Feb. 19, 1935. V. LORENTZ 1,991,757

TOBACCO CUTTING DEVICE

Original Filed July 28, 1931

Fig. 1

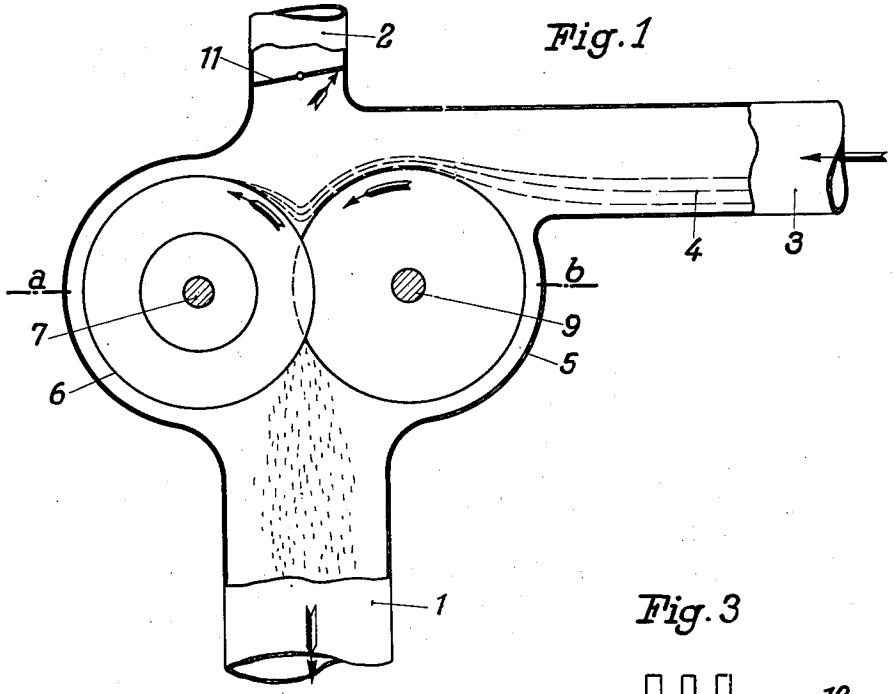


Fig. 2
a-b

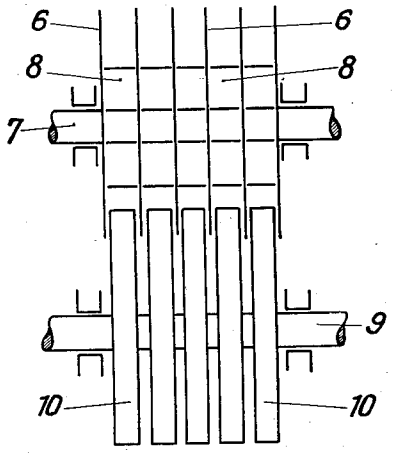
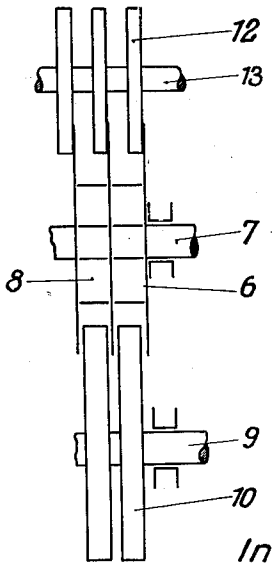


Fig. 3



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TOBACCO CUTTING DEVICE

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1 Claim. (Cl. 146—117)

The present invention relates to a device for cutting tobacco leaves.

Devices employing polygonal or multibladed cutting means are known already, but all of them suffer from the drawback that their cutting edges wear off and get dull rapidly on account of the tobacco and the impurities contained therein. Furthermore, the existing devices of this class require special conveying appliances for the tobacco, which involves a complex machine design and higher consumption of power.

