D. C. LYALL.

MANUFACTURE OF TOBACCO.

No. 191,870. Patented June 12, 1877.

Fig. 1.

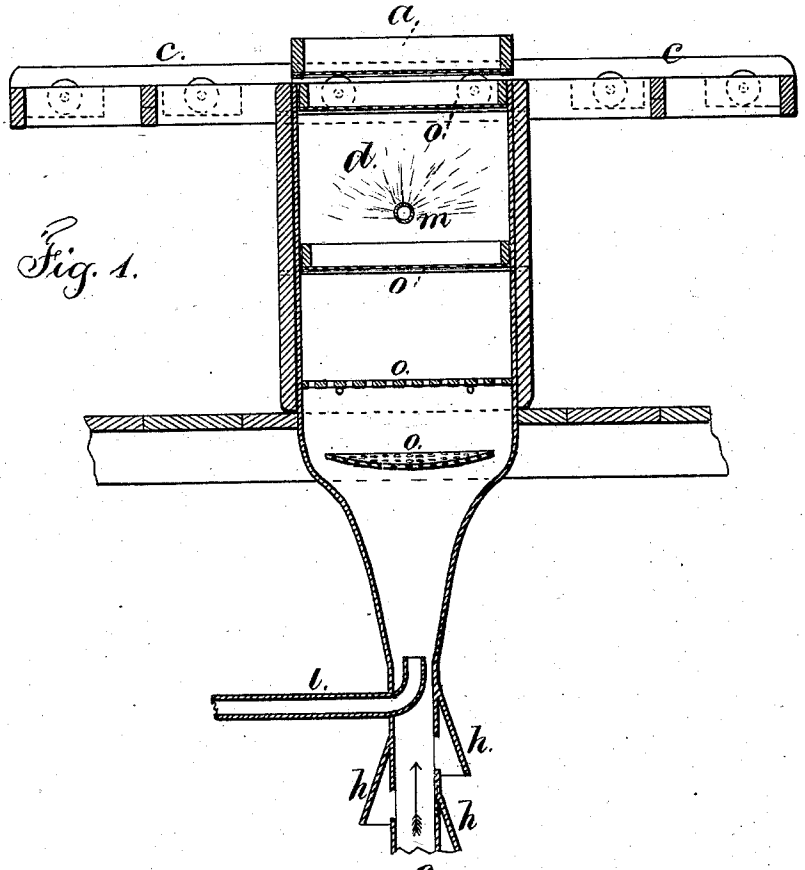
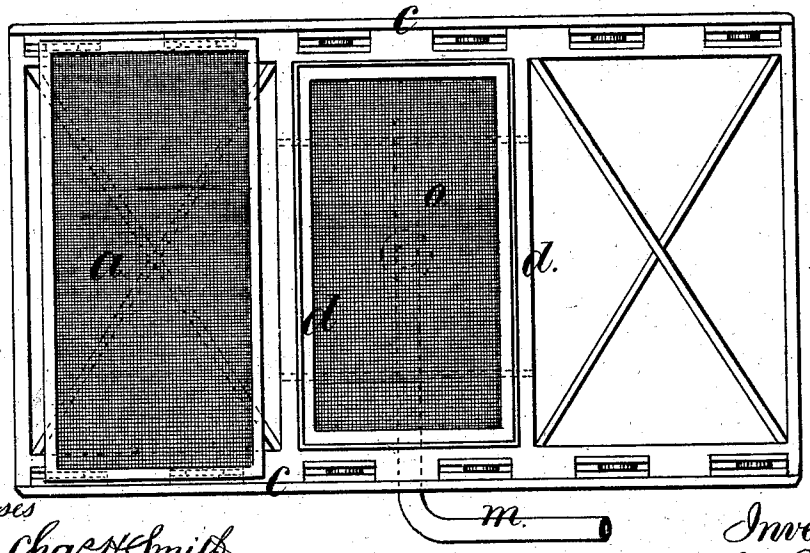


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID C. LYALL, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN THE MANUFACTURE OF TOBACCO.

