2 Sheets—Sheet 1.

B. J. TAYMAN.

Apparatus for Drying Fruit, Smoking Meats, &c.

No. 197,297. Patented Nov. 20, 1877.

FIG. 1

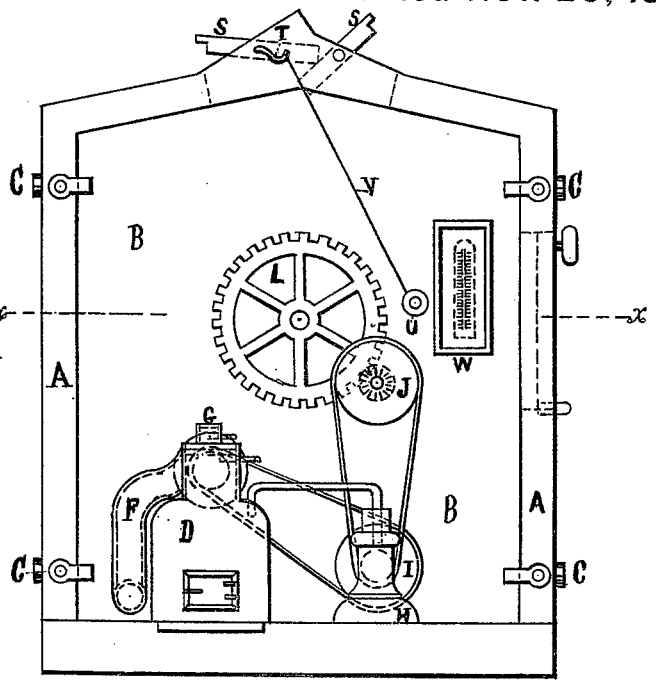
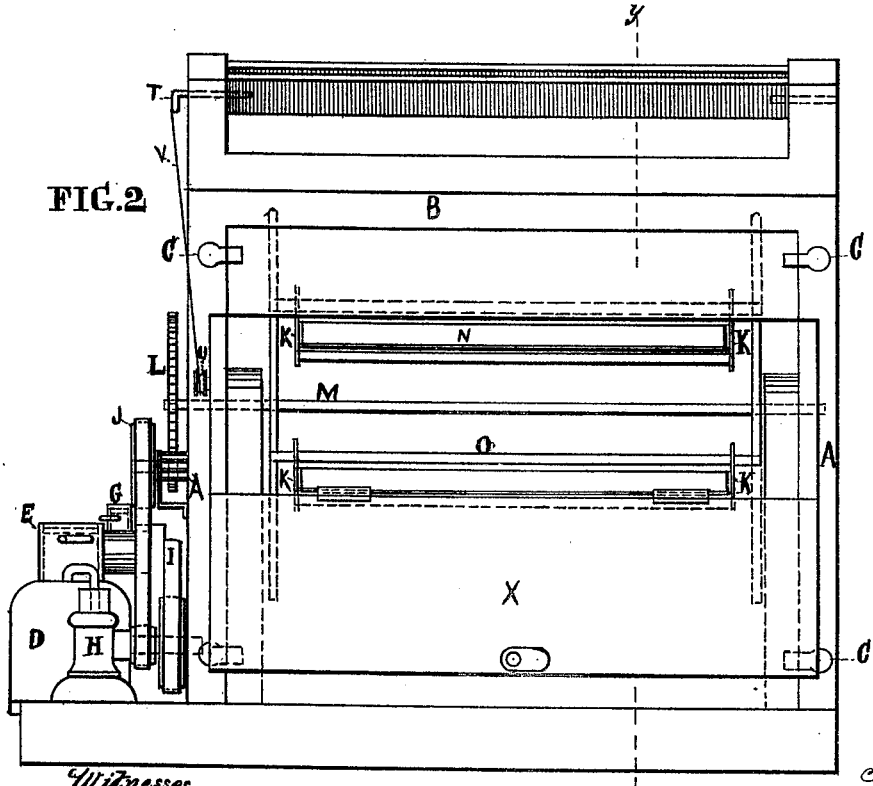


FIG. 2



Witnesses
Frank S. Layman
Stephen Rustick

Inventor
Benjamin J. Tayman

2 Sheets—Sheet 2.

B. J. TAYMAN.

Apparatus for Drying Fruit, Smoking Meats, &c.

No. 197,297. Patented Nov. 20, 1877.

