

(No Model.)

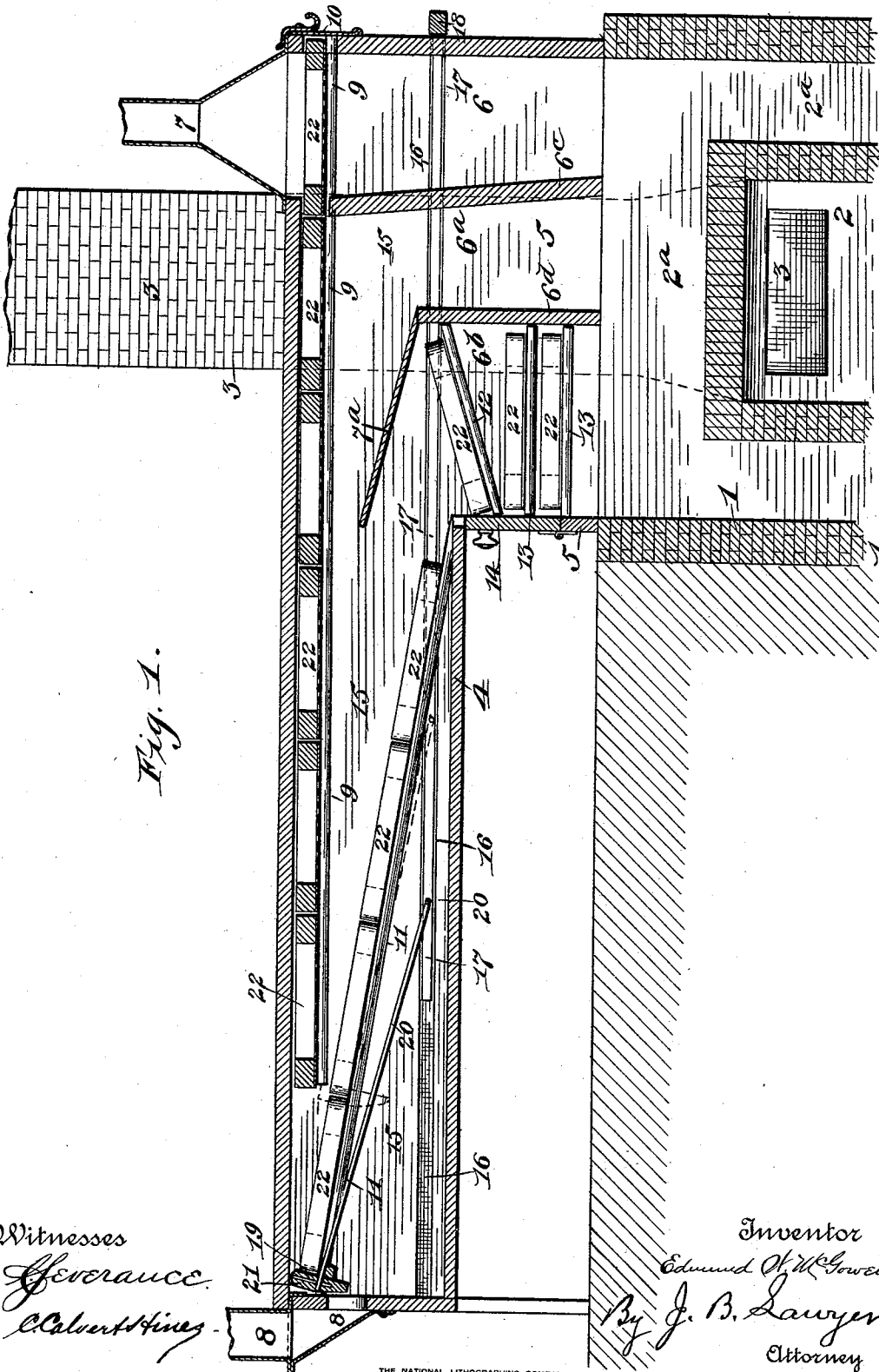
2 Sheets—Sheet 1.

