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[54] METHOD AND APPARATUS FOR PRODUCING BUNCHES, CIGARS OR CIGARETTES

4 Claims, 2 Drawing Figs.

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[51] Int. Cl. A24c 1/26, A24c 5/18
[50] Field of Search 131/62, 64, 66A, 66, 84, 84A, 84B, 84C, 82A

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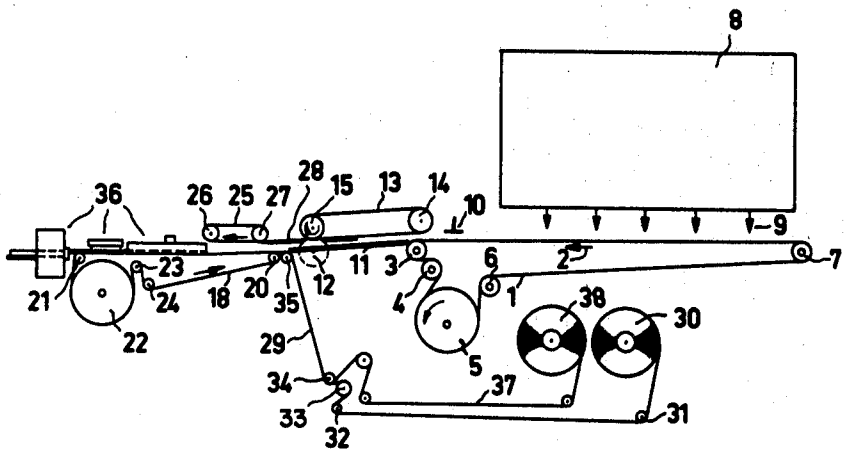
ABSTRACT: A method and a machine for producing a tobacco rod used in the manufacture of cigars, cigar bunches or cigarettes includes a hopper for tobacco to be used in the filler thereof, adapted to feed shredded tobacco or the like onto a filler conveyor whose width is twice that needed to produce a single rod. Excess tobacco is included in the filler stream as formed and the excess is removed by a rotating trimming knife located above and adjacent to the same. A circular knife rotating on a horizontal axis is placed with the plane of the knife in the longitudinal axis of the filler stream at the downstream end thereof for cutting the same into two equal rod streams which are then separated slightly from each other, wrapped into a rod and finally formed or cut into individual units.



