No. 717,317. Patented Dec. 30, 1902.

F. G. BAECHLIN.

TOBACCO STRIPPING, BOOKING, AND SELECTING MACHINE.

(Application filed Nov. 22, 1901.)

(No Model.) 3 Sheets—Sheet 1.

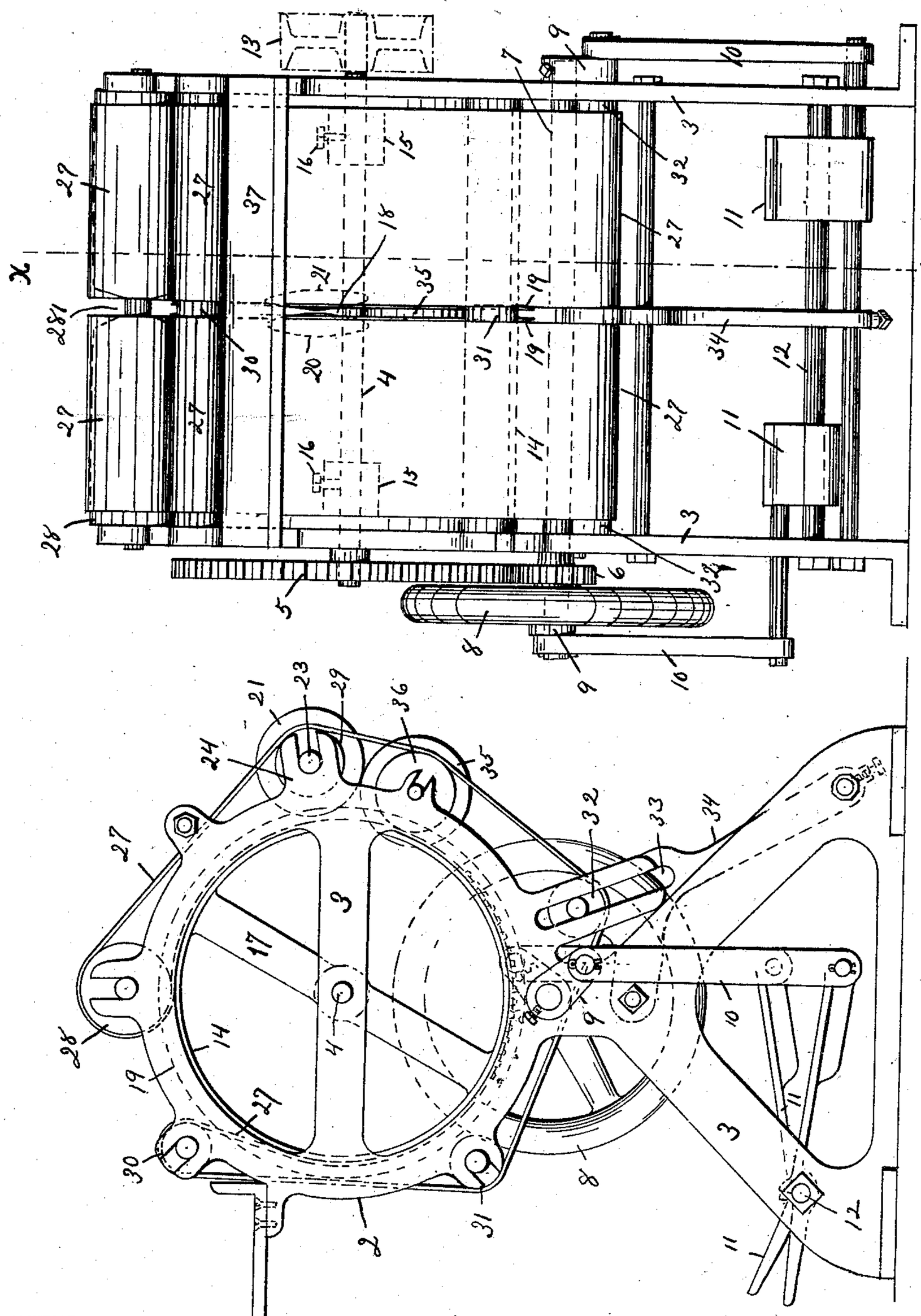

Fig. 1.

