Oct. 28, 1924. 1,512,929

M. HIMOFF

TOBACCO CUTTING MACHINE

Filed Dec. 21, 1921 4 Sheets-Sheet 1

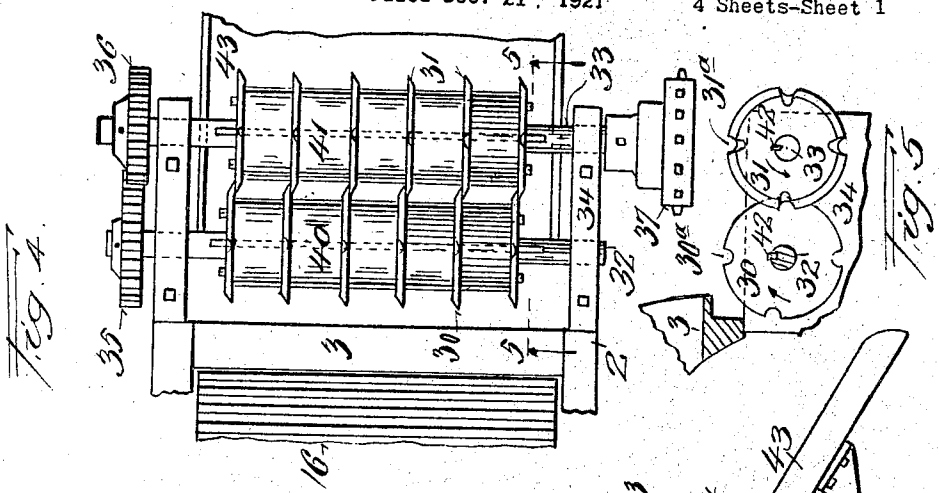


Fig. 4.

Fig. 5.

