

(No Model.)

2 Sheets—Sheet 1.

C. NEWKIRK & C. MILLINGTON.
TOBACCO CUTTING APPARATUS.

No. 531,693.

Patented Jan. 1, 1895.

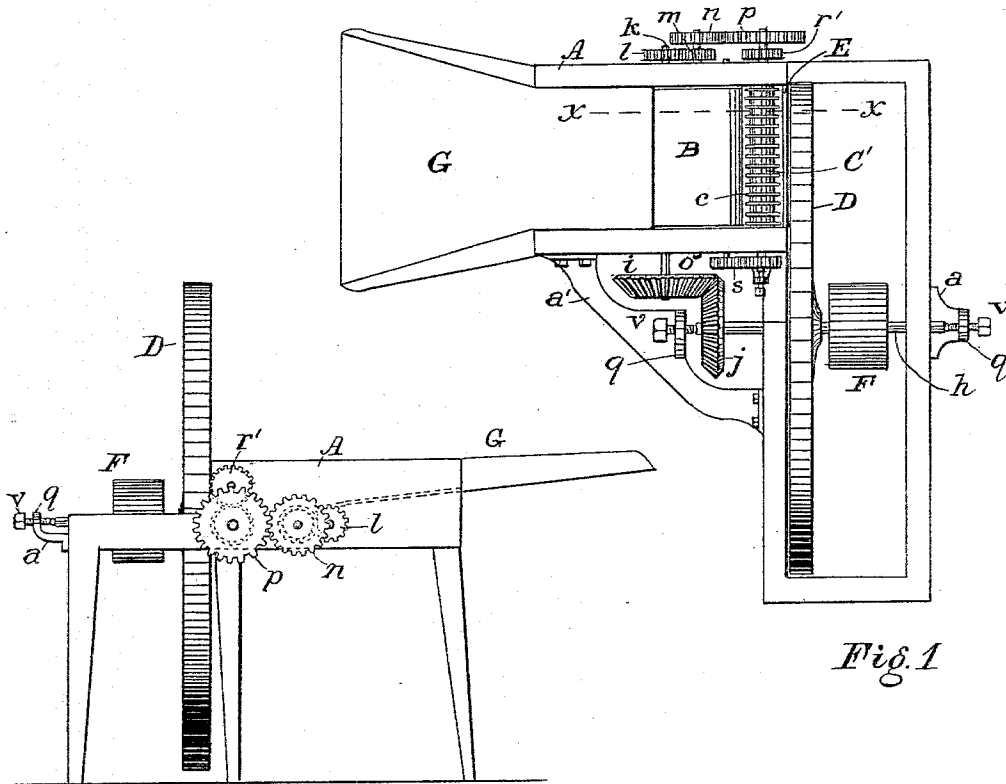


Fig. 1

Fig. 2

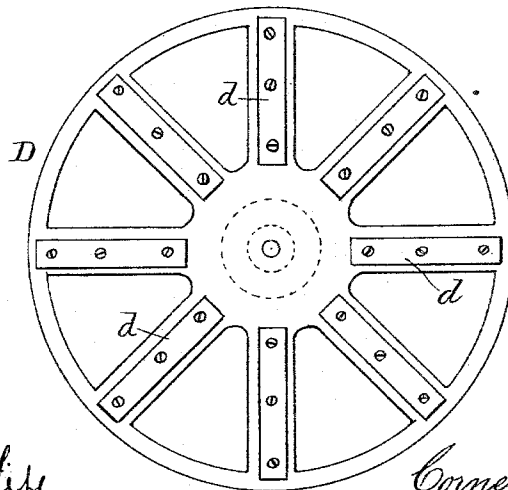


Fig. 4

WITNESSES

Sam Buntiss
Roland Rider

INVENTORS:

Cornelius Newkirk
Charles Millington
by C. M. Morse Atty

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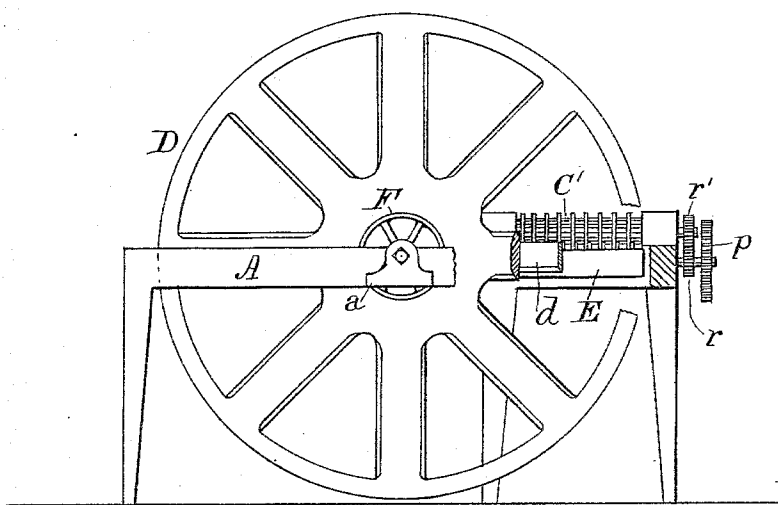


Fig. 3

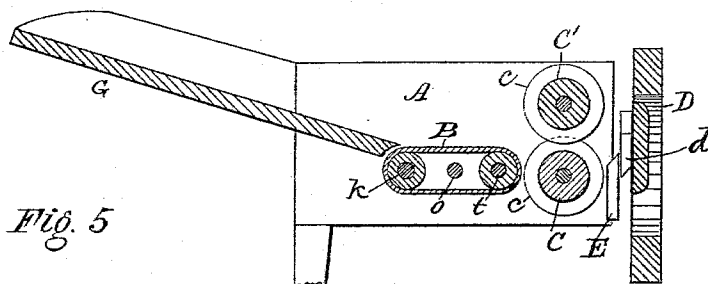


Fig. 5

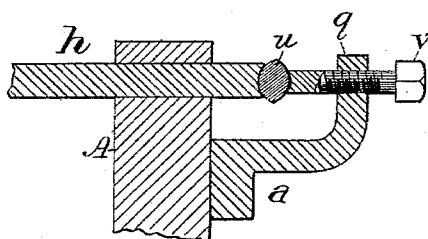


Fig. 6

Witnesses

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Inventors

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UNITED STATES PATENT OFFICE.

CORNELIUS NEWKIRK AND CHARLES MILLINGTON, OF CLEVELAND, OHIO;
SAID MILLINGTON ASSIGNOR TO SAID NEWKIRK.

TOBACCO-CUTTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 531,693, dated January 1, 1895.

Application filed April 25, 1894. Serial No. 508,925. (No model.)

To all whom it may concern:

Be it known that we, CORNELIUS NEWKIRK and CHARLES MILLINGTON, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Tobacco-Cutting Apparatus; and we 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.

Our invention relates to apparatus for stripping and cutting tobacco. Its object is to improve the construction and increase the efficiency of such apparatus; and it consists in the combination and arrangement of means to effect those ends, as hereinafter described and pointed out in the claims.

In the annexed drawings Figure 1 represents in plan view a machine embodying our invention. Fig. 2 is a side elevation of the same. Fig. 3 in an end elevation, partly broken away to display parts of the mechanism. Fig. 4 is a front elevation of the cutter-wheel detached, showing the knives in place thereon. Fig. 5 is a partial section, taken on the line $x-x$ of Fig. 1, through the feeding apron and knives. Fig. 6 is a partial section through the center of the cutter-wheel shaft, showing the construction of the adjusting mechanism and the friction-relieving device or ball-bearing.

A represents the bed or frame of the machine, which may be of wood or iron.

B is the feeding-apron which delivers the tobacco to the slitting-knives or rolls C C', by which the material is cut into narrow strips.