Specification forming part of Letters Patent No. **191,870**, dated June 12, 1877; application filed March 24, 1877.

To all whom it may concern:

Be it known that I, DAVID C. LYALL, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in the Manufacture of Plug-Tobacco, of which the following is a specification:

The tobacco-leaf is usually steeped in a bath of sweetening-liquid—such as an extract of licorice—and then dried upon frames of perforated material. After this the tobacco is softened for working by being hung or tiered up in a room, that is subsequently filled with steam. This process is open to many objections. In removing the dry adhesive tobacco from the drying frames or racks much waste occurs, in consequence of the tobacco becoming broken and pulverized, and unfit for use in making plug-tobacco. Besides this, in the steaming operation the tobacco becomes very irrregularly moistened, and the vapor of the room is very detrimental to the workmen. The tobacco that is hung or tiered up the highest is moistened to a greater extent than that which is lower down in the room, because the steam rises.

My present invention is to overcome these difficulties and render the preparation of the tobacco uniform and reliable.

After the tobacco has been thoroughly dried it is conveyed to my improved moistening apparatus in the perforated drying-frames, and it is there softened and rendered pliable and tough, so that it can be removed from the perforated frames without injury or waste.

In the drawing, Figure 1 is a vertical section, and Fig. 2 is a plan, of the improved moistening apparatus.

The trays or frames *a a* are made with perforated bottoms, and these receive the tobacco after it has been immersed in the sweetening-liquid—such as extract of licorice—and upon these frames the tobacco is dried in any suitable apparatus—such as that heretofore made use of—by which drying operation the tobacco is deprived of its moisture and rendered brittle.

It is well understood in the manufacture of plug-tobacco that this complete drying operation is indispensable, so that the thicker bunches of the leaves may be dried, and in so doing the leaves are necessarily rendered brittle and easily pulverized in handling.

At this stage of the manufacture my improvement is availed of. The trays containing the dry tobacco are placed in succession upon the slideways *c c*, and brought over the steaming-box *d*, and, when steamed, the trays of tobacco are moved aside and emptied while the next tray or trays of tobacco are being steamed.

The object which I seek to accomplish in steaming is to moisten the tobacco uniformly without heating it; and with this object in view it is necessary to reduce the temperature of the steam as nearly as possible to the point of condensation. This is accomplished in the following manner: The steam from any desired source, either live or exhaust steam, ascends into the steam-box *d*, and air is admitted freely by the lateral hooded openings *h*, so as to mingle with the steam and lessen its temperature. Frequently the temperature will not be sufficiently reduced by this operation, and it becomes necessary to turn on a blast of cold air through the pipe *l*.

Sometimes a spray of water is admitted through the tube *m*, that is perforated with numerous fine holes, and serves to bring the steam to the best condition for moistening the tobacco. There are screens or perforated septums *o*, that serve to equalize the condition of the steam and insure uniformity in the ascending current of moist cool steam, that passes through the tobacco and softens the same, so that it can be easily removed from the trays and piled up or bulked without the loss resulting from the leaves becoming broken.

The operation of supplying, moistening, and removing is continuous, the workmen are not exposed to a disagreeable atmosphere, and uniformity is insured in the moistening operation.

A stationary hood above the steam-box is generally employed to convey the escape steam to a flue or chimney.

I claim as my invention—

1. The method herein specified of moistening tobacco after it has been dried by exposing the same to the direct action of moist steam

previous to its removal from the drying-trays, substantially as set forth.

2. The steam-box *d*, provided with air-inlets and equalizing-septums *o*, in combination with the slideways *c* and trays *a*, containing the tobacco to be moistened, substantially as set forth.

Signed by me this 20th day of March, A. D. 1877.

DAVID C. LYALL.

Witnesses:
THOMAS C. MOORE,
CHARLES E. MOORE.