

June 29, 1954

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2,682,271

APPARATUS AND METHOD FOR CONDITIONING TOBACCO

Filed Oct. 17, 1952

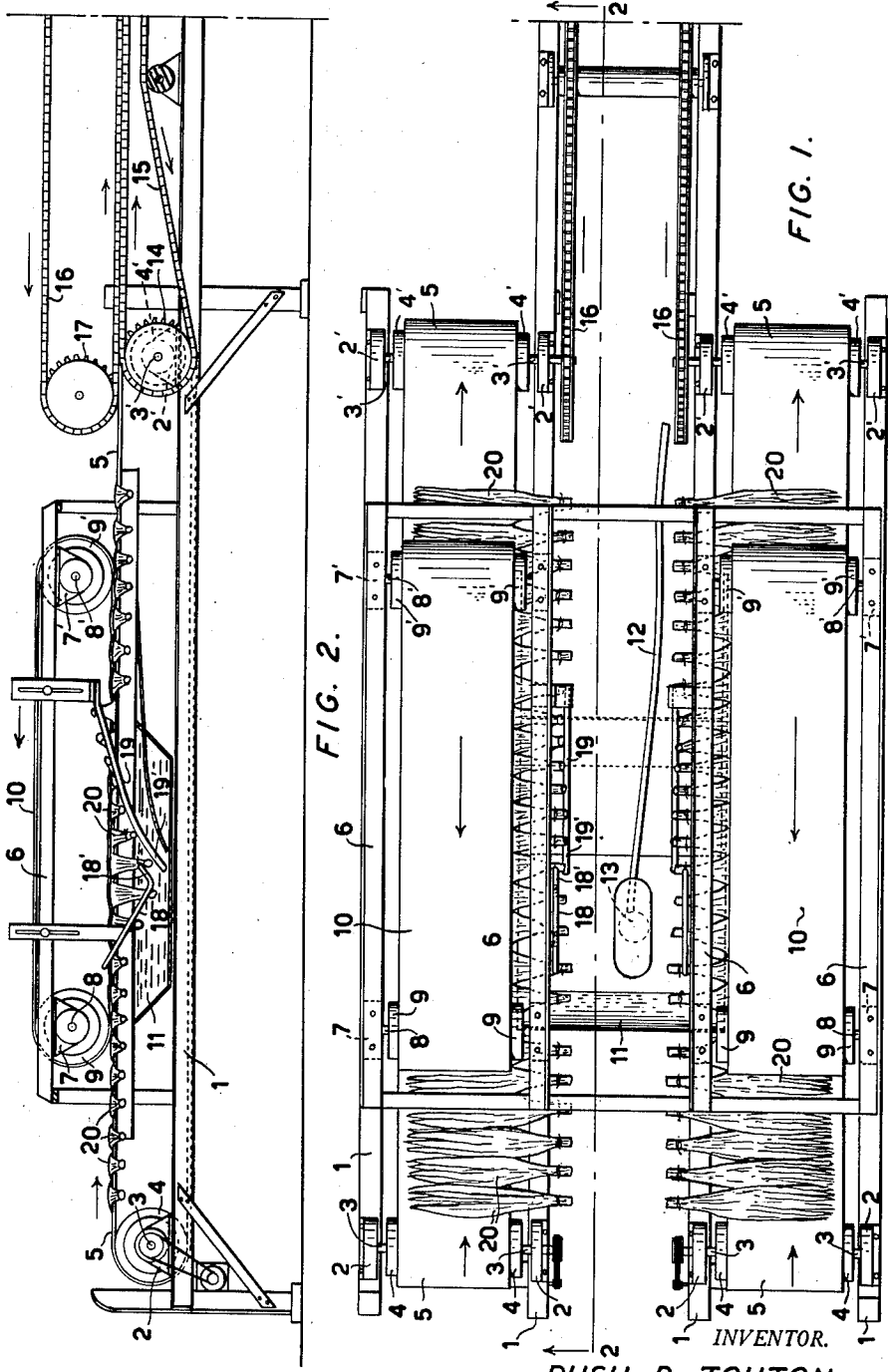


FIG. 1.

FIG. 2.

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# UNITED STATES PATENT OFFICE

2,682,271

## APPARATUS AND METHOD FOR CONDITIONING TOBACCO

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Application October 17, 1952, Serial No. 315,236

8 Claims. (Cl. 131—136)

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This invention relates to apparatus and method for conditioning tobacco and more particularly to apparatus for wetting the butts of tobacco leaves, tied in hands, preliminarily to the conditioning of the tobacco leaves as a whole.

