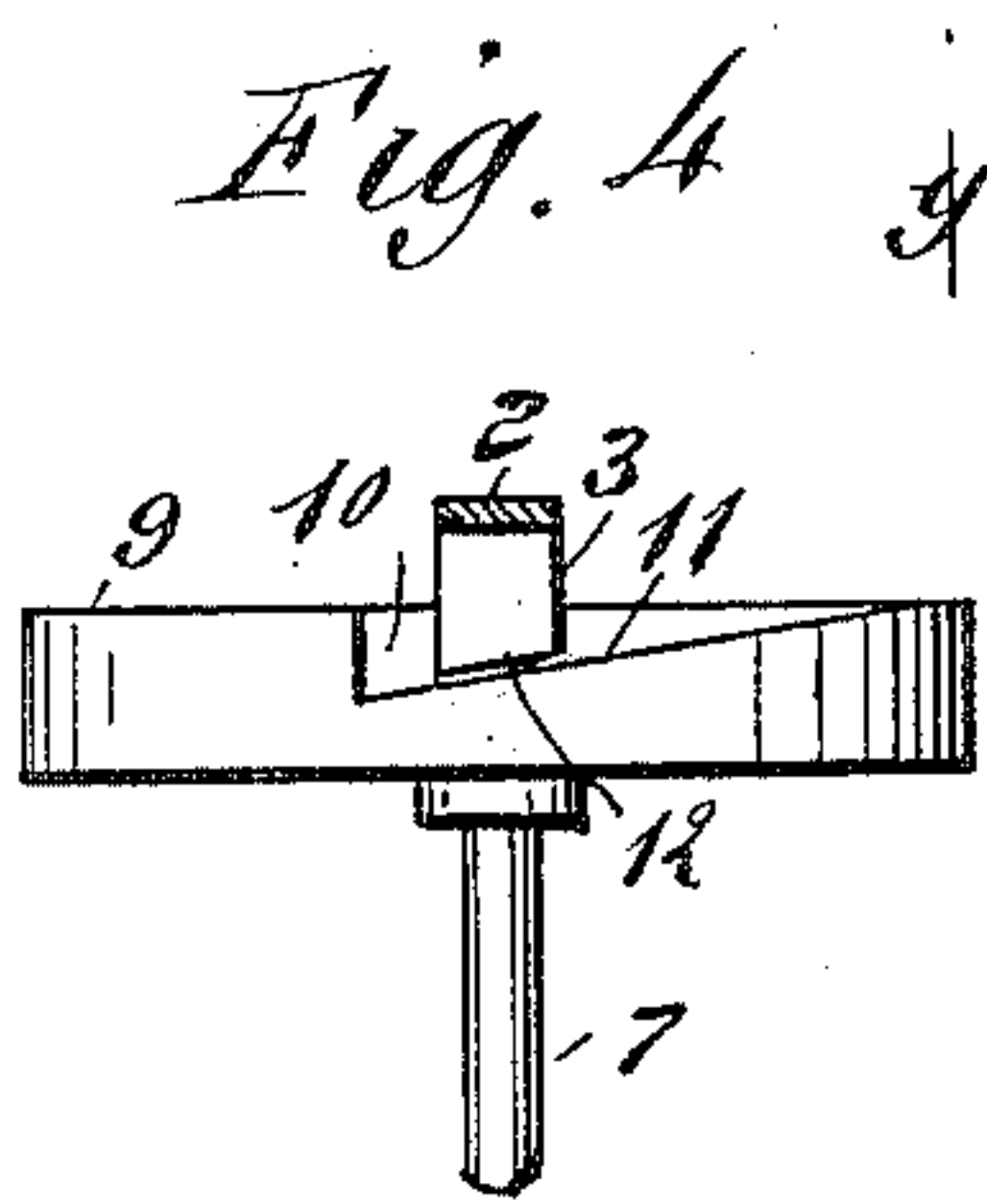
