United States Patent

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[33] **Japan**
[31] **No. 42/101,109**

[54] **CUT TOBACCO FEEDER**
4 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** **131/109,** 131/84, 198/57
[51] **Int. Cl.** **A24c 5/18;** B65g 47/18
[50] **Field of Search** ..... 198/47, 52–54, 56–57; 222/55; 131/84 (C), 109

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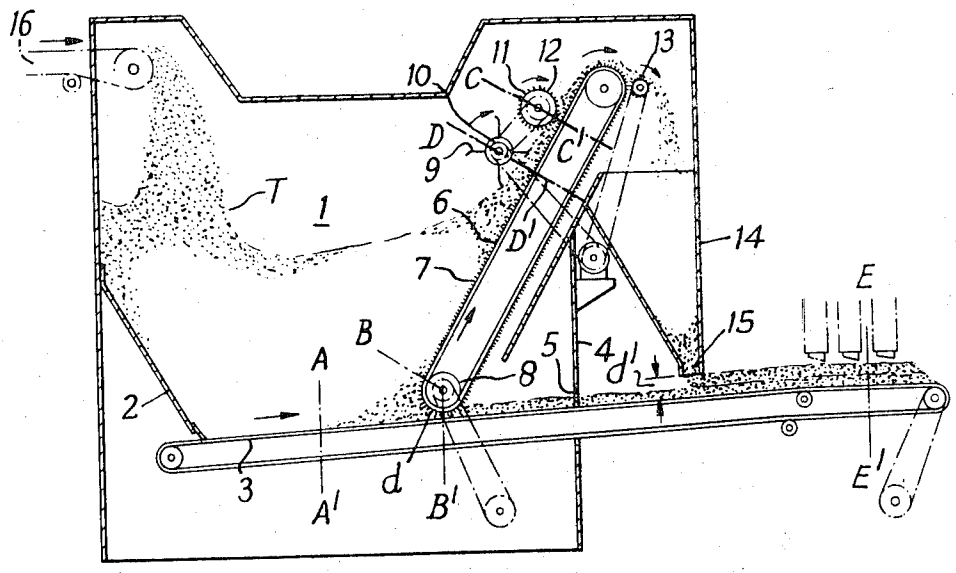
ABSTRACT: A cut tobacco feeder for feeding an even layer of tobacco onto a conveyor band comprises a first conveyor band forming the bottom of a storage chamber, an inclined second band carrying needles on its surface and running upwards from the first band, the first band carrying a first layer of tobacco under the lower end of the second band, at least one levelling roller above the upper part of the second band, and a pick-off roller adjacent the top of the band, whereby tobacco picked off from the second band falls on top of the said first layer to form a second layer of tobacco on the first band.



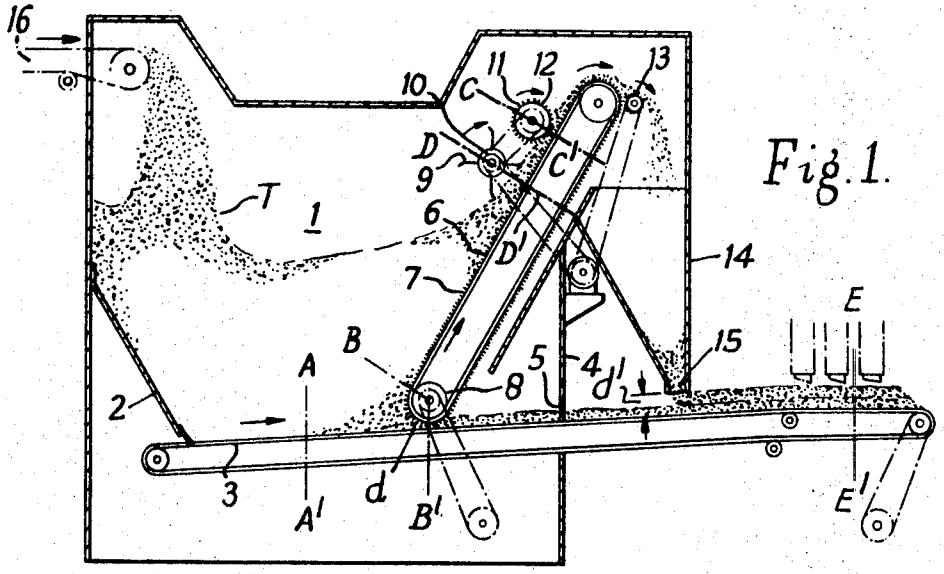


Fig. 1.

Fig. 2.

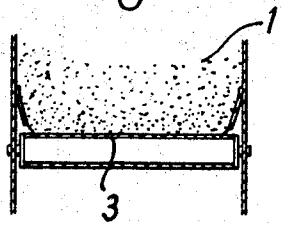


Fig. 3

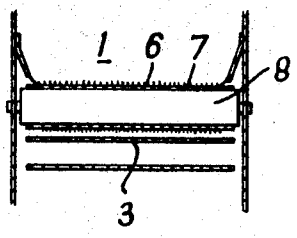


Fig. 4.