It has long been customary in the preparation of tobacco for processing, as, for example, the manufacture of cigars, to subject it to treatment for adjustment of its moisture content, more particularly, as we are concerned here, by the addition of moisture.

The addition of moisture to butt and leaf portions of dry tobacco with a view of adjusting moisture content thereof to that desired and with that uniformity throughout the butt and leaf portions which will condition it for processing has long presented a problem, more particularly because the butts of tobacco leaves absorb moisture much more slowly than do the leaf portions; and this characteristic is enhanced when the leaves are tied into hands by a tie encircling and constricting the butts. Hence a treatment which will effectively condition the tips and median portions of tobacco leaves will not be effective to simultaneously effectively condition the butt portions of the leaves.

Heretofore highly efficient procedures and apparatus have been developed for the conditioning of the leaf portions of tobacco leaves, but the butt portions have required preliminary treatment, as hand dipping or the provision of spray means for wetting the butts, prior to treatment of the leaf portions.

According to this invention, apparatus is provided for effecting dipping of the butt portions of hands of tobacco leaves, while manipulating the butt portions relative to the leaf portions, from a description of the operation of which the method according to this invention will be made apparent.

The apparatus according to this invention may be used alone or in combination with apparatus for conditioning the leaf portions of hands of tobacco, such, for example, as is illustrated and described in United States patent to Rush D. Touton, No. 2,379,118, dated June 26, 1945.

Having now indicated in a general way the nature and purpose of this invention, I will proceed to a detailed description of the construction and operation of a preferred embodiment thereof, with reference to the accompanying drawing in which:

Figure 1 is a plan view of the form of apparatus embodying the invention.

Figure 2 is a vertical section taken on line 2—2 in Figure 1.

Referring to the several figures, 1 indicates a frame serving to support, in bearings 2, 2', a pair of spaced shafts 3, 3' which carry rollers 4, 4' over which travels an endless belt 5.

An auxiliary frame 6 mounted on the frame 1

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between the rollers 4, 4' serves to support, in bearings 7, 7', a pair of spaced shafts 8, 8' which carry rollers 9, 9' over which travels an endless belt 10 of the width of belt 5 and the lower reach of which rides on the upper reach of the belt 5.

At one side of the belt 5 and adjacent to the edge thereof is a tank 11 adapted to be supplied with water through a supply pipe 12 equipped with a valve (not shown) controlled by a float 13 to maintain a controllable level of water in the tank. The water supplied through pipe 12 may be heated or cooled by any constant means.

Supported from a longitudinal member of frame 6, by slot and pin connection for adjustability and spaced from the edges of belts 5 and 10 is a guide member 18 which extends from above the plane of the belts forwardly and downwardly into tank 11 and has its lower end portion 18' turned to extend upwardly at an angle. A second guide member 19, supported from frame 6, by a slot and pin connection for adjustability, extends from above the plane of the belts 5 and 10 rearwardly and downwardly into tank 11 and has its lower end portion 19' bowed downwardly beneath the upturned end portion 18' of the member 18. The member 19 is spaced further from the edges of belts 5 and 10 than is member 18.

The shaft 3' supported from the frame 1 carries a sprocket 14 with which is engaged an endless chain 15 which with an endless chain 16 engaged with a sprocket 17 serves as a conveyor to convey hands of tobacco received from the belt 5 for treatment to condition it, for example, with apparatus and by procedure fully illustrated and described in the aforementioned United States Patent No. 2,379,118, or by other apparatus and/or procedure as may be desired.

It will, of course, be understood that the belt 5 is driven by a suitable prime mover, as an electric motor, connected in any suitable manner, as, for example, by chain and sprocket to the shaft 3. Likewise the chain 15 may be driven from the prime mover by the belt 5 in passing over roller 4'.

While the apparatus described above will comprise a complete apparatus, it will desirably and usually, for maximum production with economy of space, be associated with a duplicate arrangement in opposite spaced relation with a single tank 11 as illustrated in Figure 1.

In the operation of the apparatus illustrated, it will be understood that the belts 5 and 10 and the chains 15 and 16 will be travelling in the direction indicated by arrows, Figures 1 and 2.

To proceed, hands of tobacco 20 will be successively placed, by operators, on the belts 5, ahead of the belts 10, in opposite extension, with their butt portions extending beyond adjacent edges of the belts; and preferably with their leaf portions somewhat overlapped or shingled—all as clearly shown in Figure 1.

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In the travel of the belts 5 the leaf portions of the hands 20 will be carried under and be engaged by the belts 10. Then the butt portions of the hands 20 engage the guide members 18 which depress or bend the butt portions, relative to the leaf portions which are held by belts 10, down below the plane of the leaf portion into the water in tank 11. As the butt portions reach the upturned end portions 18' of guides 18, they are engaged by the downwardly bowed end portions 19' of guide members 19 and thereby bent upwardly above the plane of the leaf portion; and then released to assume a normal extension beyond the edges of the belts.