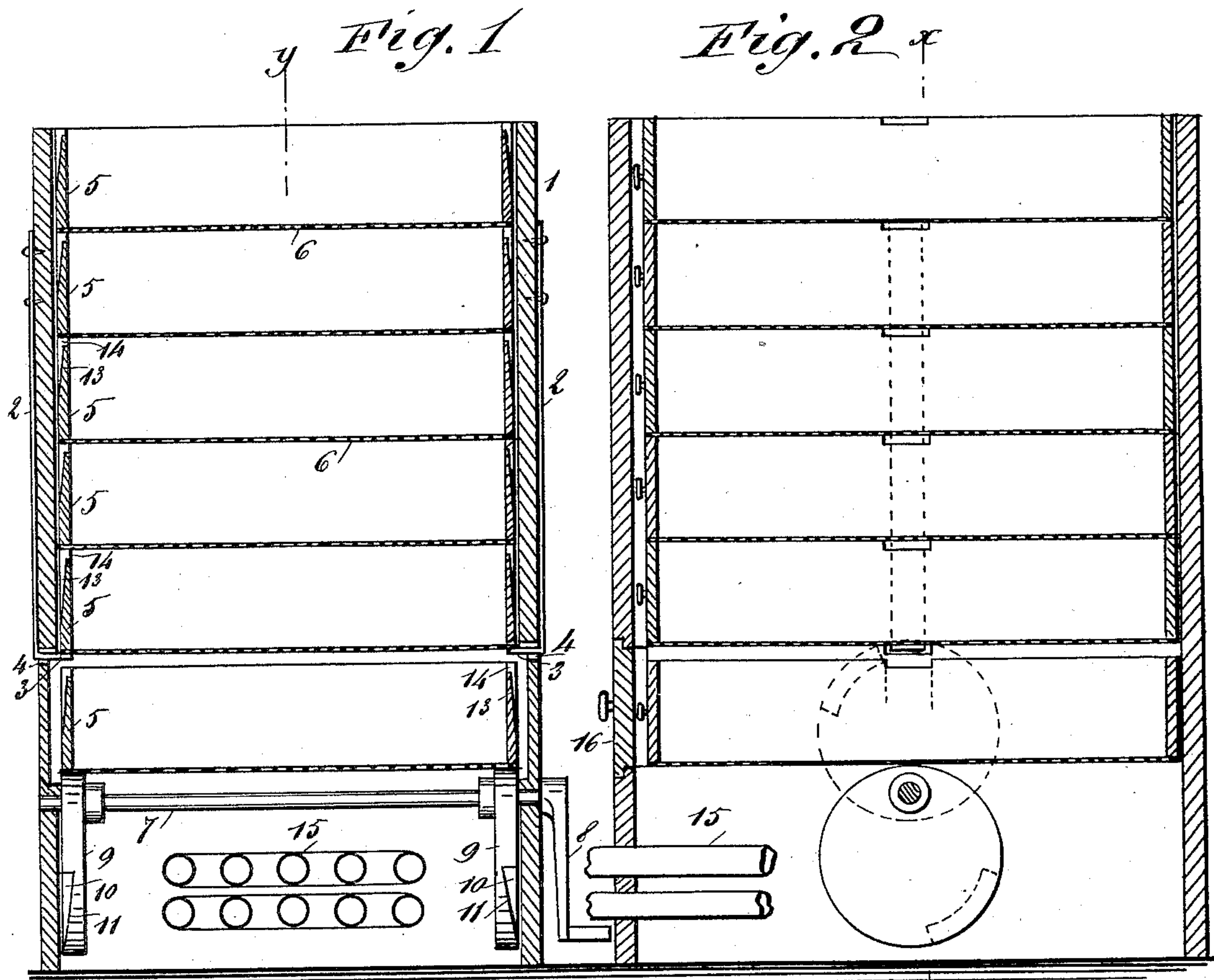
(No Model.)