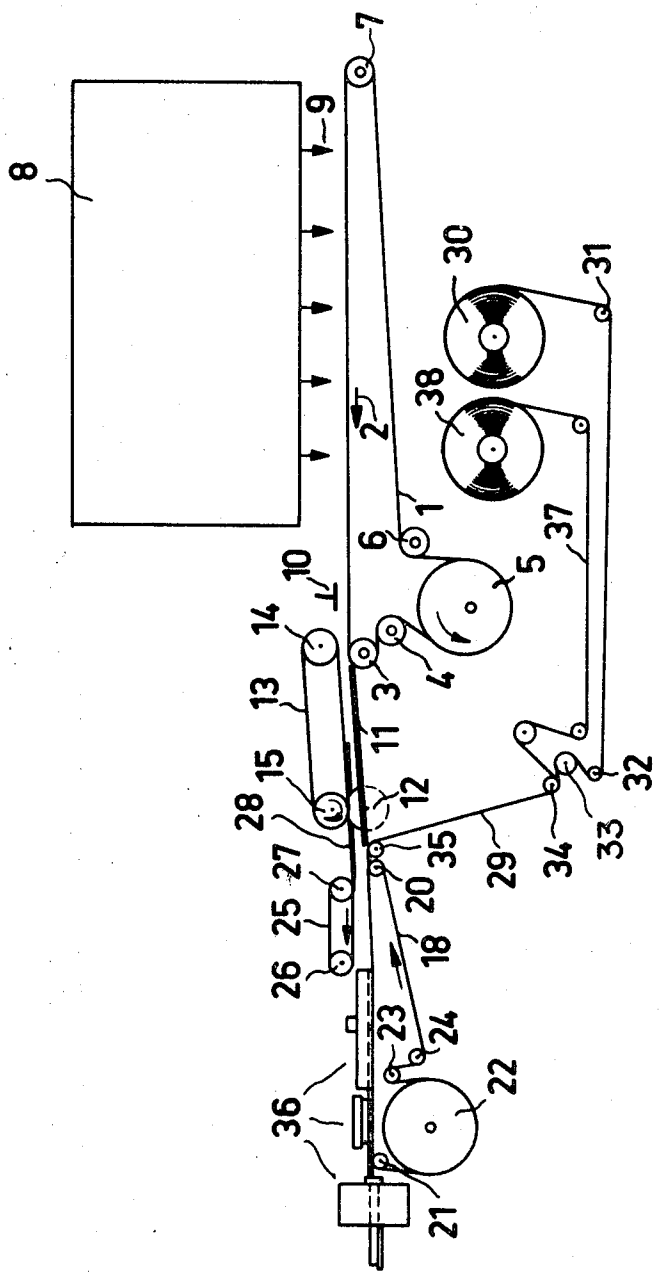

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Fig.1

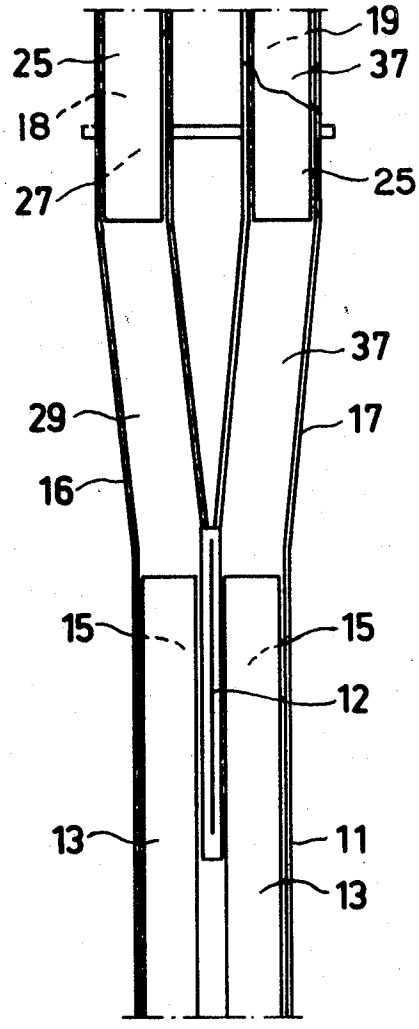

Fig. 2

METHOD AND APPARATUS FOR PRODUCING BUNCHES, CIGARS OR CIGARETTES

The invention relates to a method and a rod-making machine for producing cigarettes, bunches or cigars, comprising a tobacco distributing means for effecting a flow of tobacco on a conveyor belt and means for forming a rod of tobacco from the flow and enclosing the rod in an outer wrapper of paper, reconstituted tobacco strip or the like.

One of the greatest problems in rod-making machines is the difficulty of providing a tobacco distributor which discharges the tobacco evenly and precisely to the belt that conveys the flow of tobacco to the machine's folding unit. Distributors in use at present certainly operate satisfactorily, but it is difficult to increase the amount of tobacco discharged per unit of time without the problem of unevenly distributed tobacco arising. Attempts have been made to solve the problem of unevenness in the tobacco flow, which is caused to a great extent by attempts to increase the speed of the machine, by adding a surplus amount of tobacco to the first flow formed and then cutting off the peaks in the resulting uneven flow, but despite this it has not been possible to increase the capacity of the rod-making machines proportionately to the cost of the supplementary equipment.

The purpose of the invention is to produce a rod-making machine with a single tobacco distributor, which machine has a capacity which is a multiple of the capacity of a conventional rod-making machine provided with a corresponding distributor.

The invention is based on the discovery that the difficulty in increasing the amount of tobacco discharged from a tobacco distributor per unit of time is not caused by the width of the flow of tobacco produced by the distributor but by the thickness of the flow. As it is possible with a conventional distributor to obtain a flow of tobacco with a substantially constant thickness, regardless of the width of the flow, the capacity of the machine can be increased many times by increasing the width of the flow so that a plurality of rods may be formed and directed to separate units, to be enclosed in a cigarette paper or the like.

In the method of the invention, a rod-like product such as a cigarette, cigar bunch or cigar rod is produced by using a tobacco distributing means that emits a flow of tobacco to a conveyor belt. The method includes forming the width of the tobacco flow as a multiple of the width of the tobacco rod from which the rod product is produced, then the flow of tobacco is divided in its longitudinal direction into tobacco rods of said width and each such tobacco rod is shaped and enclosed in a wrapper.

If the flow of tobacco is thus made so wide that two rods can be cut out, the capacity of the rod-making machine will be doubled without changing the speed of the conveyor belt carrying the tobacco flow, by providing the machine with double rod-forming and sealing units.

