

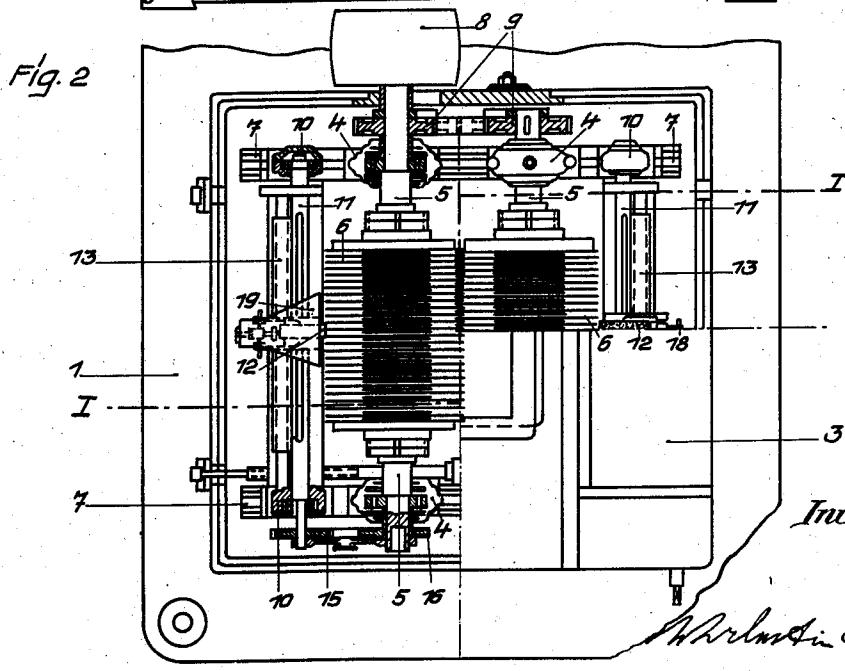
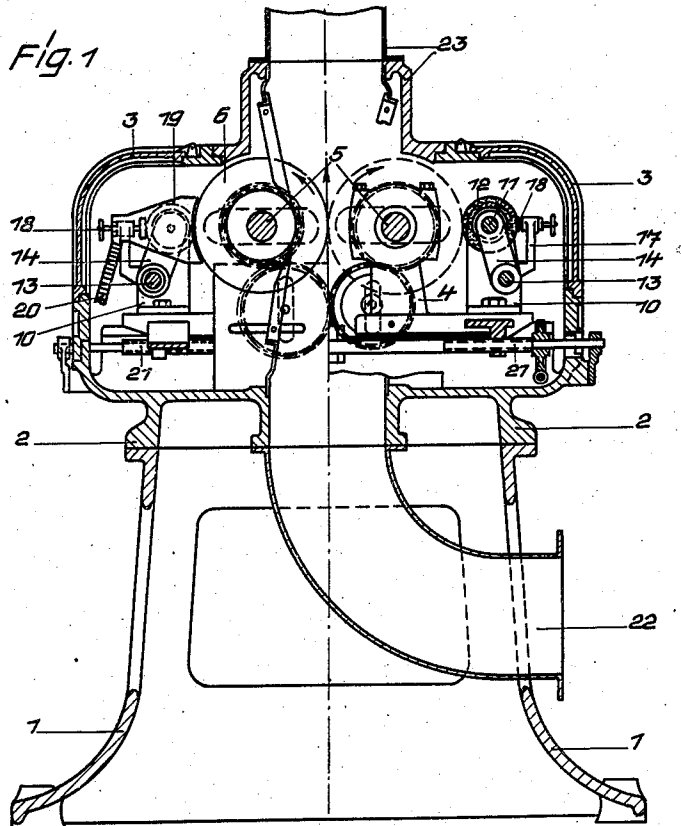
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TOBACCO CUTTING DEVICE

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TOBACCO CUTTING DEVICE

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This invention relates to a tobacco cutting device with rotating knives.

Cutting devices are known already, in which a number of rotary circular knives are combined to form a cutter block or cylinder disposed on suitable carriers, the knives of two adjacent cylinders engaging each other for cutting. The tobacco entering between the knives is cut up into strips, which involves considerable wear on the part of the knives, particularly at their circumference and edges. In the known machines the cutter blocks had therefore to be exchanged from time to time and reground outside the machine.