D is the cutter-wheel carrying on its face, on the side toward the rolls C C', a series of radially arranged knives $d d d$, which cut against a stationary bed-knife E, set vertically, below and in front of the rolls C C', the action being that of a shearing cut, as seen in Fig. 3.

F is a pulley on the shaft of the cutter-wheel, for applying power to the machine, and G is a hopper into which the material to be cut is thrown, passing down the inclined floor thereof upon the endless apron by which it is fed to the knives.

In the machines at present in use the cutting knives require frequent adjustment, as the wear is considerable and the knives require frequent grinding, and must, after every grinding be adjusted anew, and be so set as to compensate for their reduced dimension caused by grinding. This operation requires great care and consumes much time, all of which is saved by our invention, as the knives require no adjustment when taken off and replaced.

The cutter-wheel D is faced off to a true plane on the side toward the rolls C C', and the knives $d d d$ are made of equal thickness and set flat upon the plane face of the wheel D, with their cutting edges of course set in the direction of its rotation. As the knives $d d d$ are flat and of equal thickness, their cutting edge, being on the outer face, remains in the same plane after grinding, so that it is only necessary to replace the knife in its former position, to insure its being correctly set. The bed knife E in like manner sets against a flat, rigid surface, so that when returned to its place after grinding its edge is always in the same vertical plane.

The endless apron B runs upon rollers driven in any preferred manner from the shaft which receives the power. As shown in the drawings, power is applied to the shaft h of the cutter wheel by means of the pulley F, and by means of bevel gears $i j$ rotation is effected of the shaft k and a gear l thereon, which meshes with a gear m on a shaft o which also carries a gear n meshing with a gear p on the shaft of the lower slitting roll C. Another gear r on this same shaft engages a like gear r' on the shaft of the upper slitting roll C', and thus moves the rolls C and C' synchronously, causing the circular knives c with which each is armed to cut against each other with a continuous shearing motion. A gear at the opposite end of the roll C' meshes with a gear s on a shaft carrying the roller t which actuates the endless apron B.

The gears l, m, n and p can be changed at will so as to impart any desired rate of speed to the feeding apron B, and to the slitting rolls C C', and in this way the fineness of the cut may be regulated with great exactness. Obviously a high speed of the cutter wheel D and a slow

speed of the apron B and rolls C C' will give a very fine cut, and by quickening the speed of the apron B and rolls C C' with relation to the wheel D, the cut can be made coarser to any desired degree.

A very delicate adjustment laterally of the wheel D is effected by making the shaft *h* movable endwise in its bearings on the frame A, by which means the friction of the knives *d d* on the knife E in their shearing action may be relieved. Brackets *a a'* are secured to the frame A and carry lugs *q* opposite each end of the shaft *h*. Through each of these lugs is threaded a set screw *v* bearing against the end of shaft *h*. To relieve the friction caused by the end-thrust of shaft *h* the ends of the shaft and of the set screws are made slightly cup-shaped, and a ball or button *u* of hardened steel is interposed between them, giving an exceedingly smooth and easy motion, with the least possible friction.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a tobacco cutting machine the combination with a pair of slitting rolls and a bed knife parallel with the axis thereof, of a cutter wheel rotating in a plane parallel with the

bed knife and carrying on its face flat radial cutters which have parallel sides and are detachably secured to the wheel with their cutting edges parallel with the face thereof, said wheel being mounted on a shaft which has endwise play, and adjusting screws bearing against the ends of said shaft, substantially as described.

2. The combination, in a tobacco cutting machine, of the slitting rolls, the bed knife set parallel therewith, the feeding apron, the cutter wheel rotating in a plane parallel with the bed knife, the cutting knives with parallel sides detachably secured to said wheel, the set screws arranged to impart endwise motion to the shaft of the cutter wheel, and the balls or buttons interposed between the ends of the shaft and the set screws, substantially as described.

In testimony whereof we hereto affix our signatures in presence of two witnesses.

CORNELIUS NEWKIRK,
CHARLES MILLINGTON.

Witnesses:

ROMAINE C. COLE,
WM. G. TAYLOR.