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PROCESS FOR CASING TOBACCO LEAVES

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Fig. 1.

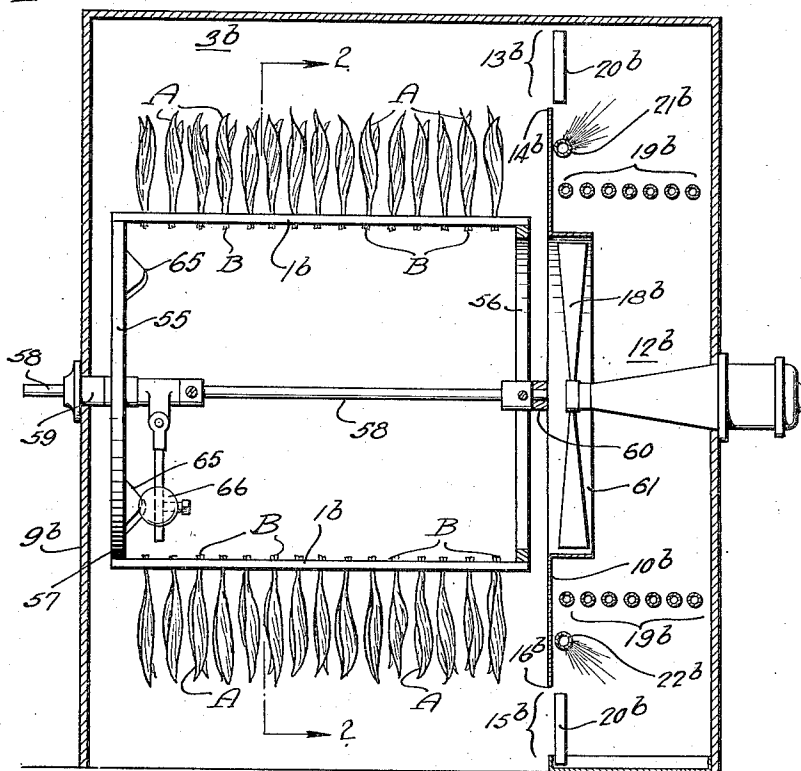
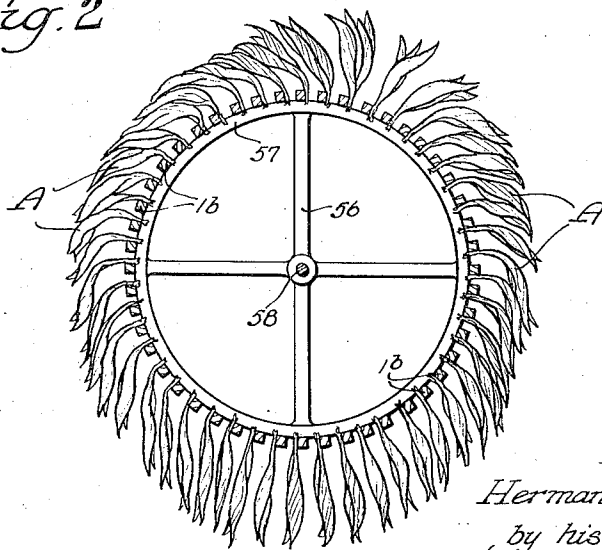


Fig. 2



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PROCESS FOR CASING TOBACCO LEAVES

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5 Claims. (Cl. 131—140)

This invention relates to what is known in the tobacco industry as "casing," i. e. the treatment of tobacco leaves which are to be used as cigar wrappers, particularly outside wrappers.

5 The tobacco leaves which are to be used as cigar wrappers are "cased" to soften them, in order that the stems may be readily removed and in order that the leaves will be sufficiently pliable to enable them to be handled and wrapped firmly
10 around the filler tobacco of the cigar without cracking or breaking the wrappers.

Tobacco leaves are normally received by the cigar makers in bunches, i. e. a number of leaves are arranged together with the tips extending in the same direction and with the stem or stalk ends of the leaves bound and tied firmly together. The tip ends of the bunches are known as the "tails" and the stem ends as the "heads" of the
15 bundles.