E. W. McGOWEN.

APPARATUS FOR EVAPORATING FRUIT.

No. 508,040.

Patented Nov. 7, 1893.



(No Model.)

2 Sheets—Sheet 2.

E. W. MCGOWEN.

APPARATUS FOR EVAPORATING FRUIT.

No. 508,040.

Patented Nov. 7, 1893.

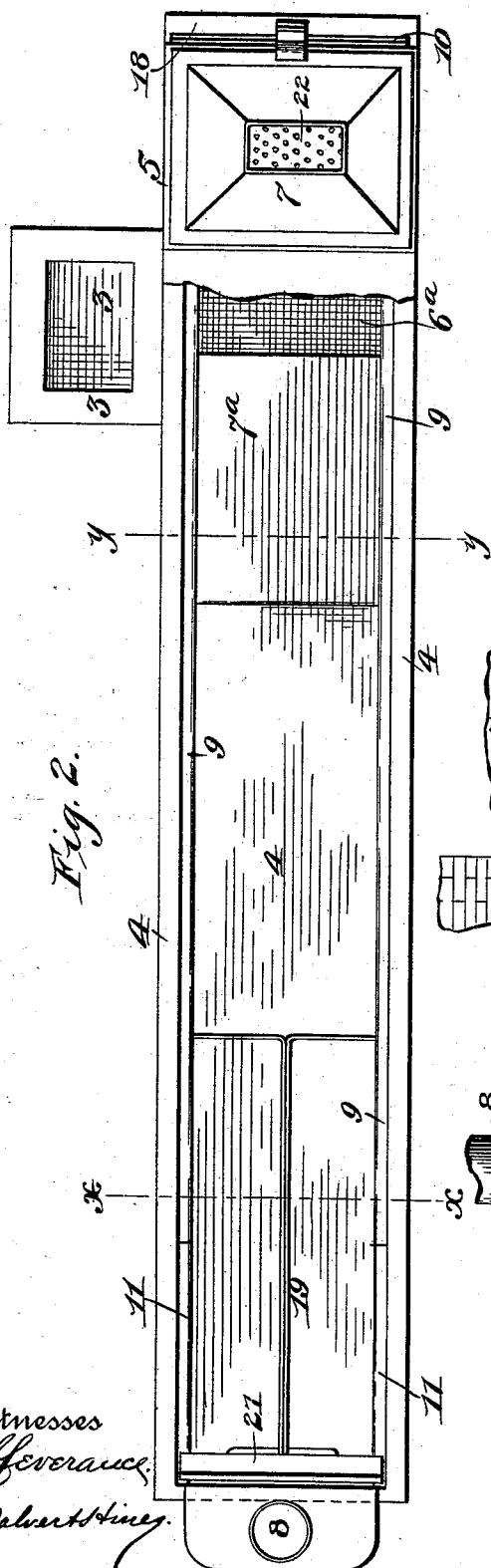


Fig. 3.

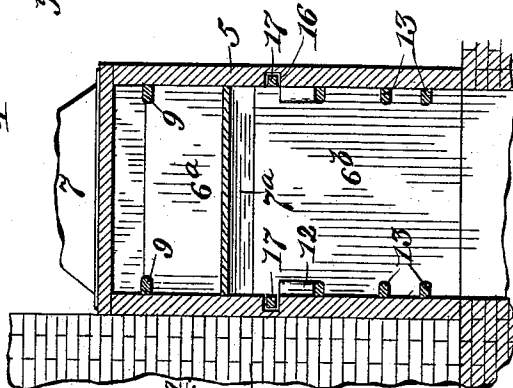
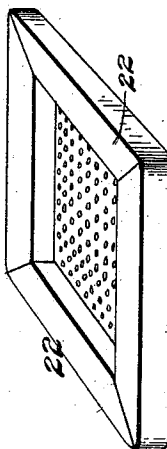


Fig. 4.