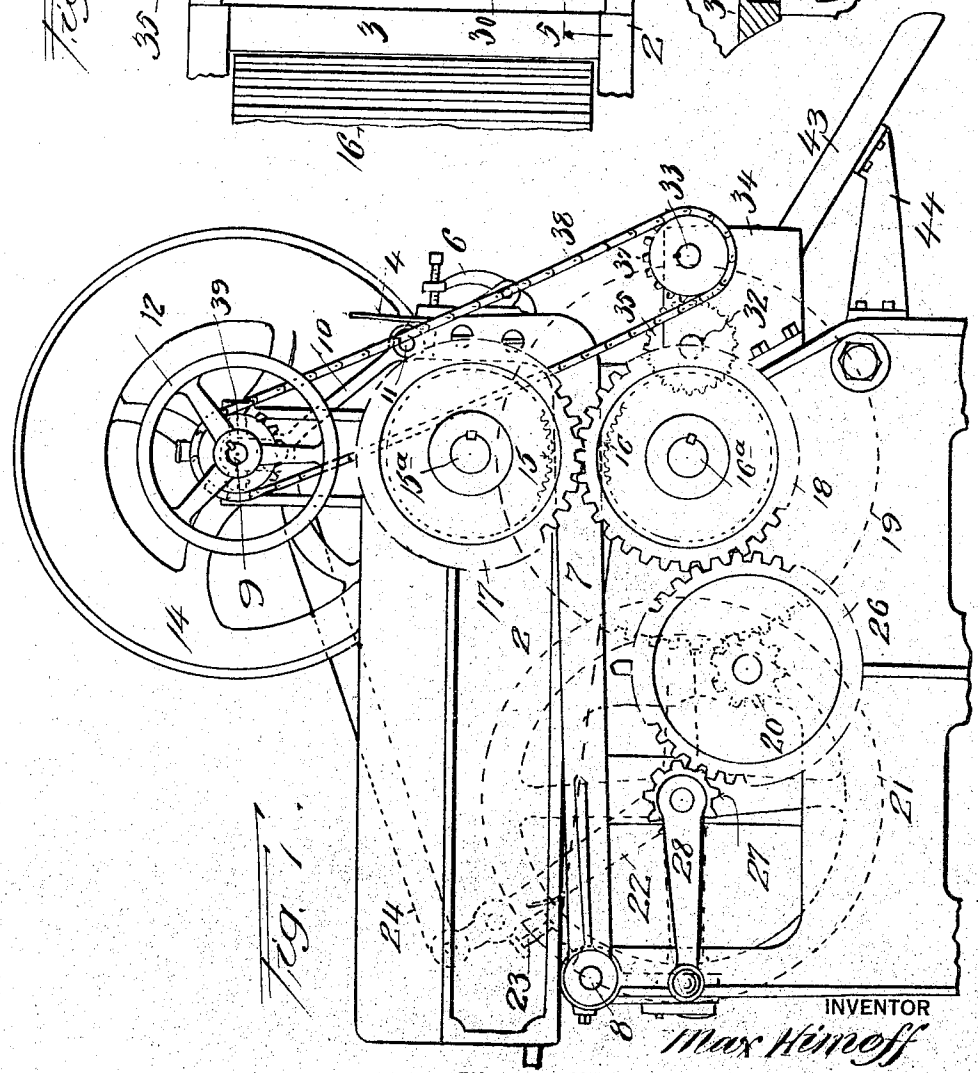


Fig. 1.

INVENTOR

Max Himoff

BY His ATTORNEY

T. E. Bourne

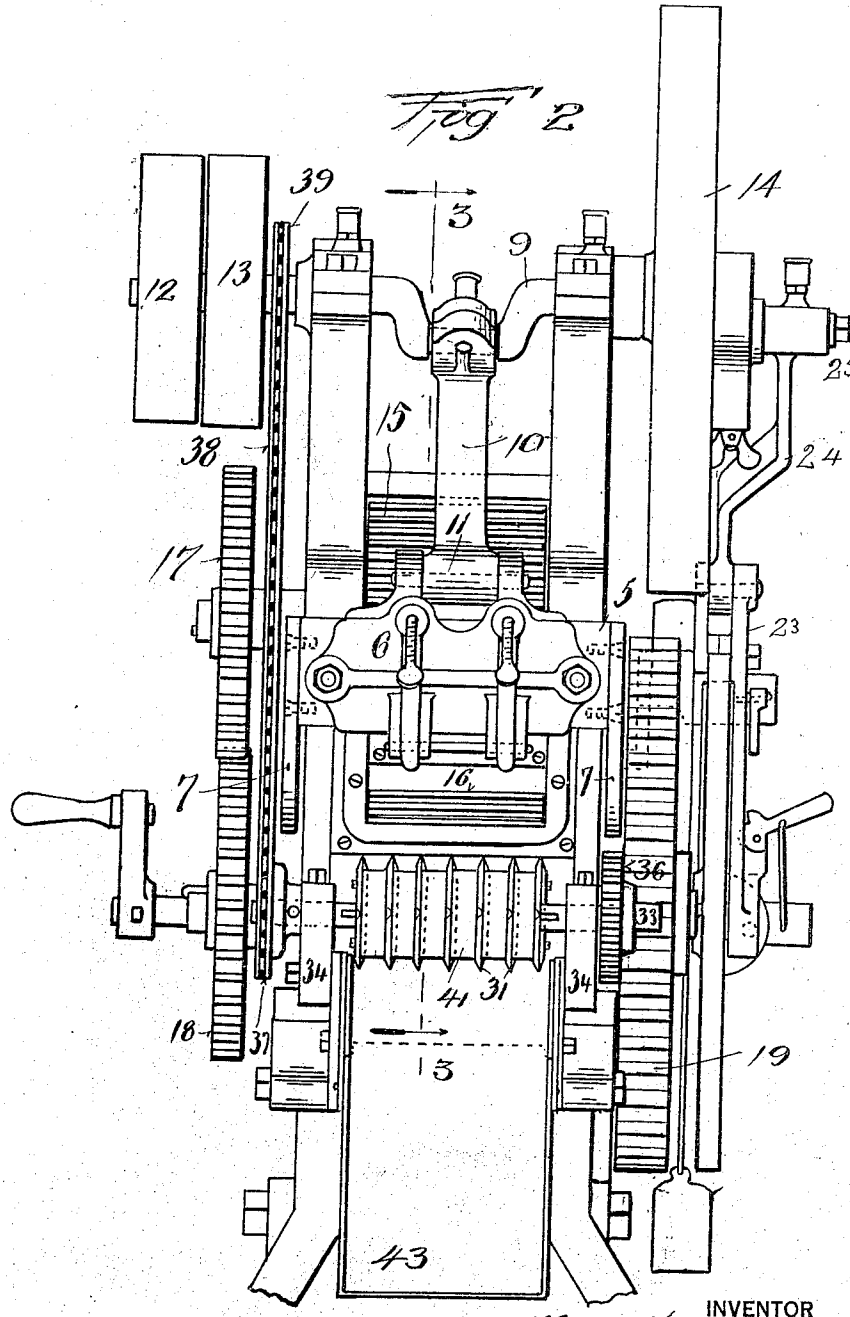
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Fig 2



