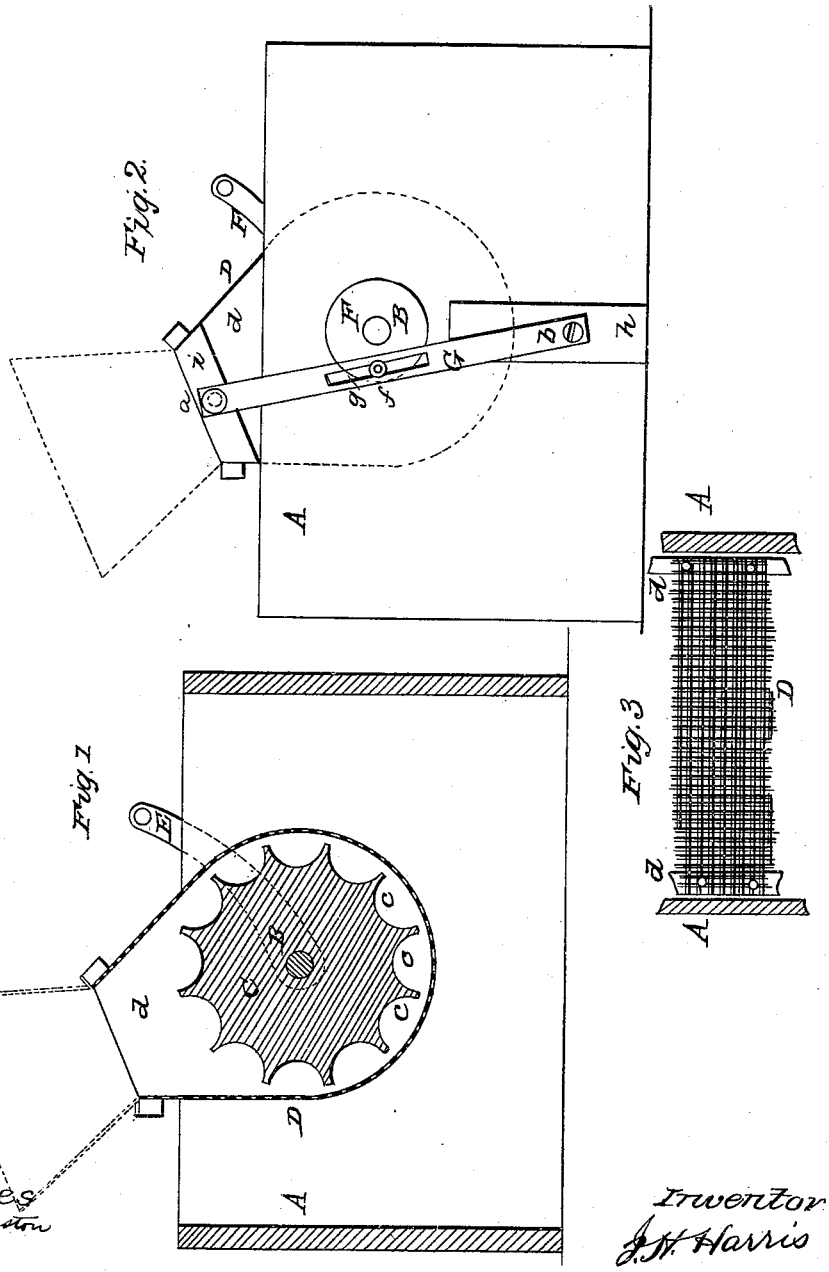
J. H. HARRIS.

Machine for Granulating Tobacco.

No. 48,680. Patented July 11, 1865.



UNITED STATES PATENT OFFICE.

J. H. HARRIS, OF NEWARK, NEW JERSEY.

MACHINE FOR GRANULATING TOBACCO.

Specification forming part of Letters Patent No. **48,680**, dated July 11, 1865.