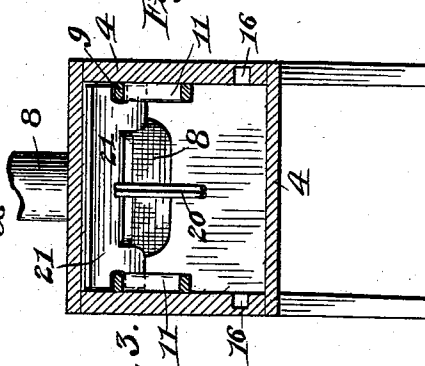


Fig. 5.

Witnesses
J. C. Overance,
C. C. Wentworth.

Inventor
Edmund W. McGowen
By J. B. Sawyer
Attorney

UNITED STATES PATENT OFFICE.

EDMUND W. MCGOWEN, OF BENTONVILLE, ARKANSAS.

APPARATUS FOR EVAPORATING FRUIT.

SPECIFICATION forming part of Letters Patent No. 508,040, dated November 7, 1893.

Application filed October 10, 1892. Serial No. 448,419. (No model.)

To all whom it may concern:

Be it known that I, EDMUND W. MCGOWEN, a citizen of the United States, residing at Bentonville, in the county of Benton and State of Arkansas, have invented certain new and useful Improvements in Apparatus for Evaporating Fruit; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to certain improvements in fruit driers, and it consists in the construction, arrangement and combination of the several parts of which it is composed, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings in which corresponding parts are designated by similar numerals:—Figure 1, is a longitudinal, central vertical section of my invention. Fig. 2, is a plan view thereof with a portion of the top removed. Figs. 3 and 4, are transverse vertical sections on lines *x—x*, and *y—y*, respectively of Fig. 2. Fig. 5, is a detail view of one of the evaporating pans.

The brick structure 1, has contained therein a fire chamber 2, and an air heating chamber 2^a, surrounding the fire chamber, which latter is provided with a suitable smoke flue 3, while the top of the heating chamber is uncovered. The rectangular elongated evaporating box 4, has upon its rear end a vertical chamber 5, which rests upon the top of the structure 1, and communicates with the interior of the box and the heating chamber. The interior of the said vertical chamber is divided into three compartments, a rearward compartment, 6, an intermediate 6^a, and a forward compartment 6^b by the two vertical transverse partitions 6^c and 6^d the former of which is near the rear end of the leg and extends as near to the top of the box as will leave room for the passage of an evaporating pan between its top, and the top of the box. The rearward compartment 6, formed by this partition and the rear of the box and vertical chamber, thus extends from the bottom of the latter, to the top of the former, at which

point the said compartment merges into the steam escape pipe 7, the distance of the top of the partition 6^c from the rear of the box being equal to the length of the evaporating pans. The forward partition 6^d separating the compartments 6^a and 6^b extends to about the level of the floor of the box, and has a deflecting plate 7^a projecting forwardly and upwardly from its upper end, and it will thus be seen that the heated currents of air arising from the two compartments 6^a and 6^b, will be deflected forwardly along the box, where they will escape, together with the steam from the dried fruit, through the pipe 8, inserted in the upper forward end of the box. A flange or tongue 9, is inserted in the inside of each side of the box, extending rearwardly from opposite the door 10, in the upper portion of the rear of the box to near the forward end of the box, the flanges terminating a sufficient distance therefrom to permit the pans when pushed off their forward ends to fall on the inclined way or track formed by the flanges 11, which are similar to the flanges 9, and which extend from below the forward end of the said flanges rearwardly and downwardly to above the forward wall of the vertical chamber 5, forwardly and downwardly inclined flanges 12, being inserted in the compartment 6^b below the ends of the said flanges 11, while if desired other flanges, such as 13, may be placed below the flanges 12, access being had to the said flanges 12, and 13, through a door 14, in the front of the vertical chamber. The side walls 15, of the box, have grooves, 16, in their inner sides, near their lower edges, in which grooves, rods 17, are contained, the rear ends of the rods projecting through the rear end of the box, and being connected by a handle bar 18. An inclined frame 19, contained within the box, has the lower ends of its legs 20, secured to the forward end of the rods, while its central portion carries on its upper end a cross head 21, which normally rests against the front of the bar, and is level with the top of the flanges 9.

