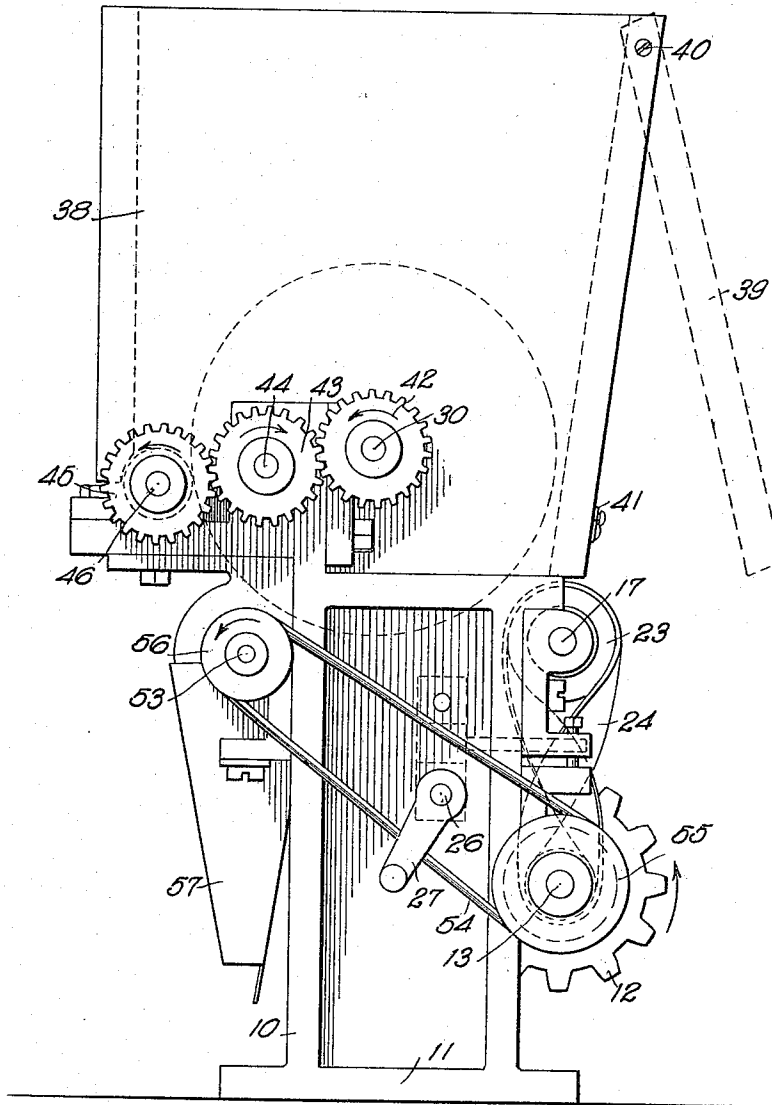


1,194,114.