FIG. 3

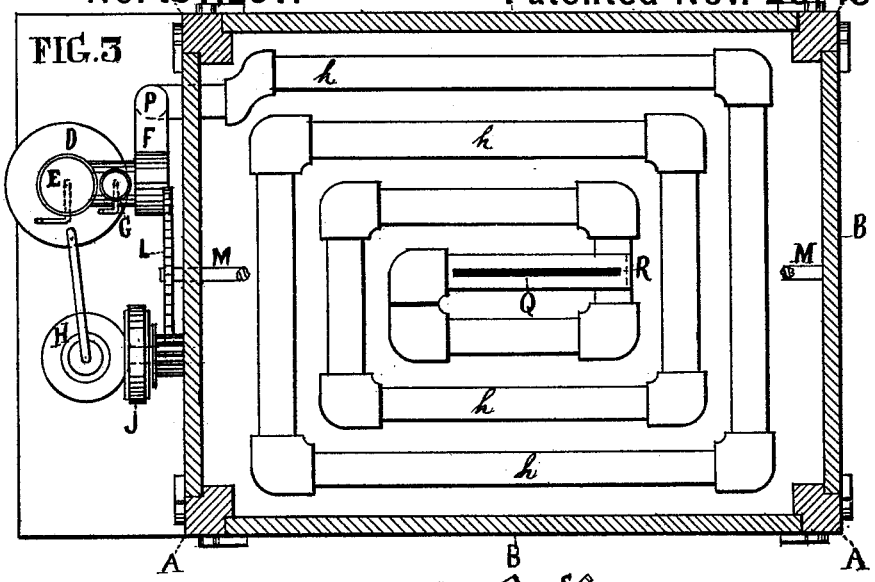


FIG. 4

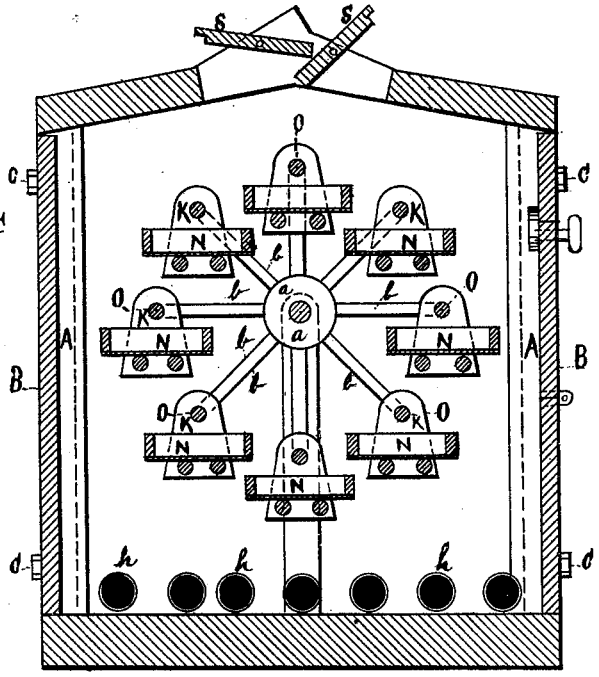
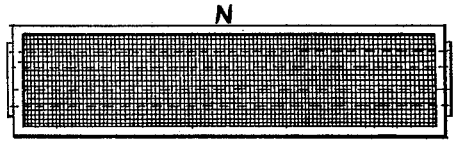


FIG. 5



Witnesses
Frank S. Layman
Stephen Ustick.

Inventor
Benjamin J Layman

UNITED STATES PATENT OFFICE.

BENJAMIN J. TAYMAN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN APPARATUS FOR DRYING FRUIT, SMOKING MEAT, &c.

Specification forming part of Letters Patent No. **197,297**, dated November 20, 1877; application filed September 18, 1877.

To all whom it may concern:

Be it known that I, BENJAMIN J. TAYMAN, of Philadelphia, Pennsylvania, have invented certain Improvements in Apparatus for Drying Fruits, Vegetables, Sheep or Goat Skins, also, for smoking hams or other articles that require to hang in a vertical position while undergoing the process of drying or smoking, of which the following is a specification:

These improvements consist of the employment of a series of stirrups, suspended from the arms of a revolving frame, for holding or suspending the articles to be acted upon, in connection with a coil of pipe for cold or hot air, the last section of this pipe having a slot or opening cut through its upper side and the end closed, so that the air or smoke will be forced up through the slot and distributed against the article to be dried while the machine is in motion; and an exhaust-fan, provided with a supplemental pipe and valve for the introduction of air or smoke; also, a ventilator, arranged to allow the rapid escape of the vapor.

