

(No Model.)

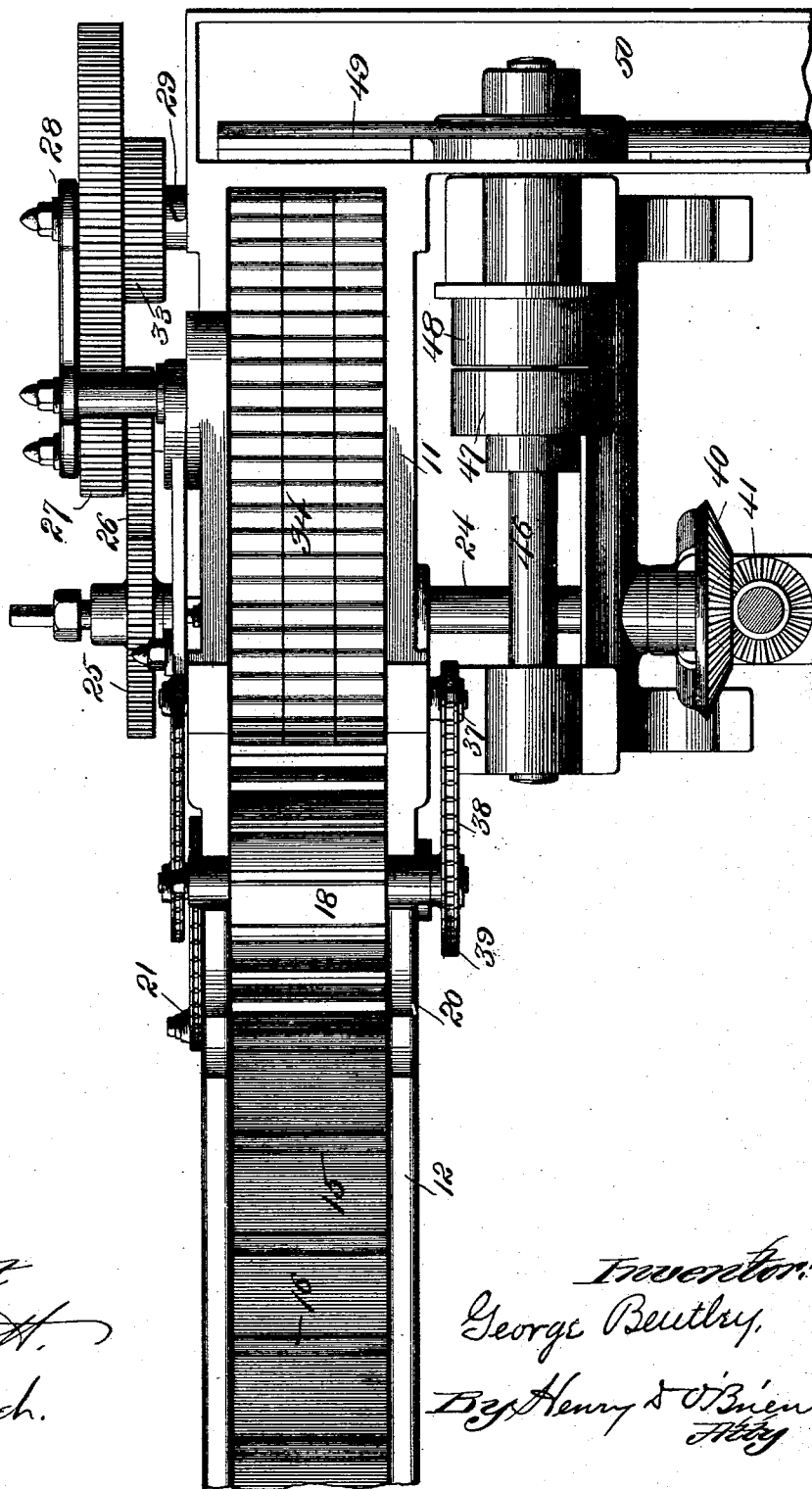
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G. BENTLEY.
TOBACCO CUTTING MACHINE.

No. 572,149.

Patented Dec. 1, 1896.