Fig. 1



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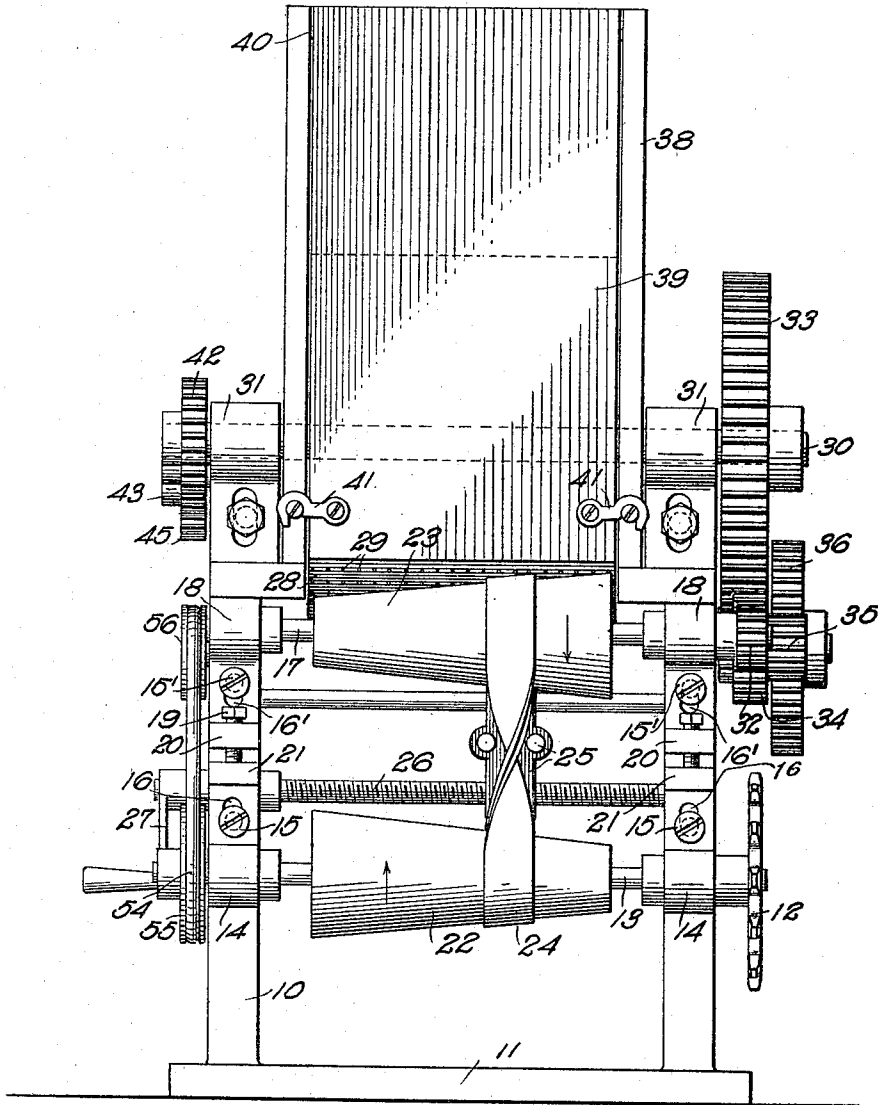
J. G. ZOHUMINSKY.
TOBACCO FEEDING MACHINE.
APPLICATION FILED OCT. 26, 1915.

1,194,114.

Patented Aug. 8, 1916.

3 SHEETS—SHEET 2.

Fig. 2



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Fig. 3

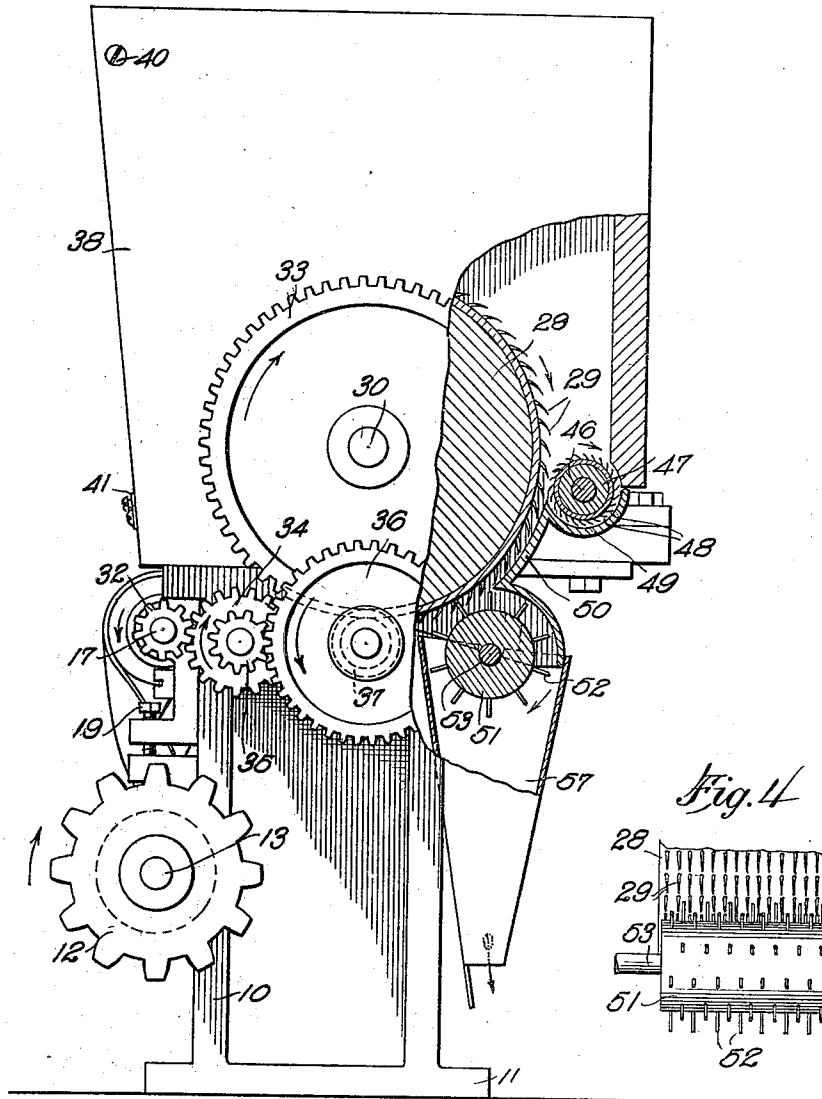
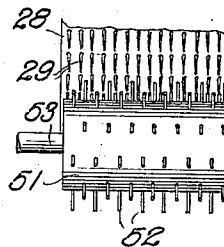


Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN G. ZOHUMINSKY, OF NEW YORK, N. Y.

TOBACCO-FEEDING MACHINE.

1,194,114.

Specification of Letters Patent.

Patented Aug. 8, 1916.

Application filed October 26, 1915. Serial No. 57,965.

To all whom it may concern:

Be it known that I, JOHN G. ZOHUMINSKY, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Tobacco-Feeding Machine, of which the following is a full, clear, and exact description.

This invention relates to tobacco and has particular reference to devices for shredding, macerating or comminuting the leaves of tobacco or the like preparatory to the manufacture of cigarettes or smoking tobacco.

Among the objects of the invention is to provide a machine comprising a main feeding drum provided with teeth or prongs for conveying the tobacco leaves, a smaller drum or roller coöperating with the main drum and having its adjacent surface moving in an opposite direction to control the quantity of tobacco leaves being conveyed by the main drum teeth, and a beater roller having prongs or fingers projecting between the adjacent rows of teeth on the main drum and serving to deliver the particles of tobacco therefrom in more or less finely comminuted condition together with driving means for the several rollers and drums at any desirable variable speed.

With the foregoing and other objects in view, the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is an end elevation of a preferred embodiment of the machine; Fig. 2 is a side elevation of the same; Fig. 3 is an elevation at the end opposite that of Fig. 1, parts being broken away; and Fig. 4 is a fragmentary view of parts of the main drum and beater to show the relation of the fingers to the teeth.

The machine comprises a main rigid supporting frame 10 mounted upon a base 11 and being adapted to be secured in any suitable position. At 12 is indicated a power wheel, the same being shown as a sprocket wheel but typifying any suitable driving element secured to a shaft 13 journaled in vertically adjustable boxes 14 held to the

frame by means of set screws 15 operating through slots 16. A countershaft 17 is mounted in other bearing boxes 18 adjustably secured to the frame uprights by means of screws 15' acting through other slots 16'. The two bearing boxes adjacent each other are adapted to be adjustable relatively to each other by means of a set screw 19 tapped through a lug 20 on one bearing box and bearing against a similar lug 21 on the adjacent box. Power from the shaft 13 may be transmitted to the shaft 17 by any suitable connection shown herein as comprising a pair of cone pulleys 22 and 23 over which is operated a belt 24, the tension on which may be determined by adjustment of the boxes by means of screws 19. The cones 22 and 23 being reversely arranged, the adjustment of the belt lengthwise of the pulleys will determine the relative rate of speeds of the two shafts. The belt is shown as crossed and therefore the two pulleys 22 and 23 are driven in opposite directions. The shifting of the belt 24 lengthwise of the pulleys may be effected by a suitable shifting device typified by a yoke 25 coöperating with a screw 26 journaled in the frame and provided at one end with a crank 27 or its equivalent.