INVENTOR

Max Himoff

BY His ATTORNEY

T & Bourne

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M. HIMOFF

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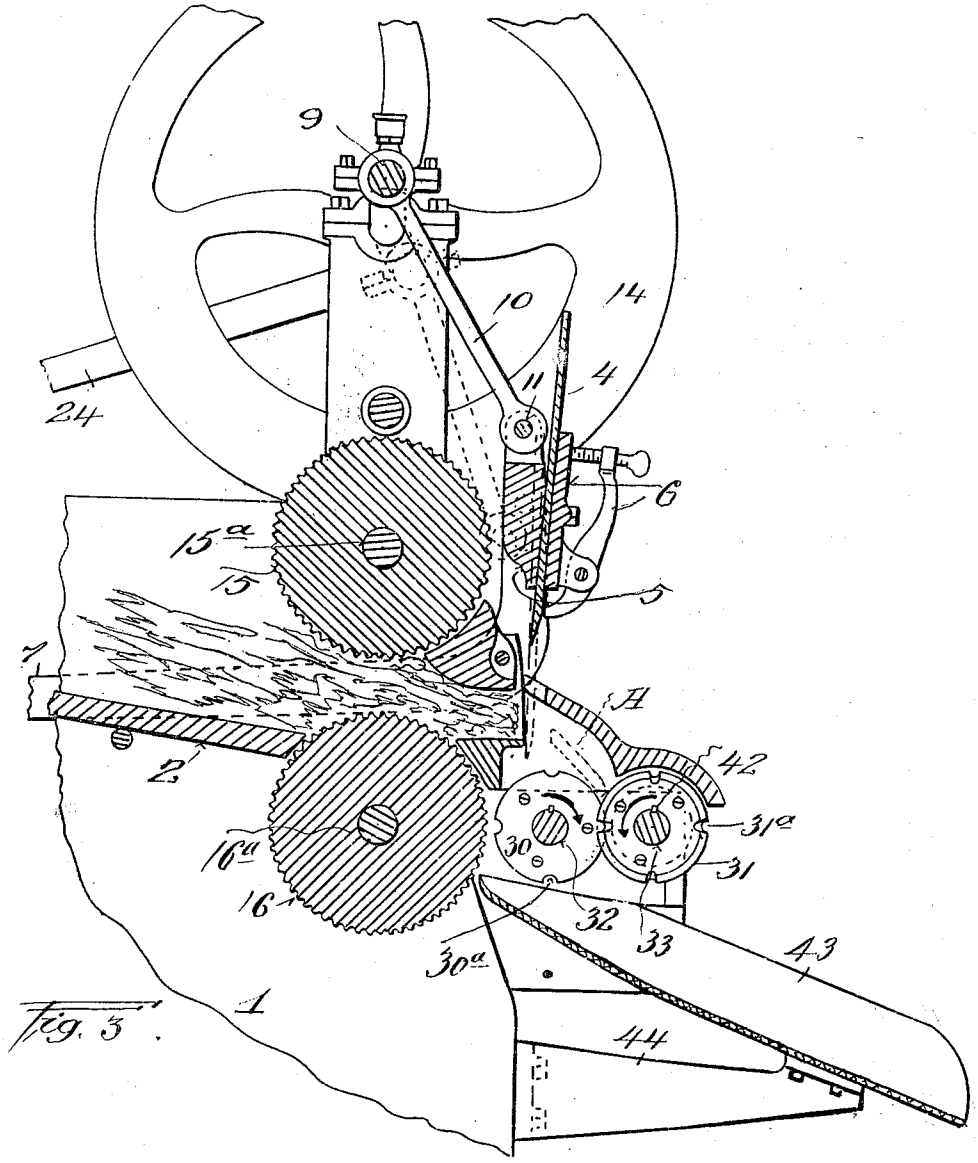


Fig. 3.