Finally the hands 20 are delivered by belts 5 into the nip of chains 15 and 16, which serve to convey the hands for further treatment as indicated above.

Variously the butts portions of different tobaccos and the different conditions will require more or less water, heated or cooled water, deflection downward into the tank 11 and upward. The requisite condition, i. e., amount of water in tank 11, temperature of the water and deflection, will be obtained by adjustment of float 13, guides 18 and 19 and supply of water to tank 11 at requisite temperature.

It will now be appreciated that the apparatus according to this invention serves at once to effect a dipping of the butts portions of hands of tobacco and a manipulation of the butts by downward and upward bending thereof with respect to the leaf portions, which manipulation serves to distribute the water taken up in the dipping toward the leaf portions and facilitate its absorption by the butts of the leaves comprising the hands; and some time a manipulation or flexing of the leaf portions is effected.

It will be understood that various modifications of the apparatus and procedure above described in detail may be made without departing from this invention as defined in the appended claims.

What is claimed is:

1. Apparatus for conditioning tobacco comprising means extending substantially horizontally for conveying hands of tobacco while supporting horizontally the leaf portions of the hands only, the butt portions of the hands being in free extension with respect to the leaf portions, a container constituting a reservoir for water adjacent to the path of travel of the butt portions of the hands, and means above the bottom of the reservoir for diverting the butt portion out of free extension and into said body of water.

2. Apparatus for conditioning tobacco comprising means extending substantially horizontally for conveying hands of tobacco while supporting horizontally the leaf portions of the hands only, the butt portion of the hands being in free extension with respect to the leaf portions, means cooperating with said conveying means for confining the leaf portions of the hands, a container constituting a reservoir for water below the path of travel of the butt portions of the hands, and means above the bottom of the reservoir for bending the butt portion of the hands downwardly below the plane of extension of the leaf portions and into the body of water.

3. Apparatus for conditioning tobacco comprising means extending substantially horizontally for conveying hands of tobacco while supporting horizontally the leaf portions of the hands only, the butt portions of the hands being

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in free extension with respect to the leaf portions, means cooperating with said conveying means for confining the leaf portions of the hands, a container constituting a reservoir for water below the path of travel of the butt portions of the hands, and means above the bottom of the reservoir for bending the butt portions of the hands downwardly below the plane of extension of the leaf portions and into the body of water and then upwardly out of said body of water to a point above the plane of extension of the leaf portions.

4. Apparatus for conditioning tobacco comprising an endless substantially horizontal belt conveyor for hands of tobacco, an endless belt having a reach adapted to engage the leaf portions of said hands of tobacco and which is overlying and adjacent to a reach of said conveyor between points spaced from the ends of said conveyor, a reservoir adapted to contain water positioned along side of and below the edge of the portion of the reach of said conveyor overlapped by a reach of said endless belt, and fixed guide means for diverting the butt portions of hands of tobacco downwardly into said tank.

5. Apparatus for conditioning tobacco comprising an endless substantially horizontal belt conveyor for hands of tobacco, an endless belt having a reach adapted to engage the leaf portions of said hands of tobacco and which is overlying and adjacent to a reach of said conveyor between points spaced from the ends of said conveyor, a pan adapted to contain water positioned alongside of and below the edge of the portion of the reach of said conveyor overlapped by a reach of said endless belt, and fixed guide means for diverting the butt portions of hands of tobacco downwardly into said tank, and then upwardly out of said tank to a point above the plane of said conveyor.

6. The method for conditioning tobacco which comprises confining the leaf portions only of hands of tobacco in a substantially horizontal plane with the butt portions in free extension and bending the butt portions of the hands relative to the leaf portion into a body of water.

7. The method for conditioning tobacco which comprises confining the leaf portions only on hands of tobacco in a substantially horizontal plane with the butt portions in free extension and bending the butt portions of the hands in one direction relative to the leaf portions into a body of water and then bending the butt portions in the opposite direction out of the body of water to a point above the plane of the leaf portion.

8. The method for conditioning tobacco which comprises confining the leaf portions only on hands of tobacco in a substantially horizontal plane with the butt portions in free extension and bending the butt portions of the hands in one direction relative to the leaf portions into a body of water, then bending the butt portions in the opposite direction out of the body of water to a point above the plane of the leaf portions and then permitting the butt portions to assume a position of free extension.

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#### UNITED STATES PATENTS

Number	Name	Date
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2,379,118	Touton	June 26, 1945
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