H. A. CRANDELL.

FRUIT DRIER.

No. 398,584.

Patented Feb. 26, 1889.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY A. CRANDELL, OF HARRISON, ARKANSAS.

## FRUIT-DRIER.

SPECIFICATION forming part of Letters Patent No. 398,584, dated February 26, 1889.

Application filed April 13, 1888. Serial No. 270,528. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY A. CRANDELL, of Harrison, in the county of Boone and State of Arkansas, have invented a new and Improved Fruit-Drier, of which the following is a full, clear, and exact description.

The invention will be set forth in the following description and claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 illustrates in vertical section, taken on the line *x x*, Fig. 2, a fruit-drier constructed in accordance with my invention. Fig. 2 is a view thereof in vertical section, taken on the line *y y*, Fig. 1. Fig. 3 is a perspective view of one of the drying-trays removed, and Fig. 4 is a detail view showing a portion of one of the spring-supports and operating-cams.

In the construction of this invention a drying-chamber, 1, has secured to its sides supports formed of spring-strips 2, each having a bent end, 3, which projects through a slot, 4, in the side of the drying-chamber 1.

Upon the bent ends 3, projecting into the drying-chamber 1, are supported a column of trays, 5, constructed with an open-work bottom, 6, of netting or other suitable material. At a distance below the bent ends 3 a little more than the depth of a single tray is located a mechanism for lifting the column of trays and releasing and lowering the bottom tray resting on the bent ends 3, which is constructed as follows:

Upon a shaft, 7, having its bearings in the sides of the chamber 1 and operated by a crank-handle, 8, outside of the latter, are mounted cams or eccentric disks 9 adjacent to the inner walls of the chamber 1, and formed with a recess, 10, having a beveled or tapered vertical side, 11, which bears against and moves over the bevel or taper 12 on the end of the bent ends 3, as shown in Fig. 4, when the shaft and its eccentrics 9 are operated. The trays 5 are formed with inclines 13 in their sides opposite the bent ends 3, which terminate in slots 14, whereby the bent ends 3, after they have been released from the eccentrics 9, may be permitted to gradually return to their normal position and be located beneath the tray

next to the bottom tray before the latter is withdrawn by the action of the eccentrics from supporting it. The pipes through which the hot air is admitted to the drying-chamber are indicated by 15. The released bottom tray is removed through an opening in the side of the chamber covered by a door, 16.

The operation of the device is as follows: A column of trays, 5, containing fruit, resting upon one another and supported by the bent ends 3 projecting beneath the bottom tray, are subjected to the heat ascending in drying-chamber 1 from the hot-air pipes 15. In practice a filled tray is lowered by hand into the chamber down through the top opening until it rests on the supports, and the next tray is lowered until it rests on the first tray, and so on. If desired, however, all of the trays so lowered may be empty save the top one, and the empty trays may be replaced by inserting filled trays as fast as the empty ones are withdrawn. The operator may suit his own convenience or judgment, however, in this matter. The bottom tray, containing fruit from which the moisture has become evaporated, resting upon the bent ends 3, is released therefrom and removed by rotating the shaft 7, which causes the eccentrics 9 to bear against the bottom tray and raise it up from the bent ends 3 with the column of trays 5 above it. At the same time the recess 10 in eccentrics 9 is brought opposite the bent ends 3 of spring-arms 2, and the bevel 11, bearing against the bevel end 12 of bent ends 3, causes them to be pushed back and held outward until the bottom tray has been partly lowered past them, when the bent ends 3 escape from the recess 10, are released from the eccentrics 9, bear against the sides of the bottom tray, and as the tapered portions 13 thereof move over them in the descent of the tray are permitted to advance inward until they escape through the slots 14 and are located beneath the next bottom tray, which, as the released tray supporting it moves downward, is lowered onto the bent ends 3. When the bottom tray has been released from the bent ends 3, as shown in Fig. 1, the door 16 is opened and the tray removed, and a tray with green fruit passed into chamber 1 through any suitable opening at its top and placed on the top of



the column of trays. By means of this apparatus vegetables, malt, &c., may be dried as well as fruit.

It will be seen that by introducing the green fruit at the top of the drying-chamber, lowering the trays, and removing the bottom tray the evaporation is effectively accomplished without detriment to any portion of the fruit in the drying-chamber. The construction and arrangement of the parts are such that the bottom tray may be easily released and lowered.

I do not intend to confine myself to the precise construction of parts herein set forth, as they may be varied without departing from the essential features of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fruit-drying apparatus, a drying-chamber, movable supports on which the trays rest projecting into the chamber, and a rotary shaft with eccentric-disks which engage and move back the supports and release and lower therefrom one tray at a time, substantially as described.

2. In a fruit-drying apparatus, a drying-chamber, a series of trays located therein, spring-actuated movable supports extending into the chamber and supporting the trays, and a rotary shaft having eccentric-disks which engage the spring-actuated supports, release them from the trays, and lower a tray out of engagement with the supports, substantially as described.

3. A fruit-drying apparatus consisting of the drying-chamber 1, having spring-strips 2, with bent ends 3, having tapered edge 12, and projecting through openings 4 into chamber 1, the trays 5, with inclines 13 and slots 14 in line with bent ends 3, resting upon one another and supported by bent ends 3, and the eccentric-disks 9, mounted on shaft 7, with crank-handle 8, and having the recess 10, with tapered side 11, all constructed and arranged substantially as described.

4. In a fruit-drying apparatus, a drying-chamber, 1, having openings 4, spring-strips 2, with bent ends 3, having bevel-edge 12, and projecting through openings 4, and the shaft 7, with crank-handle 8, and eccentric-disks 9, with recess 10, having tapered sides 11, substantially as described.

5. In a fruit-drying apparatus, the combination, with the drying-chamber 1, having a feed-opening at its top and a tray-exit in its side, and tray-supports projecting into said chamber, of revoluble eccentrics mounted in the casing below the exit-opening and supports and having the inclined recesses 10, the side walls of which engage the said supports and force them outward, substantially as set forth.

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Witnesses:

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