S. V. APPLEBY.

APPARATUS FOR GRINDING TOBACCO.

No. 195,073. Patented Sept. 11, 1877.

Fig. 1.

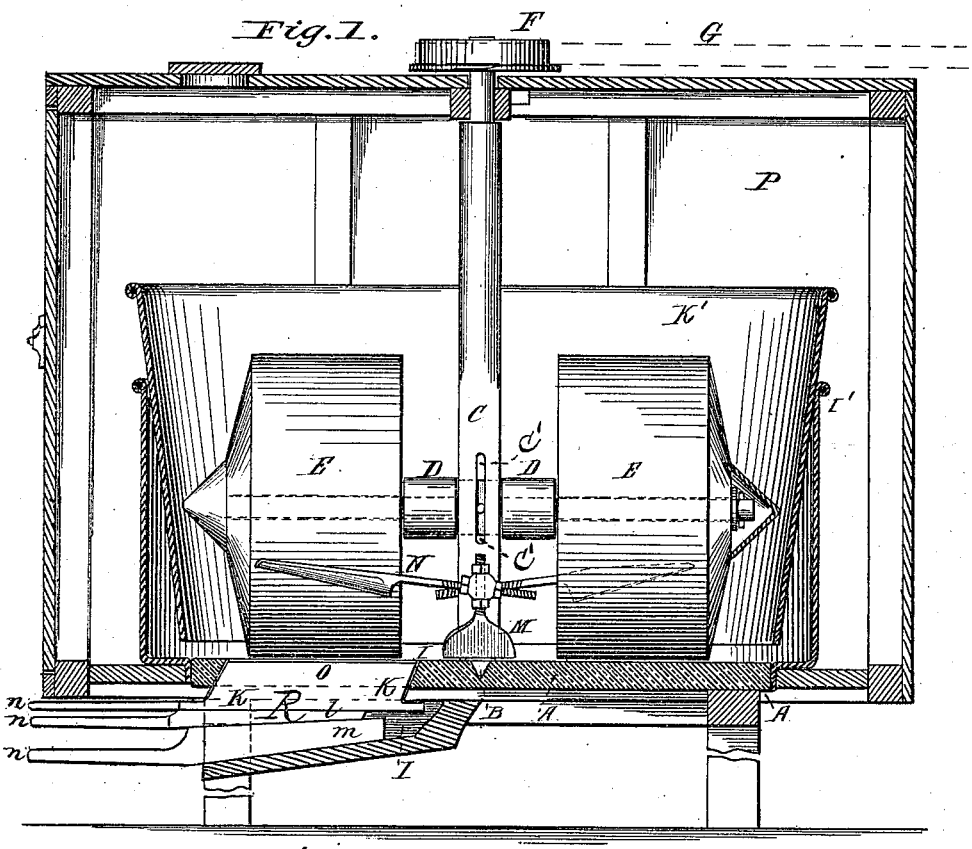
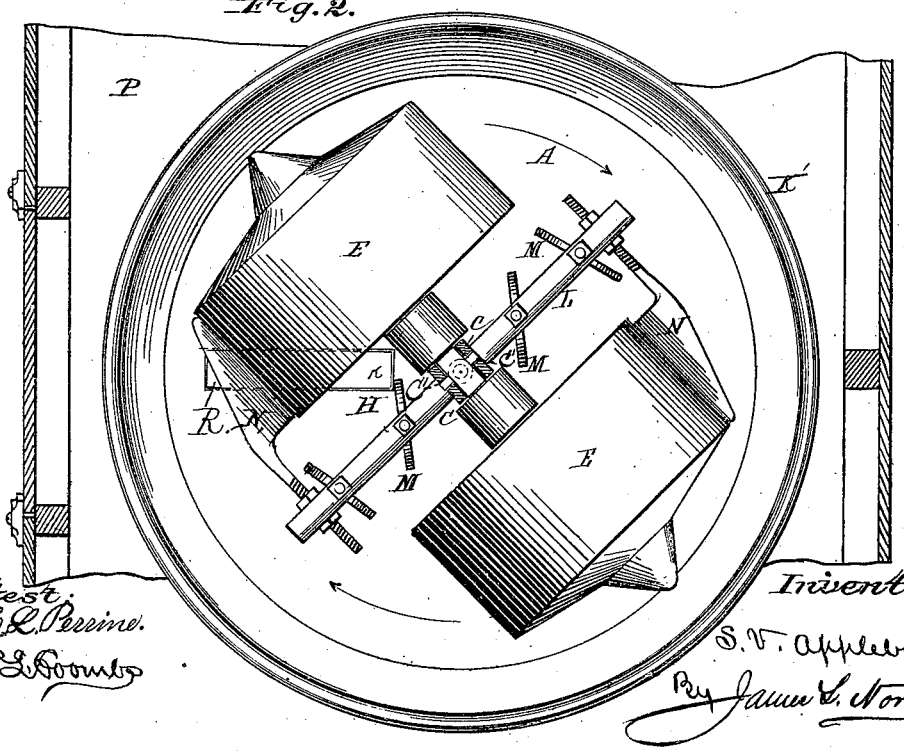


Fig. 2.



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STEPHEN V. APPLEBY, OF SPOTSWOOD, NEW JERSEY.

IMPROVEMENT IN APPARATUS FOR GRINDING TOBACCO.

Specification forming part of Letters Patent No. **195,073**, dated September 11, 1877; application filed February 17, 1876.

