D. W. DeFOREST.

Lump-Tobacco Machine.

No. 161,331. Patented March 30, 1875.

Fig. 2.

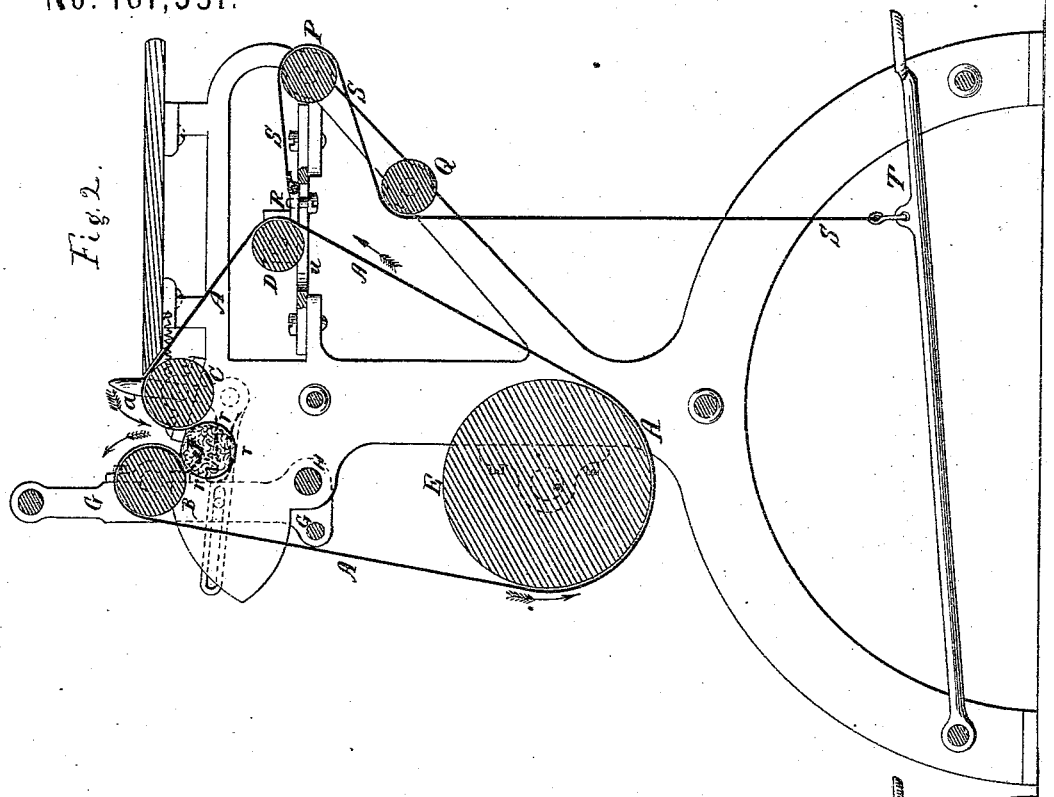
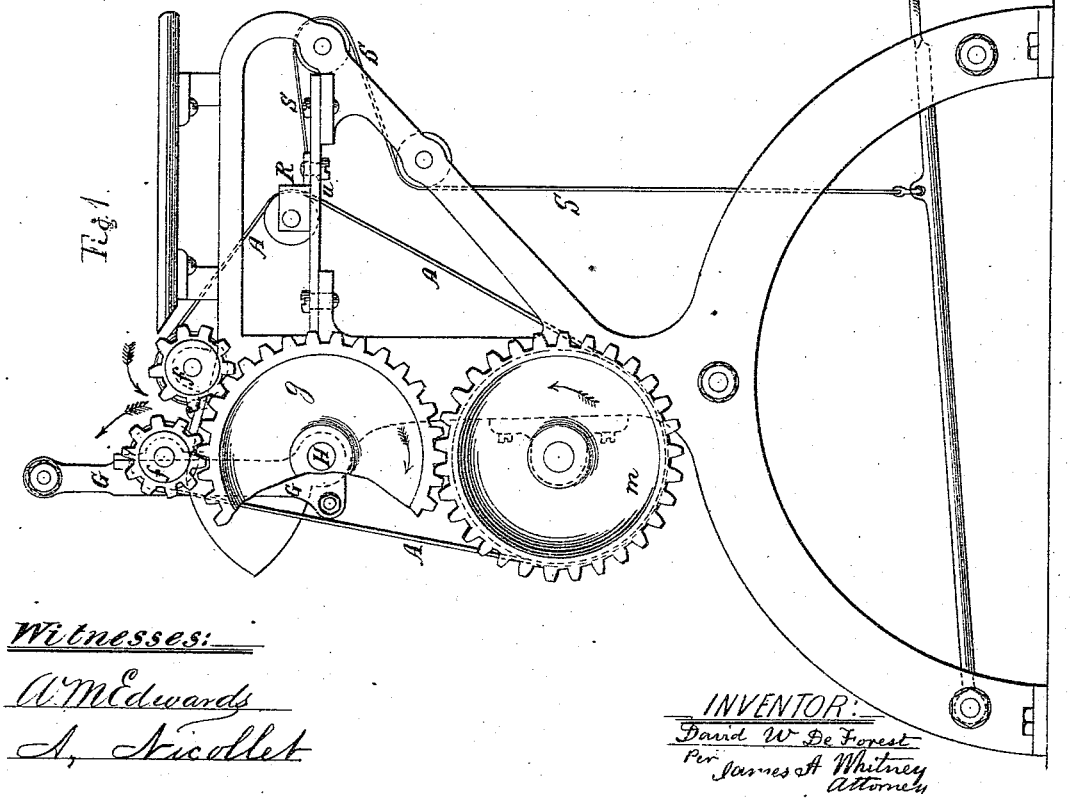