To all whom it may concern:

Be it known that I, JOHN H. HARRIS, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Machines for Granulating Tobacco; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional view of my machine transversely with the shaft. Fig. 2 is an elevation thereof from the side opposite the crank by which it is driven. Fig. 3 is a detailed view of a portion of the mesh of the vibrating granulator.

Similar letters of reference indicate like parts.

This invention consists in an improved machine for granulating or dividing the leaves of tobacco into minute divisions for smoking in pipes, wherein a corrugated beater-roller is made to revolve within a vibrating vessel whose sides are composed of wire-cloth, or of a mesh of like character, so that the tobacco is broken up and delivered in small pieces through the meshes of the wire-cloth into a box below.

In most other machines and devices gotten up for the purpose of granulating leaf-tobacco a great portion of the leaf is reduced to the condition of dust, which, being too fine to smoke, is usually treated as refuse. Besides this defect, which arises from the unsuitable character of the devices and apparatus employed, the work is performed by them slowly and unprofitably.

The machine herein described is intended to bring the tobacco submitted to it to the desired condition with greater speed, with less loss from waste, and with more regularity or uniformity in size than have heretofore been realized.

A is a box of rectangular form, open at top, and fitted to receive in its sides a shaft, B, which projects beyond it from either side, so as to receive at one end a crank, E, and at the other end a disk, F, which carries a crank-pin, *f*, near its circumference.

C is a wooden roller corrugated longitudinally, so as to form ridges *c c* upon its periphery parallel with its axis. It is fixed to the shaft so as to revolve with it within the box A.

D is a basket or vessel whose ends *d d* are solid and of an oval contour, and whose sides are made of wire-cloth, which is nailed to the edges of the solid sides in the manner seen in Fig. 3. The mouth of the vessel D is open and turned upward so as to extend above the sides of the box A. The shaft B passes loosely through the solid ends *d* of the said vessel, the said ends being severally placed between the sides of the box A and the ends of the roller C, the wire-cloth thereby being made partly to surround the said roller in the manner shown in Fig. 1.

G is a vibrating lever pivoted to the upper edge of the vessel D through an intermediary block or arm, *i*, which projects therefrom over one side of the box A, and extending downward on the outside of the box to a point near the bottom thereof and vertically beneath the shaft B, where it is pivoted by means of a pin, *b*. A vertical slot is cut in the upper end of the lever G, in which the pivot at that end is free to move as the vessel D vibrates to and fro. The top of the vessel D is secured in any suitable manner to a hopper, (here indicated in red outline,) which may vibrate with the vessel; or the hopper may be suspended above the box A and be connected to the vessel by a flexible joint. The lever G has a longitudinal slot cut in it opposite to the disk F, and of a length equal to the diameter of the disk, and through said slot a pin, *f*, is passed.

The operation of the apparatus is as follows: Motion being given to the shaft B the corrugated roller C will rotate within the lower portion of the vessel D, while the vessel D will be caused to vibrate upon the shaft B by means of the pin *f* of the rotary disk and the groove *g* in the lever G. The tobacco which is to be granulated is to be placed in the hopper or other feeding device used in connection with the vessel D, and it should be in a dry condition in order to secure a favorable result. From the hopper the leaves of tobacco pass into the vessel D and are drawn down by the ridges *c* of the corrugated roller and broken against the sides of the vessel D, whose meshes permit the tobacco which becomes granulated and

reduced to the size of their openings to pass through into the box. The tobacco is subjected to a great deal of abrasion by reason of the compound action brought to bear upon it by the rotation of the corrugated roller continuously in the same direction, and the to-and-fro movements of the surrounding vessel D.

The wire-cloth sides of the vessel D may be made in sections, so as to be separately detachable, instead of making them in one continuous piece, as here shown.

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

The combination, in a machine for granulating tobacco, of the vibrating vessel D, having open sides, with a corrugated roller revolving therein, substantially as above described.

J. H. HARRIS.

Witnesses:
M. M. LIVINGSTON,
C. L. TOPLIFF.