(No Model.) 2 Sheets—Sheet 1.

W. W. SMITH.

TOBACCO GRANULATING MACHINE.

No. 382,565. Patented May 8, 1888.

Fig. 1

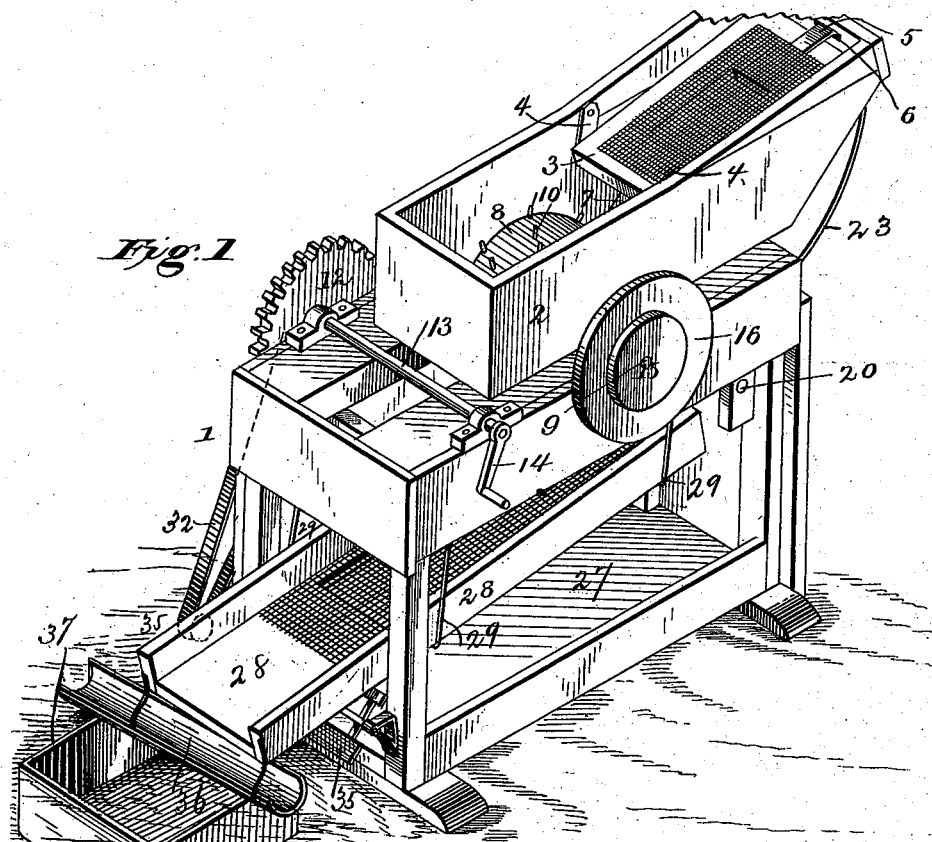
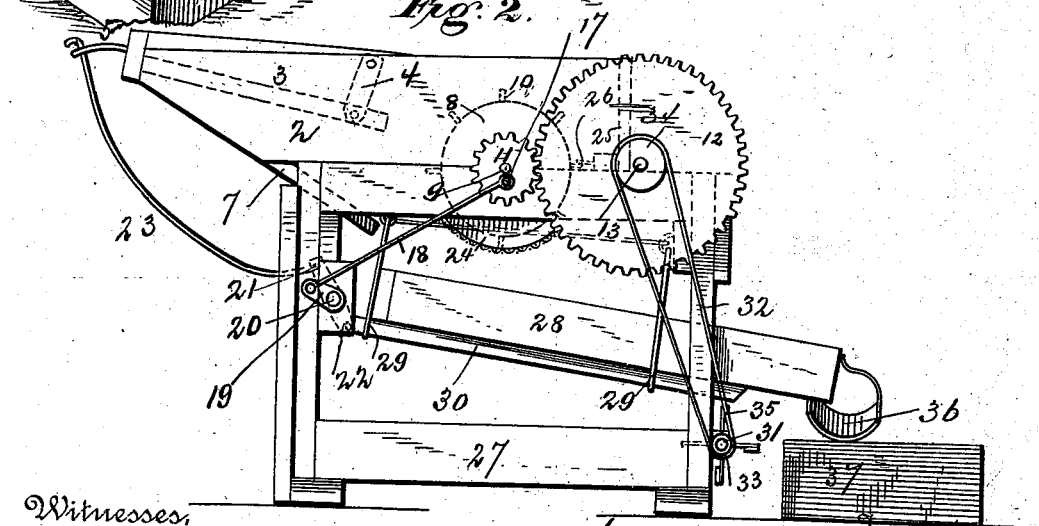


Fig. 2.



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Inventor.
William W. Smith,
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(No Model.) 2 Sheets—Sheet 2.

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TOBACCO GRANULATING MACHINE.

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Fig. 3.