Fig. 4.

WITNESSES:

Henry Krug

Russell M. Everett

INVENTOR:

Frederick G. Baechlin,

BY

Dorsey & Co

ATTORNEYS.

No. 717,317. Patented Dec. 30, 1902.

F. G. BAECHLIN.

TOBACCO STRIPPING, BOOKING, AND SELECTING MACHINE.

(Application filed Nov. 22, 1901.)

(No Model.)

3 Sheets—Sheet 2.

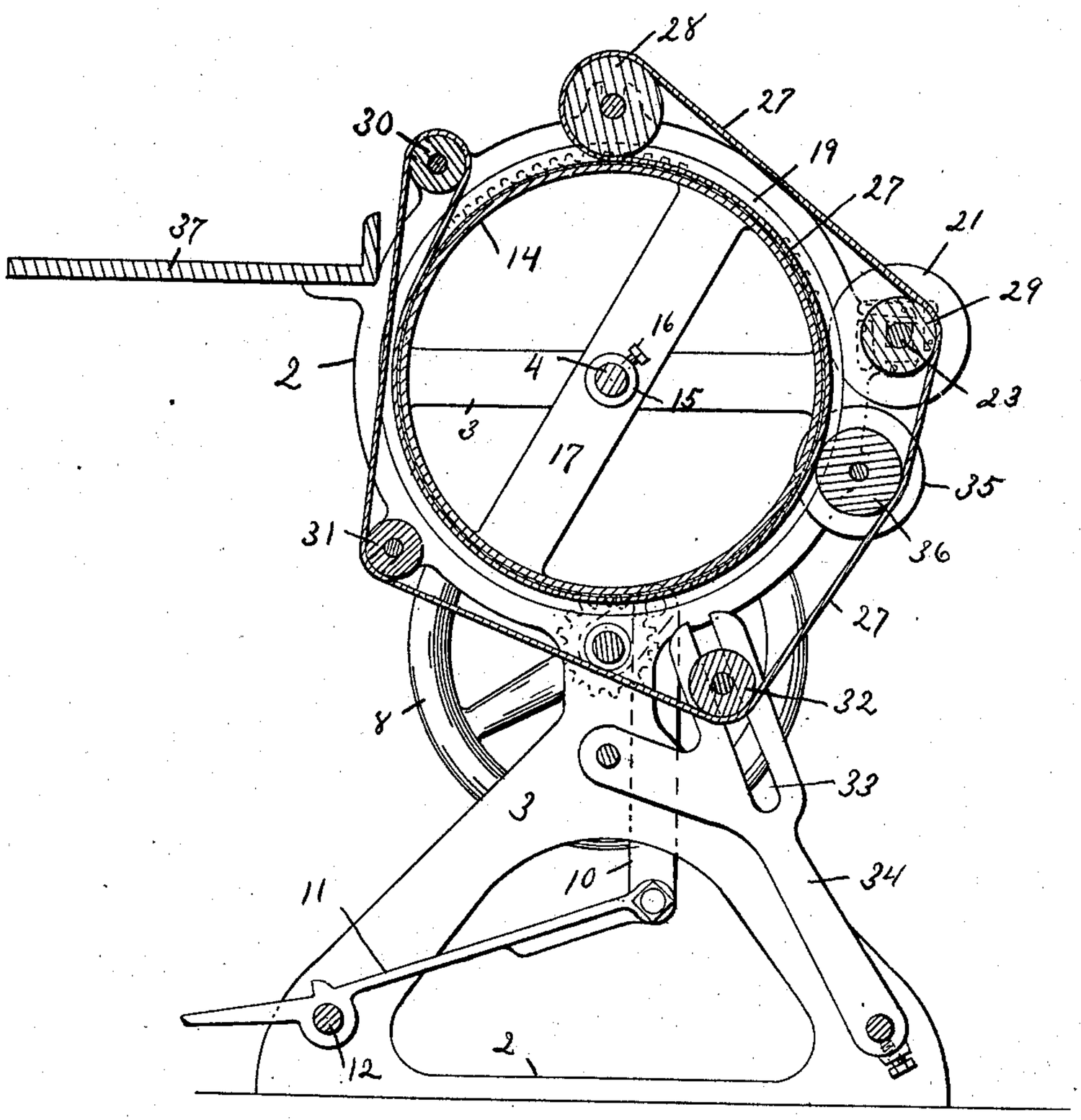

Fig. 3.

WITNESSES

Henry Orrig

Russell M. Everett.

INVENTOR:

Frederick G. Baechlin,

BY

Drake & Co.

ATTORNEYS.

No. 717,317. Patented Dec. 30, 1902.

F. G. BAECHLIN.

TOBACCO STRIPPING, BOOKING, AND SELECTING MACHINE.

(Application filed Nov. 22, 1901.)

(No Model.) 3 Sheets—Sheet 3.

