July 26, 1938. E. R. DAHLSTRÖM ET AL 2,124,910

DEVICE FOR DISTRIBUTING TOBACCO MASS

Filed June 18, 1937

FIG. 1.

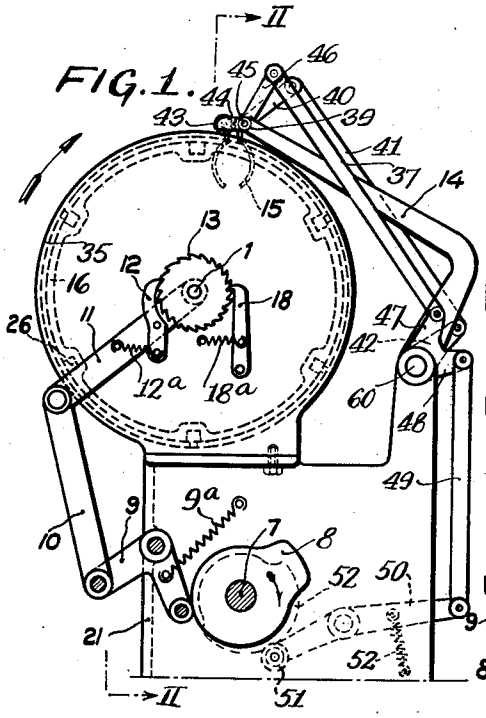


FIG. 2.

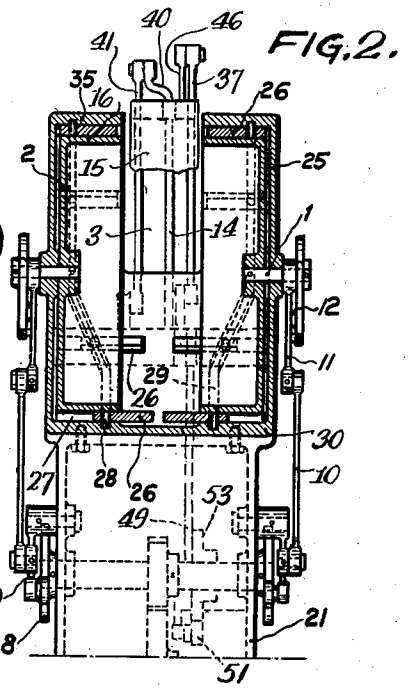


FIG. 3

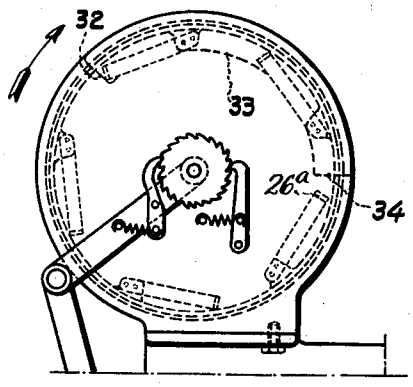
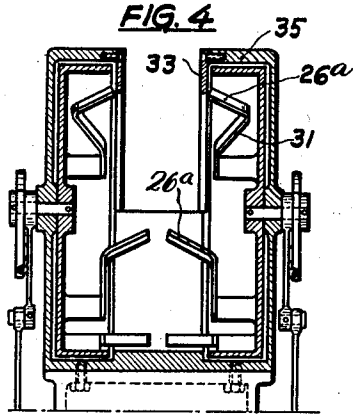


FIG. 4



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DEVICE FOR DISTRIBUTING TOBACCO MASS

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10 Claims. (Cl. 131—39)

This invention relates to a device for distributing tobacco mass, particularly for portioning of tobacco mass in the manufacture of cigar bunches or other tobacco products.

It is an object of the invention to make improved provisions for removal of tobacco mass of a uniform and separable condition from a storage reservoir to be further handled, for instance in the manufacture of cigar fillers.

Another object of the invention is to provide means for continuously presenting the tobacco mass in a storage reservoir in a loose, uniform and readily separable condition to a gripper, so as to ensure that said gripper will fetch required portions of the tobacco mass without unduly compressing said mass in the reservoir.

With these and other objects in view, the invention comprises the combination and arrangement of elements hereinafter fully described and set forth in the claims appended hereto.