The evaporating pans 22, may be of any approved construction, but are by preference made square, with rounded corners as shown.

A fire having been started in the fire chamber, evaporating pans carrying the fruit to

be dried are placed upon rear ends of the flanges 9, one by one, through the door 10. Thus each pan on being placed within the drier is in the top of the compartment 6, the frame 23, of the pan, closing the space between the top of the partition 6^c and the top of the box, and thus preventing the escape of heat from the compartment. After the greater proportion of the moisture has been driven from the fruit in this compartment, a second pan of fruit is placed upon the flanges and shoved forward, thus displacing the first pan which will be successively pushed forward along the flanges until it falls off the forward end thereof, upon the inclined flanges 11, down which it is forced a distance equal to its own length, by a rearward movement of the handle bar 18, and thus of the crosshead 21, which are immediately returned to their normal condition, and serve to cause a corresponding movement of the succeeding pans, thus forcing the pans after passing through the box, along the tracks 9, and 11, where their contents will be dried by the heated air arising from the compartments 6^a and 6^b off the lower ends of the inclined flanges 11, from which they will fall upon the flanges 12, in the compartment 6^b from which they are removed through the door 14. If when so removed the fruit is found to be too moist, it may be further dried by placing the pans containing it, on the flanges 13 in the compartment 6^b.

From the above it will be seen that the pans containing the fruit are shoved forwardly through the evaporating box by the insertion of fresh pans, and have their reverse motion effected by an externally actuated crosshead.

Having thus described my invention, what I claim is—

1. The combination in an evaporator of a suitable box having a vertical chamber upon its rear end, divided into a series of compartments by vertical partitions, the forward partition having a forwardly inclined upper end of horizontal flanges within the said box, inclined flanges also within the said box and projecting forwardly beyond the ends of the horizontal flanges, flanges contained in the forward compartment of the vertical chamber, a fire chamber contained in the vertical chamber, a crosshead contained in the said box at a level with the horizontal flanges and sliding rods contained in grooves in the sides of the box and connected with the said crosshead, substantially as described.

2. The combination in an evaporator, of a

source of heat, a box in connection therewith, horizontal feeding flanges extending from the rear of the said box forwardly therein, inclined return flanges extending forwardly within the said box to beyond the forward ends of the said horizontal flanges, a crosshead located in front of the forward ends of the said inclined flanges, and a handle for the said crosshead extending rearwardly to the rear of the box whereby the said crosshead may be moved rearwardly, substantially as described.

3. The combination in an evaporator, of a box, having a vertical chamber below the rear end thereof, a source of heat connected with the said vertical chamber, horizontal feeding flanges extending from the rear of the said box forwardly therein, inclined return flanges extending forwardly within the said box to beyond the forward ends of the said horizontal flanges, a crosshead located in front of the forward ends of the said inclined flanges, a handle for the said crosshead extending rearwardly to the rear of the box whereby the said crosshead may be moved rearwardly, and inclined flanges contained in the front of the said vertical chamber and beneath the first named inclined flanges, substantially as described.

4. The combination in an evaporator, of a box, having a vertical chamber below the rear end thereof, partitions dividing the said chamber into three compartments, the most rearwardly of the said partitions arising to near the top of the said box, an escape flue on the rear end of the said box a source of heat communicating with the base of all of the said compartments, horizontal feeding flanges extending from the rear of the said box forwardly therein, inclined return flanges extending forwardly within the said box to beyond and below the forward ends of the said horizontal flanges, a crosshead located in front of the forward ends of the said inclined flanges, a handle for the said crosshead extending rearwardly to the rear of the box, whereby the said crosshead may be moved rearwardly, and inclined flanges contained in the forward compartment of the said vertical chamber and below the first named inclined flanges, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDMUND W. MCGOWEN.

Witnesses:

A. H. FOSTER,
P. P. CURTIS.