INVENTOR

Max Himoff

BY /// ATTORNEY

T. R. Bourne

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M. HIMOFF

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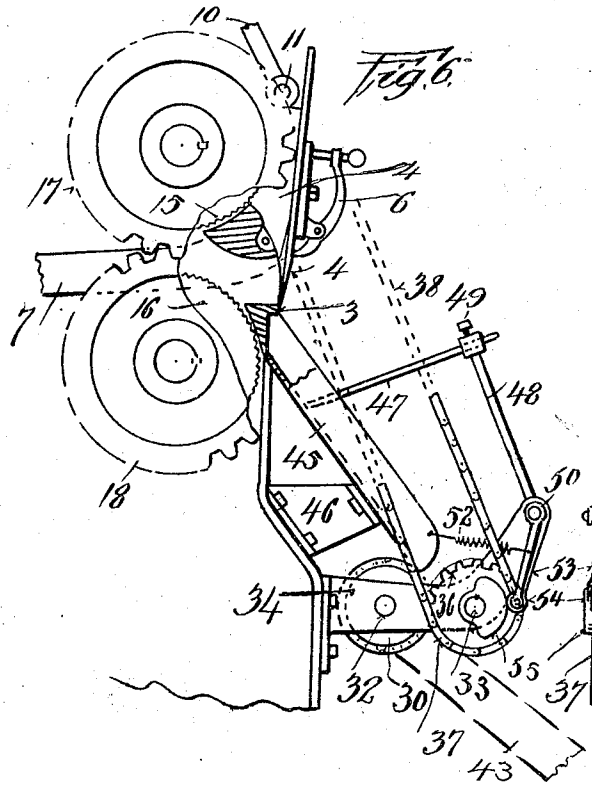


Fig. 6.

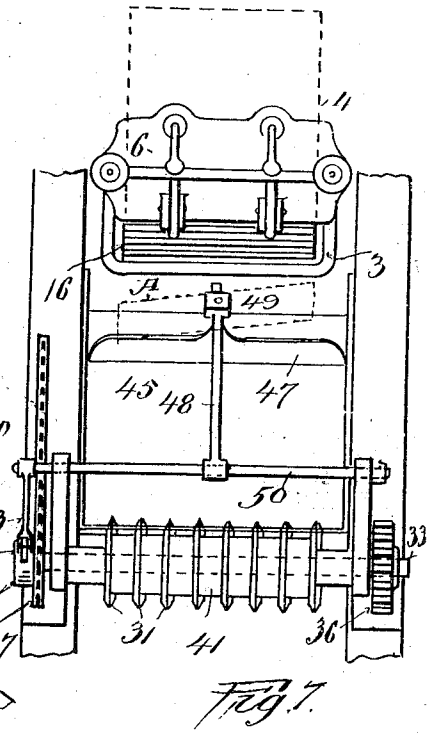


Fig. 7.

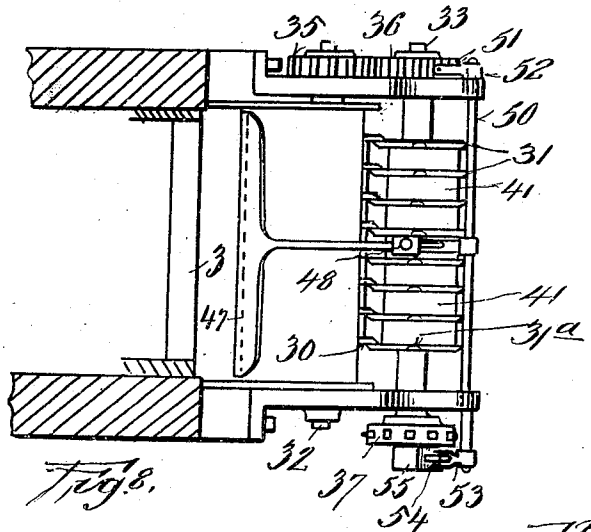


Fig. 8.

INVENTOR

Max Himoff

BY ATTORNEY

F. F. Bourne

Patented Oct. 28, 1924. 1,512,929

UNITED STATES PATENT OFFICE.

MAX HIMOFF, OF NEW YORK, N. Y.

TOBACCO-CUTTING MACHINE.

Application filed December 21, 1921. Serial No. 523,837.