Fig. 1



Attest
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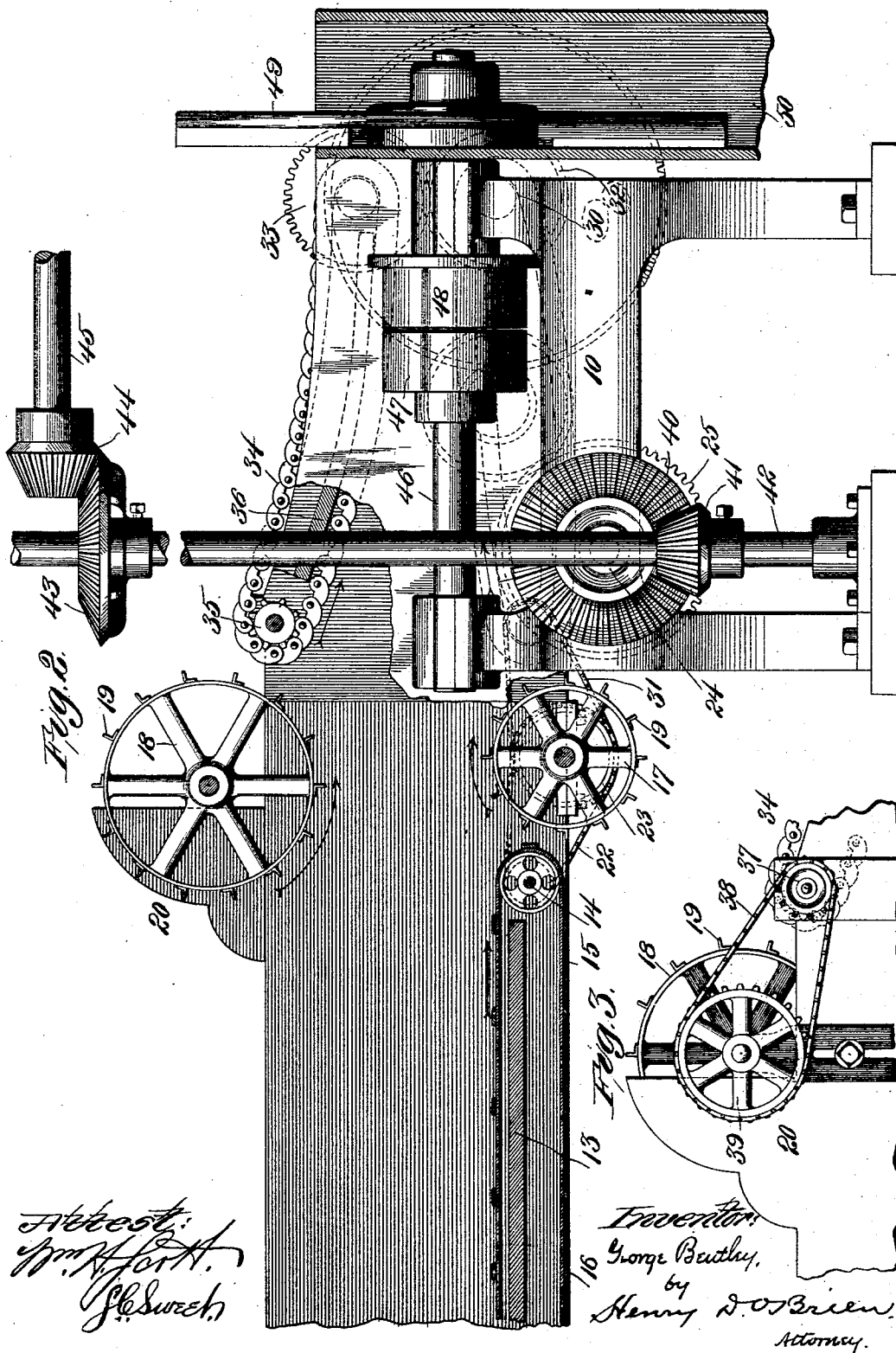
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3 Sheets—Sheet 3.