The present invention eliminates these drawbacks completely by disposing the cutting device within a pneumatic tobacco conveyor, so that the tobacco is fed to the knives without a special conveyor, then passed through the cutting zone and finally pneumatically removed when cut. The air current flowing through the conveyor piping presses the tobacco against the cutting edges to insure perfect feeding. Feeding the tobacco leaves and removing the cut tobacco from the knives by hand or mechanical means can be dispensed with.

The construction of the knives is immaterial for the purpose in view. It is, for example, possible to form the cutting device from strip steel knives and guide the steel strips over two or more rolls. Particularly advantageous are rotary knives, such as circular knives or segmental or sickle-shaped knives. It is unimportant whether the cutting knives rotate or are reciprocated by an eccentric drive.

To facilitate the supply of tobacco to the cutting zone, the air current moving the tobacco leaves may be supported by a mechanical feeding device comprising, for example, a number of carrier plates between which the cutting knives engage, the tobacco being placed by the air current on these plates and cut by the knives during the rotation of the plates.

According to the invention, the edges of the cutting device cooperate during the rotation of the knives simultaneously with grinding devices to prevent the stopping of the cutting device during operation for grinding which is thus effected while the machine is working. Grinding may be done either by special grinding devices or the tobacco feeding device may be constructed so as to act as grinder.

The invention further provides the arrangement of an additional cutting device in lieu of the mechanical feeding device, the second cutting device engaging with its knives the interstices between the knives of the first cutting device. The various cutting or feeding devices consist preferably of individual units arranged side by side. By adjusting the relative spacing of the units the cutting width of the tobacco can be regulated within wide limits.

The discharge of the pneumatic conveyor piping contains also a tobacco separator of known type for separating the cut tobacco from the air and dust.

One form of the invention is illustrated diagrammatically in the accompanying drawing, in which Figure 1 is a longitudinal section of a tobacco cutting device; Fig. 2, a section *a—b*, of Fig. 1; and Fig. 3, a similar section of a modified form.

In the construction shown suction air is used which is drawn in through a pipe 1 from a ventilator. The pipe 1 has the suction connections 2 and 3, the connection 3 drawing in the tobacco leaves 4. The pipes 1, 2 and 3 open into the casing 5, in which the knives 6 are disposed on the shaft 7 suitably rotated in the direction of the arrow with the knives 6. Between the various knives the plates 8 are arranged to keep the knives 6 at a distance from one another.

As indicated in the drawing, the rotary knives 6 have only one endless edge. The knives 6 are made of steel. If made of strip steel they have a circular or bandlike form. An additional shaft 9 in the casing 5 carries a driver consisting of the rotary plates 10 and being turned with the shaft 9 in the direction of the arrow shown in Fig. 1. 11 is a throttle valve within the suction connection 2, by means of which suction may be regulated.

The cutting edges 6 cooperate with the grinding discs 12 on the shaft 13.

The device functions as follows:

The tobacco leaves are drawn in by suction air and pressed against the knives 6 by the air current. As these knives 6 rotate rapidly, the tobacco leaves will be cut up and pass in this condition into the pipe 1 containing a separator (not shown) for the cut tobacco. The action of the air current is enhanced by the carrier plates 10. Several cutting discs 6 may be provided so as to engage with one another, the plates 10 being then replaced by the cutting knives 6. The carrier plates 10 may act as grinding discs and thus take over the function of the discs 12. The distance of the plates 6 from one another and thereby the cutting width may be varied at will by exchanging the intermediate discs 8.

The device affords the advantage of strictly automatic feeding, delivering and cutting of the tobacco leaves. Special stripper devices may be

provided to prevent uncut tobacco from entering the pipe 1.

I claim:—

A pneumatic device for conveying tobacco, comprising a casing, a cutting device in said casing comprising a plurality of rotary circular knives, a conveyor pipe for the tobacco leaves leading to said casing, a second conveyor pipe for the cut tobacco, pneumatic means for conveying the tobacco through the pipes and cutting device, a feeding device comprising spaced rotary plates engaging between the knives and rotating in the same direction as the cutting knives for supplementing the action of the conveying air current during the feeding of the tobacco.

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