Prior to the present invention the casing of the tobacco leaves has been accomplished manually. The bundles have been dipped, heads down, into a tank of water. Holding the bundles by the heads after withdrawing them from the water, the caser would shake the bundles a few times to loosen up the leaves and to throw off excess moisture from the leaves. After dipping and shaking, the bundles were stacked on tables, heads down and tails up. The stacks were then covered with damp cloths and allowed to stand for a predetermined length of time, for example, over night, to permit the moisture to spread through the tobacco. At the end of the specified time the damp cloths were removed and the tobacco inspected. The inspection usually showed that as a result of the dipping, shaking and stacking operations some of the bundles were too wet while others had not absorbed enough moisture to make them usable for the purpose for which they were intended. The under-moist bundles were necessarily redipped and the whole course of procedure repeated.

The above noted primitive method of casing was not only expensive but it resulted in non-uniformity of moisture content in the tobacco leaves. In some instances the tobacco would contain a considerable amount of excess moisture in what is termed as "free water." This free water has a tendency to darken the leaves and to form water marks thereon. The water marks and discoloration are extremely objectionable and result in many leaves being rejected as unsuitable for first grade cigar wrappers. Such leaves must be disposed of at a reduced price for use in the making of cigars of the lower qualities.

For the making of the more expensive grades of cigars, manufacturers offer premiums to the tobacco growers, for leaves of light shades. Under the old casing method, uncased leaves which
60 normally would meet this first grade requirement

frequently lose value by being darkened and spotted during the casing operation.

The principal object of the present invention is to provide a process for casing cigar wrapper tobacco leaves which will eliminate the objections above noted.

The principles of the present invention are based on the discovery that if tobacco leaves are maintained in cool moist air for a sufficiently long time the leaves will naturally absorb the correct amount of moisture for proper handling, without marking or darkening the leaves. The time required however, makes the natural absorption method too slow for commercial practicality. According to the principles of the present invention, the natural absorption of the tobacco leaves is accelerated by first subjecting the bundles to warm humid air in circulation. By initially warming the tobacco leaves the cellular structure of the leaves is caused to expand, in which condition the leaves are more readily susceptible to the absorption of moisture.

After the tobacco leaves have become thoroughly warmed the circulating air is cooled. This causes the moisture in the air to be absorbed rapidly by tobacco leaves.

It has been found that if the tobacco leaves are subjected to constant vibration or shaking during the whole or a substantial portion of the warming and the cooling operation the rate of absorption of the moisture by the tobacco leaves will be materially increased and that no drops of free water will collect on the leaves, therefore the leaves will not darken or become water marked.

It has also been found that absolute uniformity from head to tail of each bundle can be assured by alternately reversing the direction of the circulating air, i. e. by blowing the air, during one part of the operation, from the tails toward the heads of the bundles and, during subsequent part of the operation, from the heads toward the tails, or by intermittently reversing the direction of flow throughout the whole of the casing operation.

Apparatus for carrying out the casing method according to the principles of the present invention is shown in the accompanying drawing of which;

Fig. 1 is a diagrammatic longitudinal sectional elevation of the apparatus; and

Fig. 2 is a transverse sectional elevation taken on the line 2—2, Fig. 1.

In the apparatus shown, the heads B of the bundles A are secured to sticks 1b, which are arranged side by side, parallel to each other, around the peripheries of a pair of axially spaced wheels 55 and 56, to form a drum 57. The drum 57 is provided with an axially extending shaft 58 which is rotatably mounted in bearings 59 and 60

60 carried by the side wall 9b and partition 10b of the casing chamber 3b. The impeller 18b in this instance is mounted upon a shaft which is axially aligned with the shaft 58 of the tobacco supporting drum 57. The impeller 18b revolves in a vertical plane, in an opening 61 formed in the partition 10b which separates the casing chamber 3b from the circulating chamber 12b. Heating units 19b, 19b are provided in the circulating compartment 12b above and below the impeller 18b, i. e. between the impeller and the openings 13b and 15b respectively, adjacent the upper and lower portions of the casing chamber 3b. Refrigerating units 20b, 20b are provided in the air passages 13b and 15b respectively; and spray pipes 21b and 22b are provided in the compartment 12b adjacent the upper and lower edges 14b and 16b of the partition 10b.