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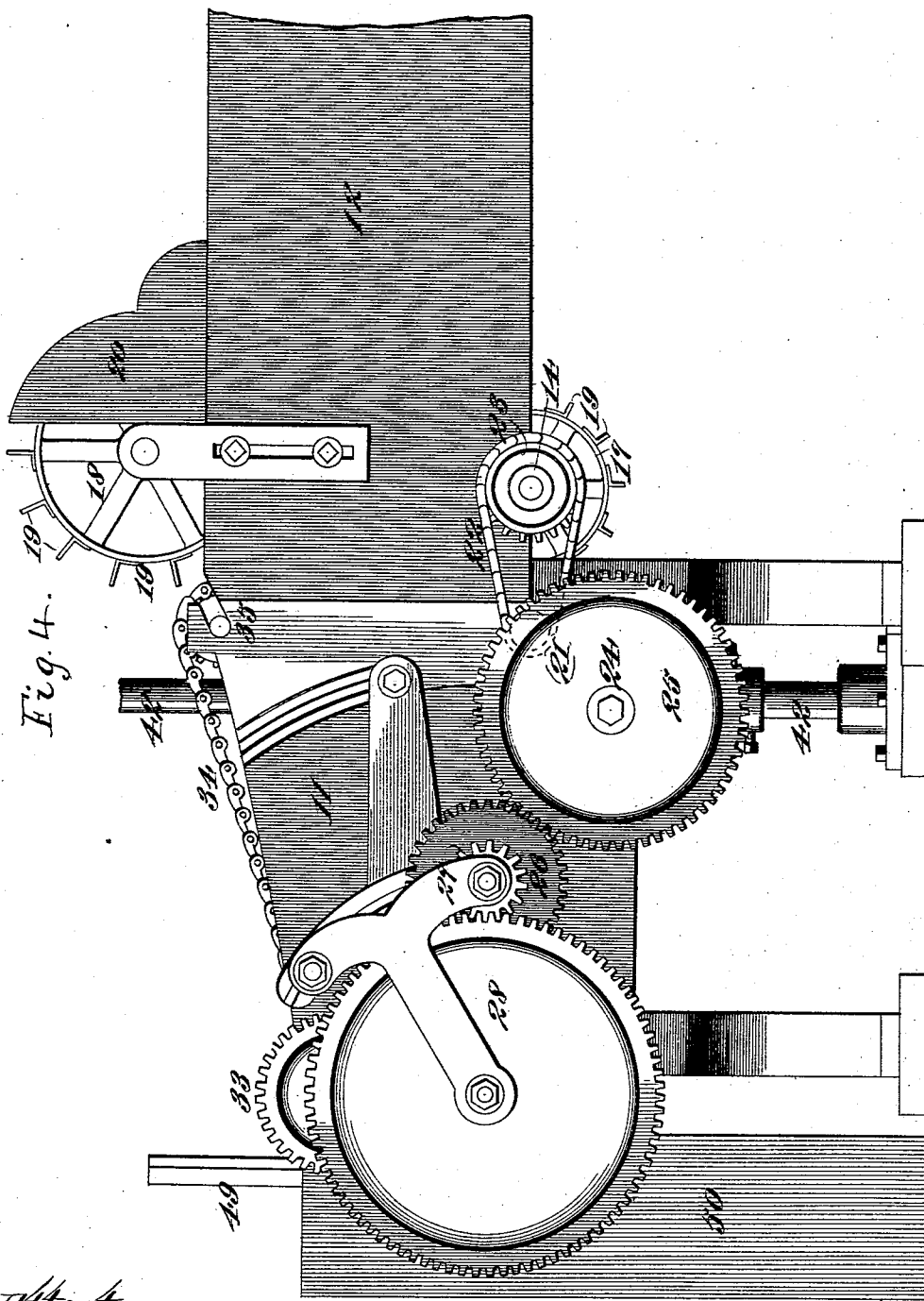


Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE BENTLEY, OF ST. LOUIS, MISSOURI.

TOBACCO-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 572,149, dated December 1, 1896.

Application filed October 18, 1895. Serial No. 566,030. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BENTLEY, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Tobacco-Cutting Machines; and I do 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 the figures of reference marked thereon, which form a part of this specification.

The object of my invention is to provide improved means for condensing and feeding tobacco to a cutting mechanism and improved independent means for driving the condensing and feeding mechanism that delivers the tobacco to the cutter.

My invention consists, further, in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a plan of the complete machine. Fig. 2 is an elevation, partly in section, of the machine. Fig. 3 is an elevation in detail of a portion removed in forming the section Fig. 2. Fig. 4 is an elevation of the machine opposite to Fig. 2.

In the construction of the machine as shown the numeral 10 designates a base on which are supported side pieces 11 12. A bottom 13 is positioned within pairs of the side pieces 12, at a slight distance above the lower edges thereof, and a shaft 14 is mounted transversely of the said side pieces at the forward end of said bottom. A drum is mounted on the shaft 14, and an endless carrier 15, part of which is shown in the drawings, is mounted for travel on said drum and extends along above and below the bottom 13, which carrier is provided with cleats 16, arranged at uniform distances of separation and extending transversely thereof. The tobacco is deposited on the carrier 15 and is conveyed thereby to oppositely-positioned rotary conveyers 17 18, arranged at the forward ends of the side pieces 12, above and below said side pieces and projecting part of the radius thereof into the space between said side pieces. Each of the rotary conveyers comprises a rim-