Figure 1 is a front elevation of my improved drying-machine; Fig. 2, a side elevation of the same, with the door X open to show the arrangement of the trays N; Fig. 3, a longitudinal sectional view taken at the line X X of Fig. 1, with the shaft M and its arms removed, showing the entire arrangement of the hot-air pipes *h;* Fig. 4, a cross-section taken at the line Y Y of Fig. 2, showing the arrangement of the shaft and revolving arms O, with the stirrups K and trays N attached. Fig. 5 is a top view of one of the trays.

A is the frame-work for supporting the machine, to which is attached the weather-boarding B, made in panels, and secured to the frame by buttons C, so that it can be made portable. D, Figs. 1, 2, and 3, is the boiler; E, the smoke-stack, with the damper attached; F, the exhaust-fan, connected with the smoke-stack; G, the cold-air pipe and valve; H, the steam-engine; I, the driving-pulley; J, the pulley and pinion gearing in the cog-wheel L, attached to the main shaft M of the revolving arms O. The spokes *b* may be made of gas-pipe, screwed into the hub A, and are connected at the outer end by the arms O, which may also be made of gas-pipe, joined to the spokes by the fittings used in uniting gas-pipe.

For drying fruits or vegetables, the stirrups K and trays H are suspended from the arms O.

When meats are to be dried or smoked, the trays N will be removed and the meat hung by S-shaped hooks on the rods of stirrups K.

h, Fig. 3, is the hot-air pipe, connected at P with the fan F; Q, the slotted opening in the last section of the pipe, the end of this pipe, at R, being closed, so that the air is forced up and distributed through the trays and escapes through the ventilator S, Figs. 1, 2, and 4. This ventilator is hung on pins, leaving the lower edge the heaviest, so that when the lever T is relieved by the reel U, connecting the lever T with the cord V, the ventilator is closed or opened, as desired. The lever, acting on one wing of the ventilator, presses on the edge of the other, forces it open, or allows it to close by turning the reel U. When closed it forms the peak of the roof.

Operation of the machine: When fruit or vegetables are to be dried, the door X is opened, the trays N removed from the stirrups K and filled with the article to be dried, and placed on the machine. The operator will close the damper E in the smoke-stack. The valve in the cold-air pipe G will be opened gradually after the engine is in motion. The air is forced through the pipes until it reaches the slot Q in the last section, and forced up under the trays as they revolve, and, finally, escapes through the ventilator S.

This ventilator extends the entire length of the building, and offers no obstruction to the escape of the vapor, which should be expelled rapidly after it becomes damp. The expulsion is greatly assisted by the current of hot air passing through the opening Q in the last section of pipe, thus having a continuous current of fresh hot air passing through the article to be dried, and thence out of the building. When the desired temperature is attained (the thermometer W will indicate what degree is necessary) the workman can regulate his hot and cold air valves accordingly, and no necessity exists for stopping the machine to load or

unload, as an extra set of trays can be kept always full to put in when those already in are dried and ready for removal, the machine revolving so slowly that the trays can be exchanged without stopping.

By this mode of operation and the control the operator has over the heat, the article must be evenly dried and left free from dust or stain.

When hams or other meats are to be smoked, the trays N are removed and hooks placed on the rods of stirrups K to hang the meat on. Coal fire being of no use in smoking meat, the damper of the smoke-stack E is thrown wide open, the communication with the furnace or boiler being cut off, and an ordinary wood stove or furnace can be placed near the boiler, and the pipe connected with the cold-air pipe G. The engine being put in motion, the fan will draw the smoke from the stove or furnace, instead of from the fire under the boiler, and distribute it through the pipes and out of the slotted end of the last section, as in the drying of fruit, &c., the motion of the machine causing the meat at all times to be in a vertical position, as the trays, and subject to the same regulations in regard to the temperature to suit the necessities of the article to be operated upon.

I do not wish to be restricted to the use of steam-power, as any motive-power can be employed to drive the fan and give the required motion to the machine, a stove or furnace being substituted for the steam-boiler.

I claim as my invention—

1. The coil of pipe *h* for air or smoke, provided with the slot or opening Q in its last section, the end thereof being closed, in combination with the exhaust-fan F, having the supplemental pipe and valve G, in the manner and for the purposes described.

2. The revolving frame O, with the swinging stirrups, in combination with the coil of pipe for air or smoke, having its last section slotted and the end closed, and an exhaust-fan provided with a supplemental pipe and valve, arranged substantially as described, and for the purposes set forth.

3. The ventilator S, in combination with the revolving frame O, the coil of pipe, and the exhaust-fan with its supplemental pipe and valve, all arranged in the manner and for the purposes set forth.

BENJAMIN J. TAYMAN.

Witnesses:

FRANK S. TAYMAN,

STEPHEN USTICK.