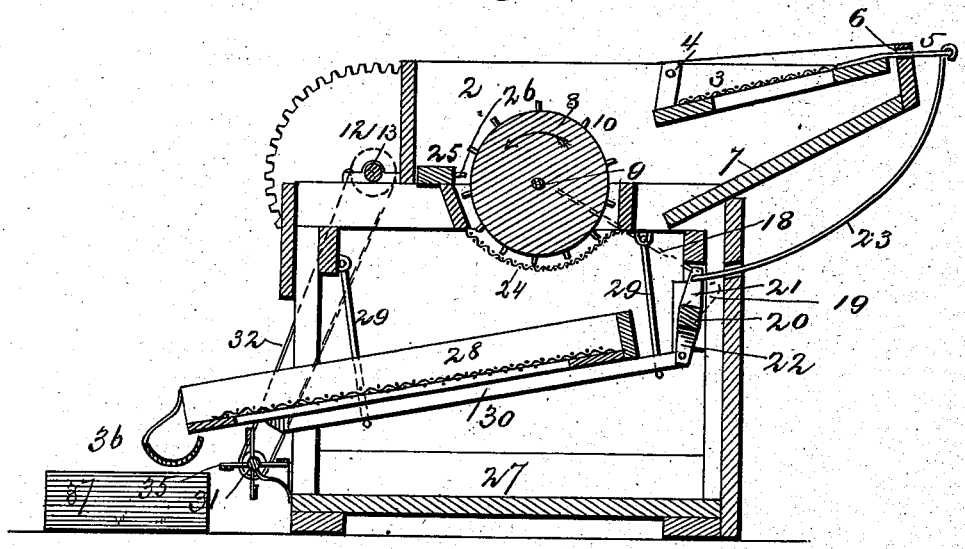
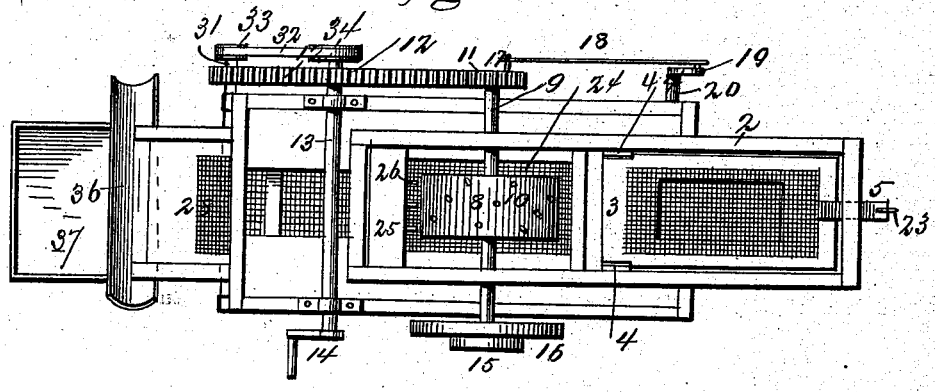


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM W. SMITH, OF HARTLEY, PENNSYLVANIA.

TOBACCO-GRANULATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 382,565, dated May 8, 1888.

Application filed December 27, 1887. Serial No. 259,131. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SMITH, a citizen of the United States, and a resident of Hartley, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Tobacco-Granulating Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my new and improved tobacco-granulating machine. Fig. 2 is a side elevation taken from the opposite side to that shown in Fig. 1, and with the side of the outer casing of the machine removed. Fig. 3 is a longitudinal vertical central sectional view; and Fig. 4 is a top plan view of the machine.

The same numerals of reference indicate corresponding parts in all the figures.

My invention consists in a new and improved machine for granulating tobacco-leaf, which will be hereinafter fully described and claimed.

Referring to the several parts by their designating-numerals, 1 indicates the outer main casing of my new and improved machine. Upon the top of this main frame is arranged the feed and cylinder box 2, which can be lifted off or removed when desired, to give more ready access to the mechanism of the machine at that point. In the upper part of the outer half or end of this box 2 is hung the oscillating feed-screen 3, the inner lower end of which is supported movably by the two hangers 4 4, pivoted at their upper and lower ends, as shown, and at its upper outer end by the supporting and operating rod 5, which extends and slides through an aperture, 6, in that end of the casing 2. Beneath this feed-screen is secured the inclined guide-board 7, for the purpose hereinafter described.

In the open inner part or half of the feed-box 2 revolves the feed-cylinder 8, which is mounted upon the central part of a transverse shaft, 9, and which has secured or formed in its periphery the rows of projecting-teeth 10, the series of teeth being arranged diagonally on the periphery of the wheel at an angle to the shaft 9 of the same, as clearly shown in the drawings, this arrangement of the teeth facilitating the feeding of the cylinder.

Upon one projecting end of the cylinder-shaft 9 is secured a pinion, 11, which meshes with a gear-wheel, 12, on a drive-shaft, 13, the said shaft having a crank or handle, 14, by means of which the machine may be driven by hand; or, if desired, it can be driven by steam or other power by means of belting from the source of power passing around a band-wheel, 15, on the other projecting end of the cylinder-shaft, a balance-wheel, 16, being also mounted on the said shaft.