The invention eliminates this defect by causing the knives to cooperate during operation with grinding means to sharpen the knives at their superficies. In each tobacco cutting machine grinding devices are preferably disposed which can be arranged at will relative to the knives in such a way that the latter retain during grinding their motion required for cutting, but simultaneously cooperate with the grinding means. The supply of tobacco is preferably interrupted during grinding to prevent contamination of the tobacco by the grinding dust.

According to the invention, the knives or knife carriers and the grinding means are adjustable relative to one another so as to make allowance for the wear of the knives during cutting or grinding.

The grinding devices may have a special drive or be driven from the knives. To insure uniform grinding of the cutter cylinders over their entire length, the grinding means carry out a to and fro motion past the knives and are controlled either by a reversing spindle or gear. Furthermore, each grinding device may possess a dressing device for the grinding means.

A further advantage afforded by the invention is that the grinding means cooperating with the cutter blocks may be disposed within range of a piping passing through the casing to remove emery or metal dust. For this purpose the grinding means is surrounded by a suitable covering, such as a hood or the like, which extends up to the grinding point and at its other end is connected with a preferably flexible air discharge piping.

One form of the invention is illustrated in the accompanying drawing, in which Fig. 1 is a section of a cutting device on the lines I—I, of Fig. 2; and Fig. 2, a horizontal section of the device with part of the covering left standing.

Referring to the drawing, the frame 1 carries the base 2 of the casing receiving the cutting

members. The base 2 is covered on top by the detachable covers 3. Inside the casing on the base 2 pedestal bearings 4 are provided for receiving the cutter shafts 5 on which a plurality of circular knives 6 are disposed one behind the other with suitable interposed shims, and fixed thereto so as to produce a continuous knife carrier. The members 4 are slidably arranged transversely to the knife axis on the guides 7 to permit adjustment of the knife cylinders and vary the engagement of the individual cylinders. The cutter cylinders are driven from a pulley 8 acting upon one shaft 5 and, by suitable intermediate gears, upon the adjacent knife shaft.

To the side of the members 4 on the guides 7 pedestal bearings 10 are arranged which carry the shafts 11 for the grinding discs 12. Below the shafts 11 reversing spindles 13 are provided on which the fork 14 surrounding the grinding means 12 is guided. The drive of the spindles 11 is effected from the cutter shaft 5 by means of suitable intermediate gears 15, 16 which may be interconnected also.

The bearing member 14 of the grinding discs 12 carries on an arm 17 an adjustable dressing member 18 for the grinding discs. The bearing member 14 further carries a protective hood 19 which surrounds the dressing member 18 and is connected at the end with a flexible piping 20.

In the construction shown in Figs. 1 and 2 only the left-hand pedestal bearings are provided with such a hood, the hoods of the other bearings having been omitted for the sake of clearness. The piping 20 leads to a ventilator, not shown, which draws off the air from the grinding point and thus removes the emery and metal dust produced by grinding.

The grinding discs are adjusted relative to the knives by suitable spindles 21 disposed below the knives or grinding means and operated from without.

To the casing 2, 3 conduits 22 and 23 are connected for conveying the tobacco to the rotary knives and away from them, the piping 22 serving as supplying and the piping 23 as discharging conduit, or vice versa, according to the adjustment of the machine. The leaves are thus carried by the conveying air current to the cutting point and then carried away again. The invention can be applied also to devices without pneumatic feeding of the tobacco to be cut.

The grinding means are normally adjusted so as to be able to contact with the knives 6, and in this position the cutting takes place. If the knives are to be ground, the supply of tobacco

is interrupted and the grinding means are turned towards the knives which retain their cutting motion, whereupon by means of the spindles 11 and 13 the grinding means are driven correspondingly which move to and fro past the knives and grind off a certain amount, the dust being removed by the conduits 19, 20.

I claim:—

1. A tobacco cutting device, comprising a frame, 10 rotary circular knives arranged in the frame and alternately engaging one another, grinding means

for the circular knives, means cooperating with the grinding means for drawing off grinding dust and a drive for causing to and fro motion of the grinding means along the knives.

2. A device according to claim 1 wherein the means for drawing off grinding dust are formed of a ventilator, a hood surrounding the grinding means and a suction piping connecting the hood with the ventilator. 5

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