In the drawing, in which like characters of reference designate the same or like parts:

Fig. 1 is a side view of an embodiment of the invention;

Fig. 2 is an elevational view, partly in section, taken on the line II—II in Fig. 1, and

Figs. 3 and 4 are views corresponding with Figs. 1 and 2 respectively of another embodiment.

In the embodiment according to Figs. 1 and 2, the space for the tobacco is laterally limited by two discs 2 which are each attached to a horizontal, rotatably journalled shaft 1. Each of the discs 2 has a cylindrical flange 16, and the flanges 16 are separated from each other by a space 3. At the outer side of the discs 2 are immovable, upright side walls 25, in which the shafts 1 are journalled. The discs 2 are each imparted a step-wise rotary movement by a driving mechanism. This driving mechanism has a continuously rotating driving shaft 7 to which is attached a cam disc 8, which actuates the one arm of a bell crank lever 9 which is influenced by a spring 9a, whereas at its other arm is pivotally connected one end of a rod 10. The other end of the rod 10 is pivotally connected to an arm 11, turnable about the shaft 1. The arm 11 carries a pawl 12, which is actuated by a spring 12a and meshes with a ratchet wheel 13 attached to the shaft 1. At the reciprocating movement of the arm 11 together with the pawl 12 the wheel 13 as well as the shaft 1 and the discs 2 are moved step-wise in the direction of the arrow P. During the retractive movement of the lever 11 with the pawl 12 the ratchet wheel 13 and the parts rigidly connected to it are retained by the pawl 18 which is actuated by a spring 18a. The flanges 16 have grooves 27 which are parallel to the axis of rotation of the discs 2 carrying the flanges 16, in which grooves rod shaped impellers 26 are reciprocally movable. For their movement, the parts 26 are provided with pins 28 which project into grooves 29, which are arranged in cylindrical flanges 35 of the immovable walls 25 and the bottom 30 of the housing which is attached to the frame 21.

At the rotation of the discs 2 together with the flanges 16 the impellers 26 are moved in the circumferential direction and, in turn, impel the lower layers of the tobacco mass, until said layers have been moved so far upwards that they fall down and are thereby mixed with the other parts of the tobacco mass. In the lower part of the container the impellers 26 penetrate very deeply into the tobacco mass, so that the mass is very effectively moved upwards and turned over.

Because of the laterally curved shape of the peripheral grooves 29 as shown in Fig. 2, the impellers 26 are at their upward movement displaced longitudinally outwardly, so that the ends of the impellers leave a wide space between themselves.

For the fetching of tobacco mass an arm 14 is used, which arm has a gripper 15 that is introduced into the space 3 between the flanges 35 of the housing and the flanges 16 of the rotating discs 2. The right hand leg of the gripper 15 is secured to an arm 40 and to a pin 39 which is rotatably journalled in the arm 14. An arm 41 is pivoted to the arm 40 and to a bracket 42 projecting from the frame 21. A short arm 43 is secured to the arm 40 and carries a rotatable toothed segment 44 to which is secured the left hand leg of the gripper 15. The toothed segment 44 meshes with another toothed segment 45 which is rotatably mounted on the pin 39 and secured to an arm 46 which is pivoted to another arm 37. The arm 37 is also pivoted to one arm 47 of a double lever which is pivoted on the shaft 60 and the other arm 48 of which is pivoted to a link rod 49. The rod 49 is also pivoted to a lever 50 which carries a roller 51 which under the influence of a spring 52 rides on a cam 53 secured to the shaft 7. The operation of the gripper 15 is not obstructed by the impellers 26 as the impellers in the space 3 are moved out of the sphere of the gripper 15 and the arm 14. After leaving the sphere of the gripper the impellers 26 at their downward movement are again moved inwardly and introduced into the tobacco mass.

The embodiment illustrated in Figs. 3 and 4 differs from the one now described only with regard to the construction of the impellers and the parts serving for their movement. Otherwise, they operate fundamentally in the same manner. In this second embodiment, the impellers **26***a* are directed inwardly and attached to flexible arms **31**, or they constitute a bent part of said arms. Ring sector shaped guide plates **33** serve to control movements of the impellers and are attached to the inner edges of the flanges **35** of the housing. When the impellers **26***a* at their upward movement engage the front edge **32** of the plates **33** they are, on account of the oblique direction of the latter against the resistance of the flexible arm **31**, forced aside outwardly until they reach the position shown at the top of Fig. 4. Then, in their outer position, they slide further on the inner surface of the plates **32** until they reach the rear edge **34** of the same. After passing the edge **34** the impellers **26***a* again yield inwardly into the position shown at the bottom of Fig. 4.