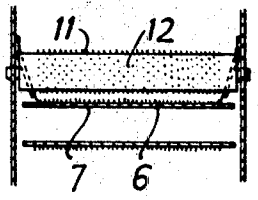


Fig. 5.

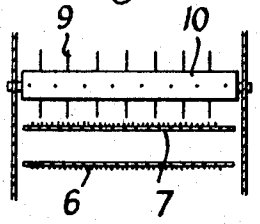
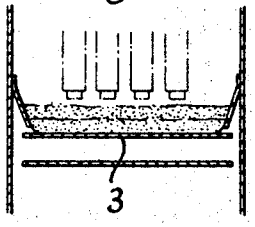


Fig. 6.



CUT TOBACCO FEEDER

This invention relates to a cut tobacco feeder for feeding an even layer of tobacco onto a conveyor band.

In the pneumatic distribution system described in Japanese Utility Model Application No. 101110/67, a conveyor band carrying cut tobacco runs underneath the open ends of collector conduits to which suction can be applied to draw tobacco from the band into the collector conduits. It is desirable for even and reliable distribution of the tobacco that the layer of tobacco on the conveyor band is even in depth and free from large lumps.

According to the invention there is provided a cut tobacco feeder for feeding an even layer of tobacco onto a conveyor band, comprising a first conveyor band forming the bottom of storage chamber and so running under the lower end of an inclined second conveyor band which runs upwards from the first band and forms one side of the chamber that, in use, a first layer of tobacco remains on the first band, the second band having needles on its surface, at least one levelling roller positioned above the upper part of the second band to level the tobacco thereon, and a roller adjacent the top of the second band for picking off tobacco therefrom, so as to cause the picked-off tobacco to fall on top of the said first layer to form a second layer of tobacco on the first band.

One embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

FIG. 1 is a side sectional view of one cut tobacco feeder embodying the invention; and

FIGS. 2 to 6 are sectional views of the feeder of FIG. 1 taken along the lines A–A′ to E–E′ respectively.

The feeder illustrated has a storage chamber **1** which receives tobacco (T) from an inlet conveyor band **16**. An inclined partition plate **2** directs tobacco onto a conveyor band **3** at the bottom of the storage chamber **1**. The band **3** passes out of the storage chamber **1** under the lower end of another conveyor band **7** and thence through an opening **5** in the wall **4**.

The conveyor band **7** is inclined with respect to the lower band **3** and runs upwardly from the lower band. The tobacco in the chamber **1** lies between the plate **2** and the inclined band **7** on the lower band **3**, and thus the inclined band forms one side of the storage chamber. The lower roller **8** carrying the inclined band **7** is positioned a predetermined distance *d* above the lower band **3** thus allowing a layer of tobacco of thickness *d* to pass through the opening **5** on the band **3**.

The conveyor band **7** has a large number of needles **6** on its surface and thus carries tobacco upwards and under a so-called thrusting roller **10** (see FIGS. **1** and **5**) which has spikes **9** and rotates against the flow of tobacco on the band **7**, thus tending to level the tobacco on the band and breaking up any large lumps. Above the thrusting roller **10** is a levelling roller **11** (see FIGS. **1** and **4**) carrying needles **12**.

When the tobacco on the band **7** reaches the upper roller and begins to move downwards it is picked off the band by a so-called brush roller **13**. The picked-off tobacco falls into a chute **14** having an outlet **15** which is positioned a distance *d′* above the lower band **3**, where *d′* is greater than *d*. Thus a second layer of tobacco is laid on the layer already on the band **3** forming a double layer of even thickness and of a sufficient thickness to be easily sucked up into the collector conduits, when suction is applied. The collector conduits may be of the type described in Japanese Utility Model Application No. 101110/67.

The needles **6** on the inclined conveyor band **7** tend to disintegrate any lumps which may try to pass under the roller **8** on the lower band **3**. The thrusting roller **10** also acts to break up any lumps which are carried upwards by the inclined band **7**.

We claim:

1. A cut tobacco feeder for feeding an even layer of tobacco onto a conveyor band, said feeder comprising:

a storage chamber;

a first conveyor band forming the bottom of said storage chamber;

an inclined second conveyor band running upwards from said first band, said first band carrying a first layer of tobacco under the lower end of said second band;

needles on the surface of said second band;

at least one levelling roller positioned above the upper part of said second band; and

a roller adjacent the top of said second band for picking off tobacco therefrom, whereby the picked-off tobacco falls on top of said first layer to form a second layer of tobacco on said first band.

2. A feeder according to claim **1**, further comprising a chute positioned beneath said pick-off roller to receive said picked-off tobacco and having a discharge opening spaced a distance above said first conveyor band which is greater than the distance between said lower end of said second band and said first band.

3. A feeder according to claim **1**, having one levelling roller positioned above the upper part of said second band, and a spiked thrusting roller positioned below said levelling roller.

4. A feeder according to claim **2**, wherein above said upper part of said second band there is one levelling roller and a spiked thrusting roller therebelow.