

C. H. LILIENTHAL.  
Granulating Tobacco.

No. 102,560.

Patented May 3, 1870.

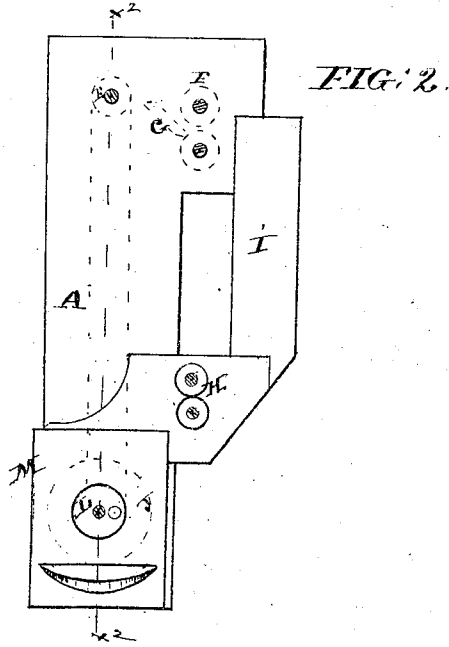
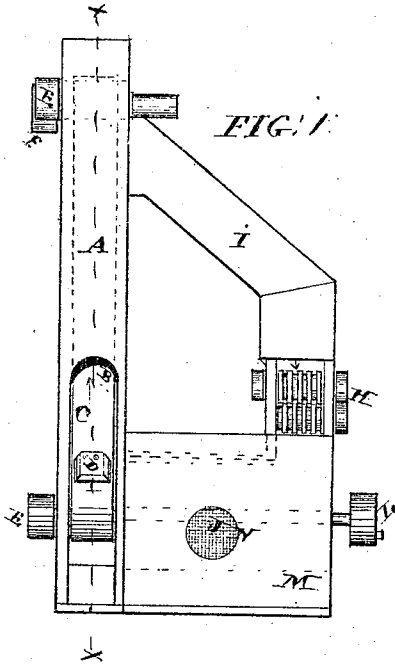


FIG. 3.

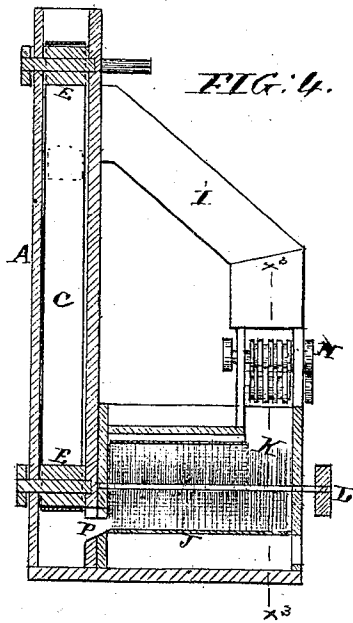
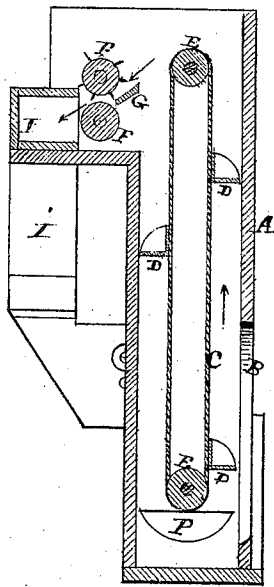
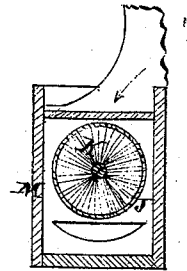


FIG. 5.



Witnesses  
Charles L. Barrick  
Franklin Cammell.

Inventor  
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# United States Patent Office.

CHRISTIAN H. LILIENTHAL, OF YONKERS, NEW YORK.

Letters Patent No. 102,560, dated May 3, 1870.

## MACHINE FOR GRANULATING TOBACCO.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, CHRISTIAN H. LILIENTHAL, of Yonkers, Westchester county, and State of New York, have invented certain new and useful Combinations in Mechanism for Continuously and Automatically Granulating or Chipping Leaf Tobacco without the necessity of separating the stems therefrom by hand or independent operation, as has been heretofore practiced; and I do hereby declare that the following is a full description of the same.

The nature of my invention consists—

First, in arranging an endless belt with buckets or carriers thereon in an elevator-box or trunk, in combination with a set of revolving cutters, arranged transversely in the upper part of the elevator-box, so that, as the tobacco falls from the carriers or buckets, it will feed through the cutter-rollers, and thus be cut into small pieces.

Second, in arranging a "chute" or trunk to take the tobacco as it comes from the cutters and deliver it to a second set of cutting or granulating-rollers arranged at its lower end, whereby the fragments or chips of tobacco and stems discharged from the first set of rollers will be cut or broken up to complete the granulation of the tobacco.

Third, in the combination and arrangement of a revolving brush and cylindrical wire-gauze sieve with the said second set of rollers, whereby the granulated tobacco is forced through the meshes of the sieve, while the larger pieces, that have escaped being granulated, are discharged through an opening at the rear end of the sieve to the elevator-box, to be automatically taken up by the endless-belt elevators to be discharged into or through the cutters, to repeat the cutting and granulating operation until the leaf and stems are entirely granulated.