Upon a wrist-pin, 17, on the pinion 11 is pivoted one end of a pitman or connecting-rod, 18, the other end of which is pivotally secured to the end of an arm, 19, which is secured upon the projecting end of the rock-shaft 20. This rock-shaft is mounted in bearings transversely in what may be called the front end of the machine, and has at its center the cross-arms 21 22, which extend at right angles to the shaft itself. The upper cross-arm, 21, is pivotally connected by a curved pitman, 23, with the outer end of the supporting rod or arm 5 of the feed-screen 3, so that when the cylinder-shaft is revolved to rotate the feed-cylinder it will at the same time operate to oscillate the feed-screen, as will be readily seen.

Beneath the feed-cylinder, with its teeth, is secured the curved receiving-screen 24, into which the tobacco which has been cut up by the teeth of the feed-cylinder and those of the stationary cutter-head 25 falls. This stationary cutter-head 25 is secured in the machine at the end of the opening in the frame 1 in which the feed-cylinder revolves, and is provided on its inner side with the pins or knives 26, arranged in a row, projecting inward, as shown, so that as the feed-cylinder revolves its teeth will pass between the knives of the cutter-head 25.

In operation, the cylinder-shaft being revolved, as described, either by hand, steam, or other power, the tobacco-leaves are placed upon the oscillating feed-screen, and as this inclined screen oscillates it will automatically feed the tobacco-leaf down and in until it comes in contact with the feed-cylinder, while the loose stems, dirt, &c., will fall through the interstices of the feed-screen down upon the inclined guide-board, 7, from which they

fall into the bottom waste drawer or box, 27, hereinafter referred to. The leaf is carried by the revolving cylinder in between the teeth of the same and the knives 26 of the cutter-head 25, where the leaf is cut into small scraps of the desired size, these scraps being received in the curved screen 24, through which they fall into the large oscillating shaker or screen 28. This long and wide screen is pivotally secured in hangers 29 29, inclining downward to its lower outer end, and is oscillated by the rock-shaft 20, being pivotally connected to the lower cross-arm, 22, of the same by the pitman 30, so that this rock-shaft operates both the feed-screen and the lower screen or shaker, 28. At the end of this lower vibrating screen, 28, is supported in bearings a revolving shaft, 31, which is rotated through a band, 32, passing around a pulley, 33, upon the outer end of the shaft and also around the pulley 34 on the outer side of the gear-wheel 12, and upon the central part of this shaft is secured a fan, 35, which is partly covered by the spout 36, arranged as shown. Now as the scraps of tobacco as cut by the feed-cylinder and stationary cutter-head fall upon the oscillating lower screen, 28, this fan will operate to blow the light and clean scraps into a box or basket, 37, placed at the end of the screen 28 for that purpose, while the stems, being heavier, slide down the screen and are shaken out at the lower end of the same into the spout 36, down which they slide into the bottom waste-drawer, 27, which is arranged at the bottom of the machine casing, and into which the fine dirt and impurities which might be mixed with the tobacco-leaf fall through the feed-screen, as before stated.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my invention will be readily understood.

It will be seen that my new and improved machine is simple, strong, and durable in construction, convenient to operate, and exceedingly efficient in its operation. The tobacco feeds itself, as it may be said, automatically. The revolving feed-cylinder, with its diagonal rows of teeth acting in conjunction with the knives of the fixed cutter-head, cut the leaf into scraps of the requisite size. The two vibrating screens are both operated from the cylinder-shaft by the peculiarly-constructed rock-shaft, while by means of the fan and spout the cut tobacco is blown clean and in proper shape into the box or basket placed to receive it, while the stems are separated and go into the waste-box with the dust and dirt.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of a frame, a toothed cylinder journaled upon the frame, a feed-box upon the frame, one end of which is above the cylinder and the other end is provided with an inclined feed-board, an inclined screen above the feed-board, two hangers pivotally secured to the side of the box and to the inner end of the screen, an operating-rod secured to the other end of the screen and passed through the end of the feed-box, a shaft below the inclined feed-board having an arm, a rod or curved pitman connecting the arm with the end of the operating-rod, and a rod for connecting the shaft with the cylinder-shaft.

2. The combination of a frame, a cylinder journaled across its top, a feed-box above the cylinder, one end of which is provided with an inclined feed-board, an inclined screen above the feed-board, a vibrating screen below the cylinder, a drawer below this screen and the inner end of the feed-board, a trough secured transversely across the lower end of the screen, and a fan below the lower end of the screen.

3. The combination of a frame, a cylinder journaled across its top, a feed-box, a vibrating screen in one end of the box, one end of which is provided with an operating-rod which projects through the end of the box, a vibrating screen within the frame below the cylinder, a shaft journaled in the frame below the screen in the feed-box and at the end of the screen in the frame, two arms upon the shaft—one of which is connected with the operating-rod of the screen in the feed-box and the other arm is connected with the screen within the frame—and a rod for connecting this shaft with the shaft of the cylinder.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

WILLIAM W. SMITH.

Witnesses:
W. J. McCLURE,
J. H. SPRING.