At 28 is indicated the main feeding drum provided at its cylindrical surface with a plurality of teeth 29 inclined so as to point toward the direction of movement as shown by the arrows on the drawings. This drum is connected to a horizontal shaft 30 at the top of the frame in bearing boxes 31 and driven by speed reduction gearing from the counter shaft 17. Said gearing includes a pinion 32 connected to the countershaft, a large gear 33 secured to the drum shaft 30, and other gears 34, 35, 36 and 37 between the pinion and the large gear and whereby the speed of the drum is much reduced below that of the primary power shafts.

At 38 I provide any suitable form of hopper supported removably upon the top of the frame and surrounding the main feed drum 28. On one side the hopper is provided with a door 39 hinged at its upper end at 40 and adapted to swing outwardly at its lower end when the fasteners 41 are released so as to give free access to the parts within the bottom of the hopper.

To the end of the shaft 30 opposite the gear 33 is connected a gear 42 meshing with an idler 43 mounted on a fixed stud 44 and

in turn driving a gear 45 secured to the shaft 46 of an auxiliary feed drum 47. The gears 42 and 45 are preferably of approximately the same size and, hence, while the angular velocities of the two shafts 30 and 46 are substantially equal, the surface speed of the drum 28 is much greater than that of the auxiliary drum as is determined by the difference in the diameters of such drums.

Since the two feed drums are operated in the same direction and the adjacent surfaces thereof are therefore caused to move oppositely to each other, the drum 47 acts as a check or distributor for the material carried downwardly thereto and along by means of the teeth 29 of the main feed drum. The distributing drum also is provided with teeth 48 which are directed backwardly with respect to the direction of rotation. This distributing drum is journaled in the frame and is located in a pocket 49 formed in a face plate 50 on one side of the machine and along which the teeth 29 pass closely on the inner side.

At 51 is indicated a beater in the form of a roller having fingers 52 arranged to extend between the adjacent rows of teeth 29 of the main feed drum 28. This beater is mounted upon a shaft 53 driven directly from the power shaft 13 as by means of a belt 54 operating over pulleys 55 and 56 secured respectively to the shafts 13 and 53. The beater, therefore, is shown as being operated in the same direction as the distributor drum and the power shaft, and preferably at a slightly higher speed than the power shaft. The fingers 52 striking between the rows of conveying teeth 29 serve to strip the comminuted material from such conveying teeth and deliver the same downwardly through a spout or chute 57.

From what has been stated with respect to the construction of the mechanism, the operation will be clearly understood.

The material to be ground, pulverized or comminuted, upon being dumped into the hopper and the machine set in operation from any suitable source of power and operated in the direction indicated by the arrows, will be drawn downwardly toward and past the distributing drum 47 but will be prevented from choking the machine by

virtue of the action of said distributing drum and will be conveyed in moderate quantities or masses along the face plate or concave 50 where it is acted upon by the beater drum fingers 52 and there broken up into finely divided portions and discharged through the delivery spout or chute 57. The adjustment of the belt 24 along the cone pulleys provides a means for varying the speed of the feeding drums with respect to the speed of the beater. It will also be noted that the relative angular velocities of the shafts 30 and 46 may be readily varied by changing the relative sizes of the gears 42 and 45. For instance, the gears 42 and 43 may be so arranged as to be easily removable, and by enlarging the gear 42 a corresponding increase of speed of the driven shaft 45 will be provided.

I claim:—

In a machine of the class set forth, the combination of a main feeding drum having sharp forwardly directed teeth, a concave located closely adjacent one side of the bottom of the feeding drum, a distributing drum journaled closely adjacent the upper portion of the concave and serving to regulate the quantities of materials being delivered by the feeding drum along the concave, means to operate one of the drums from the other so as to cause their adjacent surfaces to move in opposite directions, a beater drum coöperating with the lower portion of the concave and having fingers projecting between adjacent rows of pointed teeth, means to operate the beater in such direction as to cause the fingers to move in the opposite direction from the teeth between which they operate, thereby causing the material to be stripped and torn from the teeth and finely divided, means to receive the material from the beater, power devices to drive the main feeding drum, and devices to drive the beater from the main power devices, certain of said devices being variable in speed so as to vary the relative speeds of the feeding drum and beater, substantially as set forth.

JOHN G. ZOHUMINSKY.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."