Fourth, in combining the elevator-box with the cylindrical sieve, by means of a passageway or opening at the lower back end of the sieve leading to the lower end of the elevator-box, whereby the unsifted tobacco and stems will be delivered upon the endless elevator-buckets, to be carried up to the rollers to be recut, and thus automatically reduced to the size and quality of chip to make a good smoking tobacco.

But, to describe my invention more particularly, I will refer to the accompanying drawings forming a part of this specification, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 represents a front view of the apparatus.

Figure 2, an end view of the same.

Figure 3, a vertical-cut section of the same through the line  $x x$ , fig. 1.

Figure 4 is a vertical-cut section of the same through the line  $x^2 x^2$ , fig. 2.

Figure 5 is a sectional view of the end of the sieve and revolving brush through line  $x^3 x^3$ , fig. 4.

Letter A represents the elevator-box or trunk, and B an opening in the front of it. The height of the box is some six to eight feet. The object of this is to give sufficient fall for the free and rapid descent of the tobacco from the cutter-rollers to the granulating-rollers. In this elevator-box is arranged an endless elevator-belt, C, on the face of which are secured any required number of elevator-buckets or carriers, D. These buckets are intended to be of sufficient width and depth to take up readily all the tobacco and stems as fast as fed into the box from the sieve.

Letters E are two carrying-rollers, over which the endless elevator-belt runs.

Letters F are a pair of revolving cutters, or a cutter-roller and an opposing blank-faced roller, arranged on suitable bearings transversely in the upper end of the elevator-box, in such a position, with reference to the upper carrying-roller of the endless elevator-belt, that the buckets will discharge their loads of tobacco directly upon a guide or table, G, leading into or between the rollers F, and thus be cut up into small chips or fragments preparatory to its passing through the granulating-rollers H. These rollers are arranged at the lower end of a "chute" or trunk, I, which, at its upper end, connects with the upper end of the elevator-box, at a point just below the cutters F, so as to receive the chips therefrom, and, by its rapid descent, deliver it to the granulating-rollers. These rollers are made of metal, and have their opposing faces channeled with alternate square-edged grooves, and are so set that the tobacco or stems, in passing between them, will be broken up into small fragments, and is thence discharged into a cylindrical wire-gauze sieve, J, arranged in a box, M, directly in front of the granulating-rollers, and on a line with the foot of the elevator-box A.

Into this cylindrical sieve (at the point indicated by the arrow, fig. 5.) is fed the "hand of tobacco" as taken from the original packer's hogshead, which, by means of a revolving brush, K, rotated by a belt on the pulley L, strips the leaves from the stems, and brushes the finer portions of the tobacco through the meshes of the sieve into the box M, from whence it is taken out through the side openings N, while the unsifted portions and stems are brushed out of the sieve through an opening, P, at its back end, into the lower end of the elevator-box, from whence they are taken up by the elevator-buckets and fed through the cutters F, to prepare them for the granulating-rollers.

In the practical working machine the opening P is made of metal, and with a sufficient fall or descent to carry off freely all the scraps as fast as discharged from the sieve, and thus prevent the machine choking, as would be the case if the discharge P had no fall from the level of the lower side of the sieve.

From this description of the construction of the ma-

chine, it will readily be perceived that, by the single operation of feeding in the "hand of tobacco" as taken from the hogshead as originally packed, the whole of it is continuously and automatically reduced to a granulated smoking tobacco. By the usual process this is not practicable, as the tobacco has to be opened and separated when first taken from the hogshead, and broken up. The fragments are then passed through the brush and sieve apparatus, which but partially strips the leaves from the stems, and then discharges the unsifted fragments of leaves and stems into a collecting-box, from whence they are taken by hand and fed through the granulating-rollers, which is repeated till the stems are sufficiently granulated to pass through the meshes of the sieve, thereby adding greatly to the labor and expense of preparing good smoking-tobacco.

By my invention of taking the stems and fragments of unsifted leaves by an elevator-belt directly from the sieve, and feeding them through the preliminary cutters, to prepare the tobacco for the granulators by cutting the stems into short pieces, the granulating-rollers are enabled to perfect the granulation of the tobacco at one operation, and thus, by a single continuous and automatic operation, greatly lessen the cost and labor of making granulated smoking-tobacco.

Having now described my invention, I will proceed

to set forth what I claim, and desire to secure by Letters Patent of the United States, premising, however, that I do not claim the cutting, or granulating, or sieve apparatus as independent and separate devices, as I am aware of the fact that each of them, separately, has been used for various purposes, but never in the same combinations as described by me.

What I claim, therefore, is—

1. The combination of the elevator-box A and endless elevator-belt C with the guide or table G and cutter-rollers F, constructed substantially as described, and for the purposes set forth.

2. The cutter-rollers F and guide G, in combination with the descending "chute" I and granulating-rollers H, constructed substantially as described, and for the purposes set forth.

3. The combination of the sieve and brush J and K with the elevator-box A and endless elevator-belt C, by means of the discharging-tube or passage-way P, connecting the interior of the sieve with the lower end of the elevator-box, substantially as described, and for the purposes set forth.

CHRISTIAN H. LILIENTHAL.

Witnesses:

CHARLES L. BARRITT,  
FRANKLIN BARRITT.