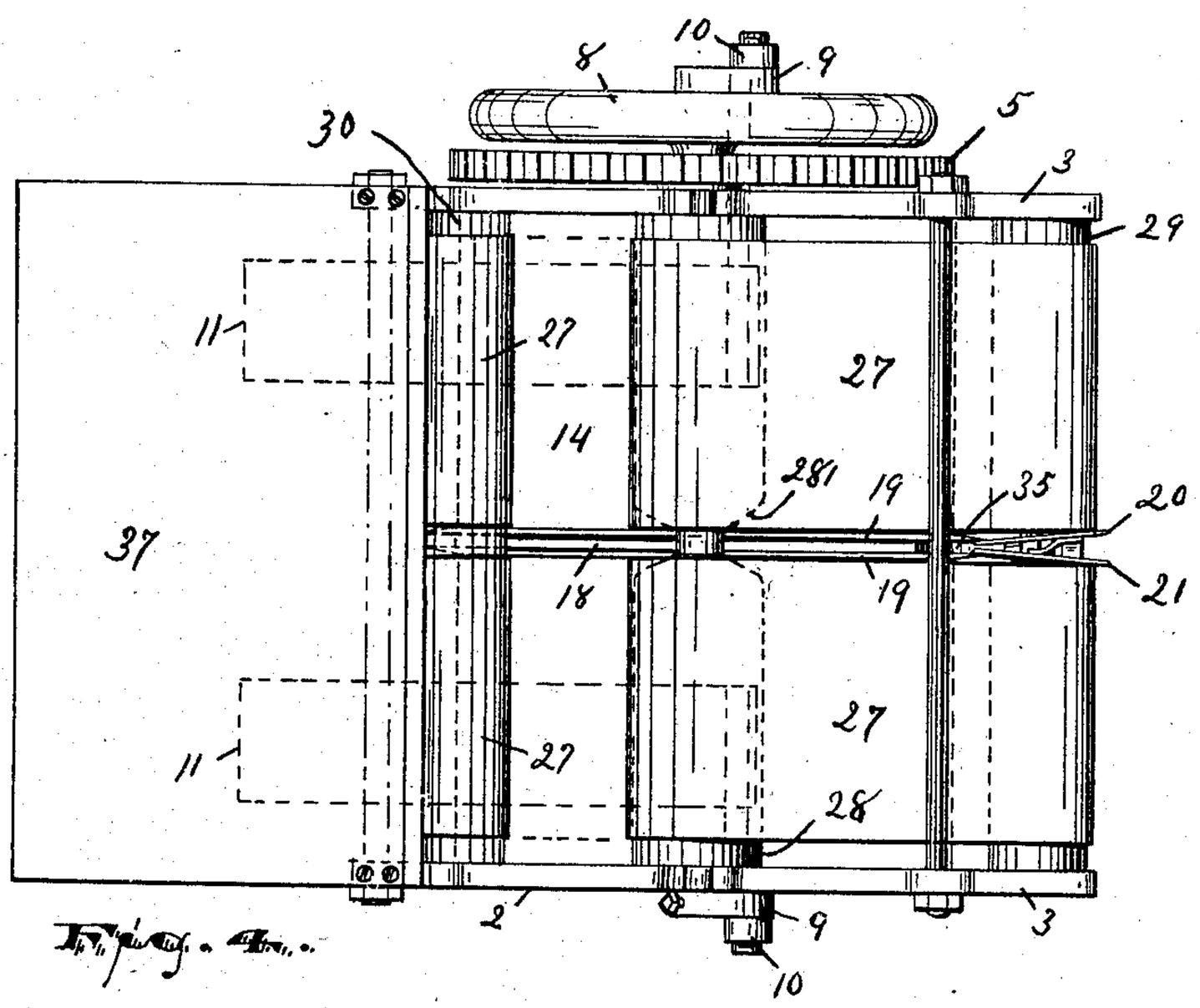

Fig. 4.

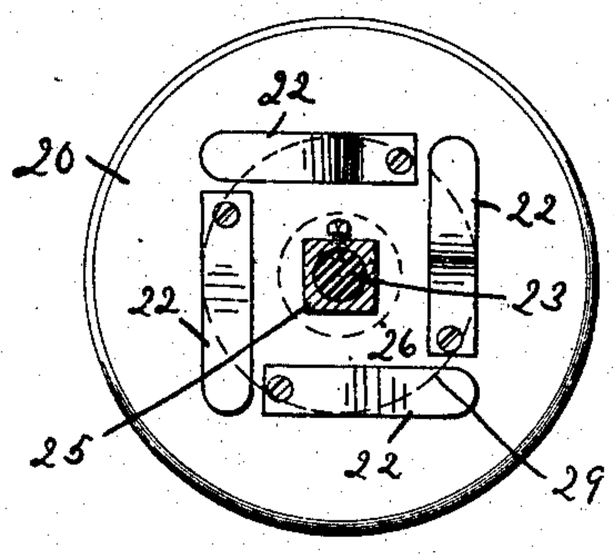

Fig. 6.

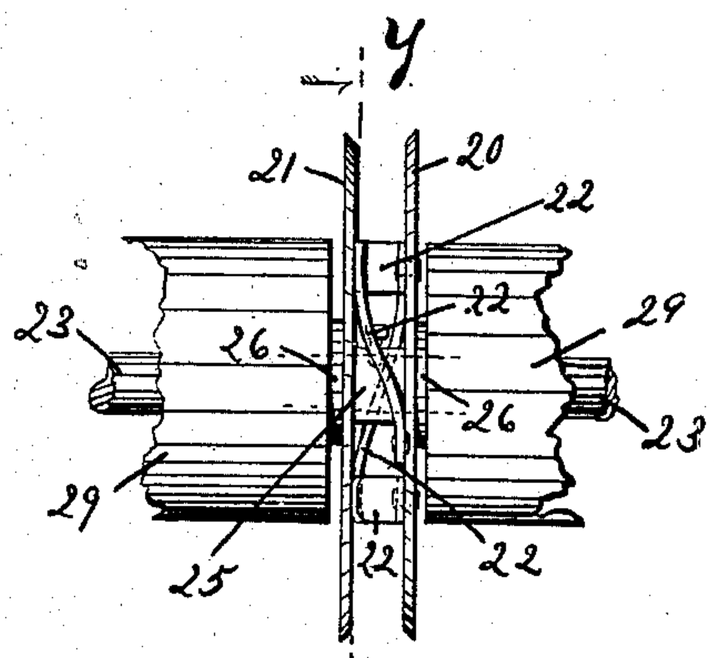

Fig. 5.

WITNESSES:

Harry Krug

Russell M. Everett

INVENTOR,

Frederick G. Baechlin

BY

Drake & G

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FREDERICK G. BAECHLIN, OF NEWARK, NEW JERSEY.