To all whom it may concern:

Be it known that I, STEPHEN V. APPLEBY, of Spotswood, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Grinding Tobacco into Snuff, of which the following is a specification:

This invention relates to an improved apparatus for grinding tobacco for the manufacture of snuff.

For this purpose the tobacco may be ground in either a wet or dry condition, either of which may be found convenient, according to circumstances.

Heretofore, however, each condition of the tobacco—that is, wet or dry—required a separate and independent machine adapted to the peculiar condition of the tobacco, involving a great outlay of expense; and the object of my invention is to provide a machine adapted to grind the tobacco either in a wet or dry state, as circumstances may require.

To this end I employ a bed-stone, forming the bottom of a cylindrical casing, upon which is arranged to travel two rotating chasers journaled on the ends of a horizontal shaft adjustably secured to a vertical shaft, by means of which the chasers may be caused to travel in a circular direction upon the face of the stone.

In grinding tobacco for snuff, however, it has to be subjected to the continued action of the chasers for a certain length of time in order to be properly comminuted, and, in order to work off a paying charge, a considerable quantity of tobacco has to be placed in the casing at once. This necessitates considerable room beyond that required for the track of the chasers.

In grinding dry tobacco, however, the currents of air caused by the movement of the chasers have a tendency to lift the small particles of tobacco upward, and, unless provision is made against it, said particles fall outside of the track, and are never thoroughly comminuted, and only a small portion of the tobacco which is sufficiently ground to be carried over the upper edge of the casing can be brought to the condition of snuff.

This difficulty is not experienced in grinding wet tobacco; but another just as serious is in the way, as the wet tobacco is not removed when sufficiently ground, but has to be discharged through the bed-stone; and, if an open aperture were left for the purpose, it would all be discharged before being thoroughly comminuted.

These are the two serious objections to the adaptation of one machine to the grinding of both kinds of tobacco which it is my object to obviate; and to this end the essential features of my invention consist, first, in the combination, with the casing of the apparatus, of a frustum-shaped casing, arranged to fit within the same, its lower edge extending to near the bed-stone, and closely adjoining the track of the chasers, so as to collect and return all particles of tobacco too heavy to be carried over its edges during the operation of wet-grinding, at the same time leaving sufficient room outside of said track for a full charge of tobacco; and, second, in the combination, with the discharge-aperture through the bed-stone, of a detachable device for closing the same, that may be wedged into said aperture, and held therein with sufficient firmness to form a continuation of the grinding-surface, so as not to interfere with the operations of the chasers.

In the drawings, Figure 1 represents a vertical sectional view of the apparatus; Fig. 2, a view looking down upon the same.

The letter A represents a horizontal bed of stone or other suitable material, provided with a step, B, at its center, in which is journaled the conical end of the vertical shaft C. Said shaft is provided with an adjustably-secured cross-shaft, D, on the opposite ends of which are journaled the chaser-wheels E E. The peripheries of said wheels rest and are adapted to travel upon the upper surface of the bed A.

F represents a pulley secured to the vertical shaft C, over which passes a band, G, for transmitting motion to said shaft and chaser-wheels.

The shaft C is also provided with an arm, L, having a series of scrapers, M, for clearing the face of the bed-stone, and two scrapers, N, for clearing the chasers of collected snuff.

The letter I′ represents a vertical cylindrical casing surrounding the bed-stone of the apparatus, to confine the snuff, and K′ a frustum-

shaped casing within the same, its lower edge terminating near the face of the bed stone, and in close contiguity with the track of the chasers, for the purpose of returning any particles of tobacco thrown off of the track by the currents of air, when too heavy to be carried over the top of the casing, in grinding dry tobacco.

The letter R represents the plug for stopping the discharge-apertures, composed of three wedge-shaped parts, *k l m*. These are composed of iron or other suitable material, each being provided with a ring or handle, *n*, for inserting and removing the same. The part *k* is provided with a projection, *o*, on its upper side, which sits into and closes the aperture H when in place.

The part *k* is inserted first into the aperture I, the projection *o* being set into the aperture H. The part *l* is then inserted, and, finally, the part *m* is driven in below the other two, securing the whole firmly in place.

The top of the bed-stone around the aperture is strapped with iron, and also the interior of said aperture, if desired.

The letter P represents a close casing surrounding the entire apparatus.

In operation the tobacco in sufficient quantity is placed in the casing I′ upon the bed-stone, and the chasers are put in motion. In case of dry tobacco, as it is sufficiently ground the particles are carried over the top of the casing K′ and collected in the outer casing, imperfectly-ground particles falling back before reaching the top, and falling again upon the track of the chasers, the operation continuing until all the tobacco is thoroughly ground.

In the case of wet-grinding, the chasers are kept in motion until the tobacco is sufficiently comminuted, when the plug R is removed and the snuff discharged.

What I claim, and desire to secure by Letters Patent, is—

1. In combination with the bed-stone, the chasers, and scraping devices, their rotating shaft and the inclosing casing, the frustum-shaped casing supported within said casing, and terminating at its bottom near the face of the bed-stone, in close contiguity with the track of the chasers, whereby the heavier particles of tobacco are returned to said track, substantially as and for the purpose specified.

2. In combination with the bed-stone, the detachable plug R, consisting of the parts *k l m*, whereby the aperture is closed while the grinding is being effected, and opened for the discharge of the wet snuff, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

STEPHEN V. APPLEBY.

Witnesses:

JOS. L. COOMBS,

A. H. NORRIS.