The shaft 58 of the tobacco supporting drum 57 may be connected with any suitable source of power by which the drum 57 may be rotated continuously in one direction, or first in one direction and then in the opposite direction, or intermittently to a predetermined extent forwardly and a lesser extent backwardly, or merely oscillated forwardly and backwardly to the same extent, to produce shaking of the bundles A while air, warmed or cooled and moist, is circulated axially and radially through the drum 57 to drive the air from the heads B toward the tails of the bundles A or in reverse direction as above noted.

The drum 57 may be rotated at a sufficiently high rate of speed to cause the leaves to extend radially outward from the drum axis by centrifugal force while the impeller 18b is rotated alternately in opposite directions, causing the air to move radially outward and radially inward, alternately, through and between the bunches of leaves, longitudinally of the individual leaves.

One end, 55 for example, of the drum 57 may be provided with one or more projections or cam pieces 65 arranged to be engaged by a freely swinging weight 66 which, as the drum revolves will hang downwardly and strike the projections 65, with just sufficient force to shake or jar the drum and the leaves supported thereby, to eliminate excess moisture from the leaves.

I claim:

1. The process of casing tobacco leaves which consists in spreading a mass of leaves around and with their main stems substantially radial to a common center and with the butt ends of the stems pointing inwardly, securing said butt ends in said relationship against relative lateral and radial movement within an enclosure containing air, warming said air to expand the cellular structure of said leaves, introducing moisture into said air for absorption by said expanded cellular leaf structure, subsequently cooling said air to contract said structure and seal said absorbed moisture within the cells of said structure, and maintaining said mass in circular motion exclusively about said center during said expansion and contraction to facilitate said absorption and to expel excess moisture from said leaves.

2. The process of casing tobacco leaves which consists in spreading a mass of leaves around and with their main stems substantially radial to a common center and with the butt ends of the stems pointing inwardly, securing said butt ends in said relationship against relative lateral and radial movement within an enclosure containing

air, circulating said air substantially radially through said mass, warming said air in circulation to expand the cellular structure of said leaves, introducing moisture into said air for absorption by said expanded cellular leaf structure, subsequently cooling said air to contract said structure and seal said absorbed moisture within the cells of said structure, and maintaining said mass in circular motion exclusively about said center during said expansion and contraction to facilitate said absorption and to expel excess moisture from said leaves.

3. The process of casing tobacco leaves which consists in spreading a mass of leaves around and with their main stems substantially radial to a common center and with the butt ends of the stems pointing inwardly, securing said butt ends in said relationship against relative lateral and radial movement with an enclosure containing air, circulating said air alternately in opposite directions substantially radially through said mass, warming said air in circulation to expand the cellular structure of said leaves, introducing moisture into said air for absorption by said expanded cellular leaf structure, subsequently cooling said air to contract said structure and seal said absorbed moisture within the cells of said structure, and maintaining said mass in circular motion exclusively about said center during said expansion and contraction to facilitate said absorption and to expel excess moisture from said leaves.

4. The process of casing tobacco leaves which consists in spreading a mass of leaves around and with their main stems substantially radial to a common center and with the butt ends of the stems pointing inwardly, securing said butt ends in said relationship against relative lateral and radial movement within an enclosure containing air, warming said air to expand the cellular structure of said leaves, introducing moisture into said air for absorption by said expanded cellular leaf structure, subsequently cooling said air to contract said structure and seal said absorbed moisture within the cells of said structure, and maintaining said mass in circular motion exclusively about said center at a speed sufficient to cause the free outer ends of the leaves to be extended radially under the actions of centrifugal force set up by said motion of the mass about said center during said expansion and contraction to facilitate said absorption and to expel excess moisture from said leaves.

5. The process of casing tobacco leaves which consists in spreading a mass of leaves around and with their main stems substantially radial to a common center and with the butt ends of the stems pointing inwardly, securing said butt ends in said relationship against relative lateral and radial movement within an enclosure containing air, warming said air to expand the cellular structure of said leaves, introducing moisture into said air for absorption by said expanded cellular leaf structure, subsequently cooling said air to contract said structure and seal said absorbed moisture within the cells of said structure, maintaining said mass in circular motion exclusively about said center during said expansion and contraction and periodically jarring the mass during said circular motion thereof to facilitate said absorption and to expel excess moisture from said leaves.

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