wheel having flights 19 arranged on their rims parallel with their axes and designed to receive impact with and compress the quantity of tobacco in its passage between said conveyers and feed said tobacco into the space between the side pieces 11. Guards 20 are fixed to the upper edges of the side pieces 12 and prevent accidental manual contact with the conveyer 18. A sprocket-wheel 21 is mounted on the shaft 14, and a sprocket-chain 22 connects said wheel with a sprocket-wheel 23, mounted on the shaft of the conveyer-wheel 17. A drive-shaft 24 is mounted transversely of the base 10, and a gear-wheel 25 is mounted on one end portion of said shaft and meshes with an intermediate gear 26, mounted on a spindle projecting from said base. A pinion 27 is mounted on the spindle which carries the intermediate gear 26, and is connected thereby to said gear 26, and said pinion meshes with a gear-wheel 28, mounted on a spindle 29, fixed to the base. A sprocket-wheel 30 is mounted on the spindle 29 and connected with the gear-wheel 28. A chain conveyer (shown by dotted lines in Fig. 2) connects the sprocket-wheel 30 with a sprocket-wheel mounted on a spindle positioned in the rear portion of the base, and a sprocket-wheel, mounted on the latter said spindle, is connected by a sprocket-chain 31 with a sprocket-wheel on the shaft of the conveyer 17. A gear-wheel 32 is mounted on the spindle 29 and meshes with a gear-wheel 33, mounted on a spindle in vertical alinement with the spindle 29, and a chain conveyer 34 connects the latter said spindle with a sprocket-wheel or drum mounted on the rear portion of the side pieces 11 and designated as 35.

It will be observed that the space between the forward portions of the chain conveyers is materially less than the space between the rear portions of said conveyers, and backing-plates 36 are mounted within the orbits of travel of the conveyers and resist the upward and downward flexures of the lower and upper portions thereof, respectively.

Referring to Fig. 3, it will be observed that a sprocket-wheel 37 is provided on the shaft of the drum 35, and is connected by a pin 38 with a sprocket-wheel 39 on the shaft of the conveyer-wheel 18.

A beveled gear 40 is mounted on the outer end portion of the shaft 24, opposite to the gear 25, which beveled gear meshes with a beveled pinion 41 on a vertical shaft 42, stepped in the base 10. A beveled pinion 43 is mounted on the upper end portion of the shaft 42 and receives power and motion from a beveled spur-gear on a line-shaft 45. The shaft 24, gear 40, pinion 41, vertical shaft 42, beveled pinion 43, and beveled spur-gear 44 conjunctively constitute the driving mechanism of the feeding portion of my machine.

A drive-shaft 46 is supported on one side of one of the side pieces 11 and supported by the base 10, and belt-wheels 47 48, loose and fixed, respectively, are mounted on said shaft and receive motion by belting from a prime mover (not shown) and constitute conjunctively the driving mechanism for the cutting portion of my machine about to be described. A rotating cutter 49 is mounted on the forward end portion of the shaft 46 and comprises a series of radial blades driven in an orbit intersecting the open forward end of the space between the side pieces 11 and between the conveyer-chains. The rotary cutter 49 revolves in a vertical chute 50, which is located at and receives the tobacco from the open forward end of the space inclosed on its sides by the side pieces 11 and on its top and bottom by the conveyer-chains. The chute 50 receives the tobacco after it is cut, as desired, by the rotary cutter 49. The tobacco is withdrawn from the chute 50 and packed, as desired, for disposition.

It will be observed that by providing cleats 16 on the initial carrier a positive forward motion of the tobacco is insured; that by providing the conveyer-wheels 17 18 with flights 19, projecting into the path of the tobacco when the space above the initial conveyer and between the side pieces 12 is filled with tobacco, said tobacco is compressed slightly and moved forward by the conveyer-wheels 17 18 from the initial conveyer to the conveying and compressing chains; that by arranging the conveying and compressing chains in convergent planes from the initial to the delivery ends of the side pieces 11 the tobacco

is received, compressed, and conveyed in compressed form to the cutting mechanism, and that by mounting the rotary cutter or cutting mechanism on a drive-shaft distinct from the conveying mechanism the speeds of the two sets of mechanisms may more readily be differentiated.

What I claim is—

1. In a cutting-machine, an initial endless conveyer to which material is fed, upper and lower conveyer-wheels constituting a pair, each provided with flights and spaced apart, the lower wheel being arranged in advance of the initial conveyer to take the material therefrom, a pair of conveyer-chains arranged in front of the pair of conveyer-wheels and adapted gradually to compress the material being operated upon, in combination with a rotating cutter to which the material is fed by said chains, means for driving the feeding mechanism mentioned and means independent therefrom for driving the cutter, all the parts being arranged in a suitable hopper or box.

2. In a cutting-machine a hopper or box, an initial conveyer of endless form mounted therein to which material is fed, upper and lower conveyer-wheels constituting a pair, each provided with flights and spaced apart, the lower wheel being arranged in an opening in the bottom of the hopper or box in advance of the initial conveyer to take the material therefrom, the material being held down to the lower conveyer-wheel by the upper conveyer-wheel, a pair of conveyer-chains arranged in front of the pair of conveyer-wheels and adapted gradually to compress the material being operated upon, in combination with a rotating cutter to which the material is fed by said chains, means for driving the feeding mechanism mentioned and means independent therefrom for driving the cutter.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE BENTLEY.

Witnesses:

ANNA SCHOEPP,
CORA SMITH.