TOBACCO STRIPPING, BOOKING, AND SELECTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 717,317, dated December 30, 1902.

Application filed November 22, 1901. Serial No. 83,243. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK G. BAECHLIN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Tobacco Stripping, Booking, and Selecting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

The objects of this invention are to provide a tobacco stripping or stemming machine of simple and compact construction; to secure efficient and rapid work; to enable a number of leaves to be fed into the machine in quick succession, each being stemmed or stripped and then "booked" with the previous ones; to thus provide a combined stripper and booker; to further insure a selection of the rights and lefts of the leaves in booking, so that only those of a kind will be booked together, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved tobacco stripping, booking, and selecting machine and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is a side elevation of my improved machine. Fig. 2 is a front view of the same. Fig. 3 is a vertical section on line *x*, Fig. 2. Fig. 4 is a plan of the machine. Fig. 5 is a detail edge view of the cutters; and Fig. 6 is a section on line *y*, Fig. 5.

In said drawings, 2 indicates the frame of my improved machine, which may be of any suitable construction providing upright side plates 3 3, in which the transversely-extending parts, hereinafter described, may be journaled.

A main shaft 4 extends across the upper part of the machine and is adapted to be driven by any suitable source of power. I have shown a large gear-wheel 5, fast on said shaft and meshing with a driver 6 on a driving-shaft 7, said driving-shaft carrying a fly-wheel 8 and having cranks 9 9, joined by connecting-rods 10 10 to foot-treadles 11 11 on a pivotal shaft 12 between the side plates of the machine-frame, or, if preferred, a belt-pulley 13 may be applied directly to the main shaft 4, as indicated in outline in Fig. 2. On said main shaft 4 and between the side plates 3 3 of the frame is secured to turn therewith a hollow cylindrical drum 14, said drum being provided at its ends with hubs 15 and set-screws 16 for fastening it to the shaft. The ends of the drum are preferably open except for cross-pieces or spokes 17, and midway between said ends the drum is circumferentially slotted or divided, as at 18. This slot, which preferably extends clear around the drum, is wide enough to receive the stems or ribs of tobacco-leaves, and the edges of the slot are raised or extended radially outward from the surfaces of the drum to form flanges 19 three-quarters of an inch, more or less, in height. Said flanges are preferably beveled at their outer sides to a cutting edge, and between said flanges at one point of the periphery of the drum, preferably the side away from the operator, are adapted to enter a peripheral portion of two cutter-disks 20 21. Said disks are each beveled at its inner side to a cutting edge, and thus adapted to coöperate with the adjacent flange 19 of the drum to effect a shearing action, the two disks being pressed oppositely apart by a suitable spring or springs to hold each cutter against its flange. Preferably this is effected by leaf-springs 22, arranged around the axis of the disks and all being secured at one end to one disk and bearing at the other or free ends against the other disk, all as shown in Figs. 5 and 6. The said cutter-disks are preferably upon a shaft 23, journaled at its opposide ends in bearings 24 of the side plates of frame 2, which permit outward adjustment of the shaft, said disks having square central apertures to fit upon a square sleeve 25, fixed on the shaft. Said disks or cutters are loose upon the said sleeve 25 and by reason thereof

and because of their thinness are adapted to tip sidewise to a greater or less extent, and thus are enabled to change their angular relation to the shaft and accommodate themselves to the drum-flanges 19, as shown in Figs. 2 and 4. Outside said disks are washers 26 and then rollers 29, of wood or the like, directly on the shaft and adapted to receive belts 27 to rotate the shaft. There are two such belts 27, disposed one on each side of the slot 18 of the drum and extending from said slot out to or nearly to the end of the drum. Each belt is endless, being formed of canvas or any other suitable material, and is lapped around the drum for the greater portion of its periphery, the inner fold pressing against the drum and receiving motion therefrom and the outer fold being carried upon suitable rollers, next to be described. The said belts pass around a roll 28 at the top of the drum and resting thereagainst, the said roll being movable radially toward and away from the drum and being notched or reduced at its middle between the two belts, as at 281, to avoid the cutting-flanges 19 on the drum. From this roll 28 the inner fold of the belt lies circumferentially around the drum almost its entire periphery and then is carried backwardly over a roller 30, disposed somewhat out from the drum and being forward of and a little below said roll 28, so as to afford opportunity for inserting leaves beneath the roll 28 in the operation of the machine, as hereinafter set forth. From said roller 30 the outer fold of the belt extends downward over an idle roller 31 to hold it away from the drum, over a tension-roll 32 beneath the drum, and up over the roller end portions of the cutter-disks shaft 29 to the top roll 28 again.