We claim:

1. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, oppositely disposed and spaced apart side walls, lateral impellers arranged between said walls to move a part of the tobacco mass upwards from the bottom of said container, and a distributor operative between said walls to deliver a portion of the tobacco mass from said container, said impellers being movable also outwardly to be retracted from the sphere of said distributor and thereafter to be moved inwardly again.

2. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, oppositely disposed and spaced apart side walls, lateral impellers arranged between said walls to move a part of the tobacco mass upwards from the bottom of said container, and a distributor operative between said walls in the upper part of said container to deliver a portion of the tobacco mass from said container, said impellers being movable also outwardly to be retracted from the sphere of said distributor and thereafter to be moved inwardly again.

3. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, oppositely disposed and spaced apart side walls, lateral impellers arranged between said walls to move a part of the tobacco mass upwards from the bottom of said container, and a distributor operative between said walls to deliver a portion of the tobacco mass from said container, said impellers being positively movable also outwardly to be retracted from the sphere of said distributor and thereafter to be moved inwardly again.

4. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, oppositely disposed and spaced apart side walls, lateral impellers arranged between said walls to move a part of the tobacco mass upwards from the bottom of said container, and a distributor operative between said walls to deliver a portion of the tobacco mass from said container, said impellers being yieldingly movable also outwardly to be retracted from the sphere of said distributor and thereafter to be moved inwardly again.

5. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, oppositely disposed and spaced apart side walls, lateral impellers arranged between said walls to move a part of the tobacco mass upwards from the bottom of said container, means for moving said impellers in an endless path, and a distributor operative between said walls to deliver a portion of the tobacco mass from said container, said impellers having flexible arms connected to said means, said impellers being movable also outwardly to be retracted from the sphere of said distributor and thereafter to be moved inwardly again.

6. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, oppositely disposed and spaced apart side walls, inwardly directed guides arranged within said walls, impellers controlled by said guides and arranged to move a part of the tobacco mass upwards from the bottom of said container, a distributor operative between said walls to deliver a portion of the tobacco mass from said container, and means to move said impellers outwardly along said guides to be retracted from the sphere of said distributor and thereafter to be moved inwardly again.

7. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, oppositely disposed and spaced apart side walls, inwardly directed guides arranged within said walls, impellers controlled by said guides and arranged to move a part of the tobacco mass upwards from the bottom of said container, a distributor operative between said walls to deliver a portion of the tobacco mass from said container, and means to move said impellers outwardly along said guides to be retracted from the sphere of said distributor and thereafter to be moved inwardly again, said means comprising guide ways and driving wheels rotatably arranged between said walls.

8. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, oppositely disposed and spaced apart side walls, inwardly directed guides arranged within said walls, impellers controlled by said guides and arranged to move a part of the tobacco mass upwards from the bottom of said container, a distributor operative between said walls to deliver a portion of the tobacco mass from said container, and means to move said impellers outwardly along said guides to be retracted from the sphere of said distributor and thereafter to be moved inwardly again, said means comprising guide ways and driving wheels rotatably arranged between said walls, said wheels comprising said guides.

9. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, stationary, oppositely disposed and spaced apart side walls having laterally curved, endless guides, rotatable wheels arranged between said walls and having inwardly directed guides, impellers arranged to be guided by said curved guides and said inwardly directed guides, a distributor operative between said walls to deliver a portion of the tobacco mass from said container, and means for rotating said wheels to cause said impellers to move along said curved guides and be moved by said curved guides along said inwardly directed guides, said curved guides being shaped to hold said impellers retracted from the sphere of said distributor and thereafter to move them inwards.

10. In a device for distributing a tobacco mass, a container for a tobacco mass and comprising two upright, stationary, oppositely disposed and spaced apart side walls, rotatable wheels ar-

ranged between said walls, means to rotate said wheels, guiding means, impellers connected to said wheels to yieldingly engage said guiding means, and a distributor operative between said walls to deliver tobacco from said container, said guiding means being shaped so as to hold said impellers retracted from the sphere of said distributor and then to permit them to yield inwards.

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