This invention relates to the feeding of tobacco to cigarette making machines of the continuous rod type.

It is the practice in tobacco feeds of the character in question to provide a carpet or mat of tobacco on a feed drum or belt having a carded surface from which it is picked off and showered in the trough of the machine by a fast rotating picker roller. In the vicinity of the picking of a comb member is provided which acts to press the tobacco into the carding with a view to controlling the tobacco on the drum or belt. It is found, however, that the action of the picker is very erratic as it is impossible to bring the comb teeth right up to the point where the plus of the picker act so that a zone of the tobacco mat is formed which is uncontrolled. Thus instead of picking off a portion of tobacco of uniform extent circumferentially of the drum and throughout the width of the drum, the picker tears or breaks away the tobacco in varying amounts throughout the width of the feed.

An object of the invention is to provide an improved method of feeding the tobacco whereby successive amounts delivered from the feed drum or like element are maintained substantially uniform.

According to the invention a carpet or mat of tobacco is fed to a severing position where severing means are provided adapted intermittently to sever a predetermined amount from the leading edge of the carpet of tobacco, said severed portions being delivered successively to the trough of the cigarette making machine.

The severance may be effected by a knife reciprocating across the path of the feed of the carpet.

The tobacco severed from the carpet may be delivered to means located in the chute of the machine and adapted to disintegrate the severed portion and shower it into the trough.

The carpet may be delivered to the severing means by a rotary drum.

Further features of the invention will hereinafter described.

In the accompanying drawings:

Figure 1 is a side elevation of the improved tobacco feeding apparatus;

Figure 2 is a front elevation of a modified form;

Figure 3 is a view of an auxiliary apparatus;

Figure 4 is an end elevation of the mechanism shown in Figure 2, and also illustrates driving means for various working parts;

Figure 5 is a view in side elevation of a worm member; and

Figure 6 is a similar view of a paddle wheel.

In carrying the invention into effect according to one convenient mode, a drum 10 is provided mounted to rotate upon a horizontal axis. The drum is located below a main feed drum 11 with which a tobacco hopper or supply is associated and is adapted to receive a shower of tobacco from said feed drum by means of a picker roll 12, the feed drum 11 being provided with carding 13 in known manner. The tobacco delivered by the picker roll 12 forms a carpet or mat 14 upon the drum 10 the surface of which is plain and may conveniently be formed of hard wood or have a hard wood periphery.

The carpet or mat of tobacco 14 on the wooden surface drum is fed by the rotary movement of the drum to a severing position which may be located at or somewhat above the horizontal plane of the axis of the drum.

The drum 10 may be continuously or intermittently rotated.

A severing knife 15 is provided which is adapted to be reciprocated in a plane at right-angles to the surface of the drum whereby sections of the carpet of tobacco 14 are successively severed from the leading edge of the carpet. The drum provides a hardened surface against which the knife cuts.

The severed sections fall into a chute 16 and onto suitable means adapted to disentangle the tobacco and cause it to fall as a shower into the trough 20 of the cigarette making machine.

The disentangling means may comprise a rotating worm member 17 (Figure 5) or a paddle wheel 117 (see Figure 6), or a similar device of known or other suitable construction. The worm if such be used may impart a movement to the tobacco having a component in the direction of the movement of the cigarette rod.

Co-operating with the upper surface of the knife 15 is an abutment member 18 which operates to prevent the carpet being pulled off the drum 10 as the knife recedes after a cut. Rising from the abutment a cover shield 19 may be provided curved to conform to the shape of the carpet drum 10 and spaced therefrom to provide a passage for the carpet of tobacco, the shield aiding in retaining the carpet upon the surface of the drum.

The knife 15 extends throughout the length of the drum 10 which may vary according to the
speed of the operation of the cigarette forming mechanism.

The speed of rotation of the drum 10 and rate of reciprocation of the knife 15 may be adjustable so that the desired quantity of tobacco is delivered to the trough 20.

Suitable mechanism is provided for driving the parts in the desired manner, such as that hereinafter described with particular reference to Figs. 2 and 4.

According to a modified arrangement, see Figure 2, means may be provided to form a series of narrow spaced carpets on the carpet drum 10 in which case instead of a single severing knife extending through the width of the drum, a series of short knives 34 corresponding to the position of the narrow carpets is provided.

The narrow carpets 21 may be formed by the provision of a series of partitions 22 associated with the picker roll 12 by which the tobacco is showered from the main feed drum onto the carpet drum.

The partitions 22 are located in the space between the picker roll, carded drum and carpet drum and are shaped to the curvatures thereof, as seen axially. Looking in a direction at right angles to the axes of the drums, each partition 22 increases in cross section as it approaches the carpet drum to form a diverging end 23, thus providing a means for delivering tobacco to the drum, to pass between the partitions and form a series of parallel mats on the drum, and severing means comprising a knife reciprocating across the mats to sever sections from the leading edge of the mats for delivery into the trough of the cigarette making machine.

3. Apparatus for feeding tobacco to the trough of a cigarette making machine, comprising a rotary drum having a plain surface, means for delivering tobacco to the drum to form a mat thereon, severing means comprising a knife reciprocating across the mat to sever sections from the leading edge of the mat for delivery into the trough of the cigarette making machine.

Apparatus for feeding tobacco to the trough of a cigarette making machine, comprising a rotary drum having a plain surface, means for delivering tobacco to the drum to form a mat thereon, severing means comprising a knife reciprocating across the mat to sever sections from the leading edge of the mat for delivery into the trough of the cigarette making machine.

4. In the feeding of tobacco to the trough of a continuous cigarette rod mechanism, feeding a mat of shredded filler tobacco in an arcuate path to severing means operating intermittently in a direction substantially normal to the curve of said path to sever sections from the leading end of the mat, disintegrating said severed sections, commingling loosely the shredded filler tobacco constituted thereby, and delivering the commingled product of such sections progressively to the trough of the cigarette rod mechanism.

5. Apparatus for feeding tobacco to the trough of a cigarette making machine, comprising a traveling surface movable in a curved path, means for delivering shredded tobacco to said surface to form a mat thereon whereby said mat is fed in said curved path, severing means operating intermittently in a direction substantially normal to the curve of said path to sever sections from the leading edge of the mat, and disentangling means arranged to receive the severed sections from said severing means and disintegrate said sections and deliver them to the trough of the cigarette making machine.

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5