The tension-roll 32 is simply a weighted or heavy roller journaled at one end in one of the side plates 3 of the frame and at its other end in a slot-like bearing 33 in a bracket 34, fixed midway between the side plates and vertically disposed. There are thus two independent rolls, one for each belt 27, so that said belts are both kept tightly wrapped against the drum, each by a strain independent of the other.

A follower or slot-clearer is provided just below the cutter-disks comprising a wheel 35 of sufficient thickness to fill the slot 18 of the drum and standing partially therein. Said wheel is fixed at the middle of a roll 36, journaled like the roll 28, before described, and pressing at its inner side the inner folds of the belts 27 27 against the drum and being engaged at its outer side by the outer fold of the belt, as shown.

A shelf or table 37 is horizontally arranged at the front of the machine, and at this the operator usually sits with a supply of leaves before him. The machine being in motion, a leaf is inserted tip first and with the natural endwise concavity of the leaf downward beneath the roll 28 and fed in between the drum and endless belts 27. The stem of the leaf is placed to lie between the flanges 19 19 of the drum, and as the leaf comes around to the cutter-disks said stem is cut out and drops into the interior of the drum. If by any chance a stem should stick between the flanges 19 19, the clearing-wheel 35 will dislodge it. As the first leaf is brought around to its starting-point, its halves pressed flat on the drum by the endless belts, a second leaf is fed in directly on top of the first one, and this is repeated with other leaves until books of perhaps fifty leaves thickness or about the height of the flanges 19 19 are formed, when they are removed.

It will be understood that as the books increase in thickness the rolls 28 and 29, as well as the inner fold of the belts 27, are pushed out from the drum, the tension-rollers 32 of the outer fold permitting such adjustment. Moreover, since the tension-rollers 32 are independent, each belt can adjust itself to the thickness of its book regardless of the other.

It should be noted that my improved machine as well as stripping and booking the leaves also assorts or selects them, for since if the leaves are all inserted in the natural and correct manner all the rights will be at one end of the drum and all the lefts at the other.

In the booking, it will be noted, the two rollers 28 and 36 are largely instrumental, since they both press firmly toward the drum-surface, and thus compress the tobacco-leaves into compact and solid packages or books. Each leaf when first fed into the machine passes under the roll 28 and is immediately smoothed out and pressed flat preparatory to the removal of the stem, and then as the stem is being cut out the divided portions or halves of the leaf pass beneath the roll 36 and are further smoothed out and pressed into final condition for the book, and as the constantly-increasing bundle passes repeatedly around the drum in the formation of a book the leaves are still further compressed and compacted together. Moreover, the two rolls 28 and 36 by their arrangements immediately before and after the cutter-disks serve to hold each leaf stretched smooth while the stem is being removed, so that there is no danger of wrinkling or drawing of the leaf toward the slot.

It will be obvious that by lifting all the rollers 28, 36, 32, 31, and 30 out of their bearings and removing them, together with the belts 27 27, the cutter-disks 20 21, with their shaft 23 and connected parts, can then be transferred to the position previously occupied by the roll 28 at the top of the drum. This provides a machine which can be used for simply stripping, regardless of booking or selecting, and is very advantageous for rapid work in stripping "filler," the stripped leaves falling from the rear of the drum into a basket or other receiver and the stems going inside the drum, as usual.