To all whom it may concern:

Be it known that I, MAX HIMOFF, a citizen of the United States, and resident of New York city, borough of Bronx, in the county of Bronx and State of New York, have invented certain new and useful Improvements in Tobacco-Cutting Machines, of which the following is a specification.

In tobacco cutting machines the tobacco leaves, in layers or bunches, are fed to reciprocative knives that cut the tobacco into slices. Such slices of tobacco have been returned to the machine to cut them into finer parts at relatively high cost.

The object of my invention is to cut tobacco leaves into slices and to immediately cut or subdivide such slices into smaller or finely divided portions without the necessity of handling the slices, thereby expediting the making of fine tobacco and reducing the cost of the operation.

My invention comprises novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, wherein

Fig. 1 is a side view of machine embodying my invention; Fig. 2 is a front view thereof; Fig. 3 is a section on line 3, 3 in Fig. 2; Fig. 4 is a detail plan view of the rotary cutters for sub-dividing the tobacco slices; Fig. 5 is a section on line 5, 5 in Fig. 4; Fig. 6 is a detail side view illustrating the rotary cutters spaced considerably from the reciprocative knife; Fig. 7 is a front view of Fig. 6, and Fig. 8 is a cross section of Fig. 6.

Similar numerals of reference indicate corresponding parts in the several views.

I have illustrated my improvements in connection with a well known type of tobacco cutting machine. The main frame 1 is provided with a trough or guideway 2 for the tobacco leaves, at the open delivery end of which is a stationary cutter 3 to cooperate with a reciprocative knife 4 to cut the tobacco leaves into slices A, as usual. The knife is carried by a head 5 provided with knife clamping devices 6, of ordinary or suitable construction, said head being shown carried by arms 7 on opposite sides of the frame pivotally supported thereon at 8. A crank shaft 9 journaled in bearings on frame 1 is provided with a pitman or link 10 that is pivotally connected at 11 with head 5, whereby as the shaft is rotated the knife will be reciprocated. Shaft 9 may be operated by means of fast and loose belt pulleys 12, 13, and may have a fly wheel 14. Spaced fluted feed rolls 15, 16, are journaled to operate within trough 2 to feed the tobacco leaves to the aforesaid knives. The shafts 15^a, 16^a of said rolls are respectively provided with gears 17, 18 that intermesh to rotate the feed rolls. A train of gears 19, 20, 21 rotate shaft 16^a by means of crank arm 22, clutch 23, and link 24 that is connected with crank pin 25 carried by shaft 9. As shaft 9 is rotated the rolls 15, 16 will be rotated to feed the tobacco therebetween step by step as knife 4 is reciprocated to cut off successive slices of tobacco. By means of gears 26, 27 and crank arms 28 the machine may be manually operated, as to test slices of tobacco cut.

At a position below the cutter 3 and knife 4 are located rotary cutters 30, 31 to receive the tobacco slices from said knife to cut or sub-divide said slices into smaller portions. Said rotary cutters are secured on shafts 32, 33 respectively, which shafts are supported to rotate on brackets 34 carried by frame 1. Said shafts have intermeshing gears 35, 36 (Figs. 4 and 8), whereby they will rotate together in opposite directions. One of said shafts is shown provided with a sprocket wheel 37 receiving endless chain 38 from sprocket wheel 39 secured on shaft 9, whereby the rotary cutters are actuated. The cutters 30, 31 are suitably spaced apart on their respective shafts by means of spacers 40, 41, (Figs. 4 and 8), the width of the spacing of the respective cutters determining the fineness or length of the cutting of the tobacco slices. The cutters and spacers are preferably keyed on their shafts, as shown by keys 42. The cutters 30, 31 are preferably provided with spaced peripheral notches 30^a, 31^a, the edges of which notches are preferably beveled, as shown, to facilitate feeding of the slices between the rotary cutters and cutting of the tobacco.

In Figs. 1 to 5 the rotary cutters are shown located adjacent to cutter 3 so that the tobacco slices cut off by knife 4 will drop upon rotary cutter 30 to be carried thereby between the cutters 30, 31, which will operate to cut the slices transversely into smaller portions, according to the spacing

apart of the cutters. The cutters 30, 31 are shown arranged in cooperative pairs, having their cutting edges in juxtaposition to sever the slices. The cutting edges of the pairs of cutters engage side by side, with the cutting edges overlapping, that is to say with the cutting edge of one cutter of a pair extending beyond the cutting edge of the adjacent cutter of such pair at the cooperating positions, (Figs. 4 and 5), whereby the cutters are forced through the tobacco slices as the cutters rotate. The cuttings from the divided slices will pass through the spaces between the opposing cutters, and may be received upon a chute 43 shown carried by bracket 44 extending from frame 1.