A rod-making machine according to the invention, the essential characteristics of which can be seen from the claims, will thus have a capacity which is substantially greater than the capacity of conventional machines without necessitating an increase in the speed of operation of the various machine stations and without any problems arising.

The invention is described below with reference to a machine chosen by way of example and illustrated in the enclosed drawings in which:

FIG. 1 is a schematic side view of a machine constructed in accordance with the present invention; and

FIG. 2 is a partial plan view of the filler stream cutting, pressing and conveying units shown in FIG. 1, a small portion thereof being broken away for clarity.

FIG. 1 shows a tobacco conveyor belt 1 which is driven in the direction of the arrow 2 and guided over rollers 3, 4, 5, 6 and 7. The roller 5 is driven in the direction indicated by the arrow. A tobacco distributor 8 scatters tobacco onto the belt 1 as indicated by the arrows 9 and forms a flow of tobacco with a height greater than that required for the further treatment of the tobacco. The excess is cut away in a known manner by a rotating knife 10. In certain cases, however, this knife can be dispensed with. At the outflow end of the tobacco belt 1 is a table 11 on which the flow of tobacco is advanced towards a rotating knife 12. Above the table 11 is a pair of parallel endless, divided belts 13 passing over two rollers 14 and two rollers 15, of which the rollers 15 are driven in the direction shown by an arrow. The belts 13 press the flow of tobacco against the table 11 and convey the tobacco towards the knife 12.

The stream of tobacco produced by the distributor 8 to the belt 1 has a width in the illustrative embodiment corresponding to two tobacco rods, which are provided with wrappers in a manner stated below. As can best be seen from FIG. 2, the knife 12, which has a horizontal axis of rotation, lies in the centre line of the table 11 and divides the tobacco flow on the table 11 into two equal parts or rods, of which one is directed to a path 16 and the other to a path 17 from where the tobacco rods are each moved across to belts 18 and 19 respectively. Only the belt 18 and the rod-shaping unit operating in conjunction therewith are shown in FIG. 1, but as belt 19 is identical to belt 18 and operates in conjunction with exactly the same unit, a description of belt 18 and the equipment operating in conjunction with it is sufficient for an understanding of the invention and the machine.

The belt 18, as with belt 19, runs in the direction shown by the arrow, over rollers 20, 21, 22, 23 and 24, of which the roller 22 is driven by a drive means which is not shown. Above the belt 18 there is a driven pressing belt 25 running in the direction indicated by an arrow over two rollers 26 and 27, of which the roller 27 is driven. The rear end of the press belt 25 is connected to a press table 28 which presses the stream of tobacco against the table 11 during cutting. A strip of paper, reconstituted tobacco or the like 29 is led from a bobbin 30 across guide rollers 31, 32, 33, 34, 35 to the belt 18 and one of the tobacco rods that have been formed is directed by the press belt 25 working in conjunction with the belt 18, out onto the strip 29 and further to rod-shaping devices of conventional type.

A further strip of paper or the like 37 is shown in FIG. 1, this being drawn from a bobbin 38 and forming a wrapper for the tobacco rod on the form belt 19.

The invention is obviously not limited to the specific type of rod-making machine shown in FIG. 1, but can also be applied to other types with the modifications that such machines call for. The rotating circular knife 12 which is shown can of course also be replaced by a different cutting device, such as the blade of a high-speed band saw, or the like.

I claim:

1. A method of producing a tobacco rod product, such as a cigarette, cigar bunch or cigar rod, from tobacco rods, characterized by: discharging a flow of tobacco in a multiple of the width of the tobacco rod from which the rod product is made, dividing the flow of tobacco in its longitudinal direction into tobacco rods of said width, and shaping and enclosing each such tobacco rod in a wrapper.

2. A method as claimed in claim 1, characterized in that the width of the flow of tobacco is made twice as wide as the tobacco rod required to produce the rod product.

3. A machine for making rods for a tobacco rod product such as a cigarette, cigar bunch or cigar rod, comprising: a tobacco distributing means for distributing a flow of tobacco onto a conveyor belt, said tobacco flow having a width which is a multiple of the width of the tobacco rod required for the rod product, cutting means for dividing the flow of tobacco in its longitudinal direction into separate tobacco rods of said width, members for directing each tobacco rod in a separate path, means on each of said paths to shape and enclose the tobacco rod in a wrapper.

4. A rod-making machine as set forth in claim 3 wherein the cutting means consists of a rotating circular knife with a horizontal axis of rotation.