Having thus described the invention, what I claim as new is—

1. In a tobacco-stripping machine, a rotary drum or cylinder divided or opened intermediate of its ends to form a slot and having, at the sides of said slot, raised edges or flanges independent endless belts lapped nearly around the periphery of said drum on opposite sides of said slot, rotary cutting-disks entering at their edges said slot and a spring forcing said cutting-disks apart against the sides of the slot.

2. In a tobacco-stripping machine, a rotary drum circumferentially slotted intermediate of its ends and having the edges of said slot raised and forming radial flanges, an endless belt lapped nearly around said drum at one side of said slot and rotary cutting-disks entering at their edges between the said radial flanges at the sides of the slot, and being resiliently held against said flanges.

3. In a tobacco-stripping machine, a rotary drum circumferentially slotted intermediate of its ends and having the edges of said slot raised and forming radial flanges, an endless belt lapped nearly around said drum at one side of said slot, and a rotary clearing-disk running between said flanges.

4. In a tobacco-stripping machine, a rotary drum or cylinder circumferentially slotted intermediate of its ends, a parallel shaft, cutter-disks slidably mounted on said shaft and adapted to change their angular relation thereto, said disks entering at their edges the slot in the drum, and springs forcing said cutter-disks apart.

5. In a tobacco-stripping machine, a circumferentially-slotted drum or cylinder, means for rotating said drum or cylinder, endless carrier-belts lapped around a portion of the periphery of the drum and receiving motion therefrom, and rotary cutter-disks entering at their edges the slot in the drum and being driven by said carrier-belts.

6. In a tobacco-stripping machine, a circumferentially-slotted drum or cylinder journaled in fixed bearings, and means for rotating said drum, endless carrier-belts lapped around a portion of the periphery of the drum or cylinder and being resiliently held thereagainst and receiving power therefrom, a roller journaled parallel to said drum and driven by the outer folds of the endless belts, and cutter-disks on said roller adapted to enter at their edges the slot in the drum or cylinder.

7. In a tobacco-stripping machine, a rotary drum or cylinder journaled in fixed bearings and having a circumferential slot and radially-projecting flanges at the opposite edges of said slot, a roller journaled in fixed bearings parallel to said drum, cutting-disks on said roller entering at their edges between the said flanges on the drum, an endless belt lapped around a portion of the periphery of the drum and passing over the said roller, and means for rotating the drum or cylinder.

8. In a tobacco-stripping machine, a rotary drum or cylinder circumferentially slotted intermediate of its ends and having raised flanges at the edges of said slot, and rotary cutting-disks entering at their edges between said flanges and bearing resiliently thereagainst.

9. In a tobacco-stripping machine, a rotary drum or cylinder circumferentially slotted intermediate of its ends, a parallel shaft, cutter-disks slidably mounted on said shaft and being free to change their angular relation to the shaft, said disks entering at their edges the slot in the drum, a spring pressing oppositely against the facing sides of said disks, and fixed stops or collars at the outer sides of said disks.

10. In a tobacco-stripping machine, the combination with a circumferentially-slotted drum, of a parallel shaft cutter-disks slidably mounted on said shaft and adapted to change their angular relation to the shaft, and a plurality of springs arranged around the said shaft radially out from the same, between the said disks and pressing oppositely against their adjacent faces, said disks at their outer edges entering the slot of the drum.

11. In a tobacco-stripping machine, the combination with a suitable frame having side plates 3, 3, of a rotatable drum mounted between said side plates, means for rotating said drum, a plurality of interchangeable belt-rollers outside the periphery of the drum, and having their ends removably journaled in said side plates, cutters on one of said rollers adapted to coöperate with the drum, and a booking-belt passed over said rollers and lapped against a portion of the periphery of the drum, whereby the said belt can be removed from the drum and the cutters shifted for stripping without booking.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of November, 1901.

FREDERICK G. BAECHLIN.

Witnesses:
CHARLES H. PELL,
RUSSELL M. EVERETT.