The location of the rotary cutters shown in Figs. 1 to 5 is particularly applicable where the rotary cutters are installed in the machine when the same is being built. When it is desired to apply my improved rotary cutters to existing tobacco cutting machines, the construction shown in Figs. 6 to 8 is advantageous, although such construction may also be used building the machine originally. In said figures the bracket 34 is spaced considerably below cutter 3 to carry the rotary cutters below cutter 3 and a chute 45 is interposed between cutter 3 and rotary cutters 30, 31 to conduct the tobacco slices to the latter cutters from cutter 3 and knife 4. A bracket 46 supports chute 45 on frame 1. Chute 43 may be supported below cutters 30, 31 to receive the fine cut tobacco therefrom.

When tobacco slices slide along a chute such slices are liable not to slide straight to the cutters 30, 31 but may twist in or slide angularly along the chute so as not to be received in the desired rectangular relation upon the rotary cutters. To avoid such objection and to cause the slices to slide properly to the rotary cutters I provide one or more movable stops 47 operative in chute 45 in the path of the slices sliding therein. Stop 47 is operable toward and from the bottom of chute 45, and is shown carried by a lever or arm 48, to which the stop may be secured by screw 49, the reduced end of the stop being located in a hole in arm 48 to be engaged by screw 49. Arm 48 is shown carried by a rock shaft 50 journaled on spaced brackets 34. Shaft 50 has a projection or arm 52 provided with a roller 54 to operate against a cam 55 secured on shaft 33 (Fig. 6). A spring 52 connecting arm 53 with chute 45 serves to retain roller 54 resiliently pressed against cam 55, whereby as the cam is rotated shaft 50 will be rocked to operate stop 47 toward and from chute 45.

When the tobacco slice falls from knife 4 into chute 45, to slide down the latter, it is liable to twist or be deviated from a rectangular position in the chute in respect to the rotary cutters, and when the slice engages the stop 47 it will be caused to straighten in its course through the chute. Cam 55 and spring 52 will cause said stop to rise to permit the slice to slide under it, and the stop will return to the chute in the path of the next slice, and so on for each slice delivered into the chute, so that as the slices pass from the stop they will be in proper position to slide to the rotary cutters. In case chute 45 is relatively long I may provide two or more stops 47, spaced apart along the chute, operating alternately to permit the slices to successively engage the succeeding stops to straighten the slices in the chute, step by step, as they slide through the latter.

While I have described by improvements in connection with a specified type of tobacco cutting machine, it will be understood that my improvements are applicable to such machines made in other forms and provided with knives to cut off successive slices from the bunch of tobacco leaves fed to the knives.

Having now described my invention, what I claim is:

1. In a tobacco cutting machine the combination of a trough and means to cut slices of tobacco, a chute below said cutting means, rotary cutters to receive tobacco slices from the chute, a stop operable in the chute, and means to operate the stop into and out of the path of tobacco slices in the chute.

2. In a tobacco cutting machine the combination of a trough and means to cut slices of tobacco, a chute below said cutting means, rotary cutters to receive tobacco slices from the chute, a stop operable in the chute to engage tobacco slices, and means to move said stop toward and from the bottom of the chute to engage and release tobacco slices in the chute.

3. In a tobacco cutting machine the combination of a trough and means to cut slices of tobacco, a chute below said cutting means, rotary cutters to receive tobacco slices from the chute, a stop extending across the chute, an arm carrying the stop, and means to rock said arm to move the stop toward and from the bottom of the chute to receive and release tobacco slices in the chute.

4. In a tobacco cutting machine the combination of a trough and means to cut slices of tobacco, a chute below said cutting means, rotary cutters to receive tobacco slices from the chute, a stop extending across the chute, an arm carrying the stop, a cam operative with the rotary cutters to actuate said arm, and a spring cooperative with said arm, whereby the stop will be moved toward and from the chute bottom to receive and release tobacco slices in the chute.

Signed at New York, in the county of New York, and State of New York, this 19th day of December, A. D. 1921.

MAX HIMOFF.