Fig. 1.



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UNITED STATES PATENT OFFICE.

DAVID W. DE FOREST, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LUMP TOBACCO-MACHINES.

Specification forming part of Letters Patent No. **161,321**, dated March 30, 1875; application filed October 2, 1874.

To all whom it may concern:

Be it known that I, DAVID W. DE FOREST, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Machines for Covering Tobacco, of which the following is a specification:

This invention relates to that class of machines used for winding or coiling a strip or fillet of flat material upon a roll of tobacco, as, for example, a strip of paper upon a cylindrical filling of cut or granulated tobacco, or a strip of leaf upon an ordinary cigar-filling.

My invention comprises a novel combination of parts, whereby the rolling or coiling devices are caused to have that movement with reference to the material under treatment, most effective in snugly and symmetrically winding the fillet upon the filling, also, a novel combination of parts whereby the rolling or coiling devices aforesaid may be made to act upon the filling with any requisite pressure during the operation of winding the fillet thereon.

Figure 1 is a side elevation, and Fig. 2 a central vertical longitudinal section, of a machine made according to my invention.

A is an endless apron which passes over the two rolls B C, the idler-roller D, and the driving-drum E, as more fully shown in Fig. 2. The roll B has its bearings in a frame, G, pivoted on a transverse shaft, H, in such manner that the roll B may, when desired, be swung away from the immediate neighborhood of the other roll, C. Normally, however, this roll B is fixed at a definite distance from the roll C by means of an automatic catch, *a*, that holds upon a suitable stud or shoulder provided to the frame G. The roll C has fixed bearings provided upon the supporting-frame of the apparatus. Each of the rolls B C has at one end of its shaft a spur-pinion, *f*, into which gears a spur-wheel, *g*, on the shaft H, and into this spur-wheel *g* gears a similar spur-gear, *m*, arranged on the adjacent end of the shaft of the drum E. That portion of the apron A between the two rolls B C is depressed, as represented more plainly in Fig. 2, forming a three-quarter cylindrical pocket, *r*, lengthwise between the rolls. It is in this pocket that the filling, or tobacco to be covered, is placed, in order to have the fillet or wrapper wound thereon. This being done, and motion being given by any suitable means to the drum E, in the direction indicated by the arrow, the spur-gear *m* turns the spur-wheel *g*, and this gives rotary motion in the same direction to the spur-pinions *f*, and, of course, to the rolls B C. The said rolls and the drum co-operate in revolving the endless apron, which carries the filling J, whereby it is continuously rotated within the pocket *r*, the rolls sustaining the filling by supporting the pocket against its upward thrust or from adhering to the under and inner sides of the said rolls. The definite and positive movement of the rolls with reference to each other, to the endless apron, and to the drum, is essential to the proper operation of the pocket, in giving the requisite rotating movement to the filling J. While the filling is being thus rotated, one end of the fillet or wrapper is inserted obliquely behind the filling, between the same and the apron, at a point adjacent to the roller B, and the rotation of the filling quickly draws inward the fillet and winds it spirally upon the filling. When this winding is completed, the roll B is thrown back to permit the removal of the completed work, and the insertion of new material to be operated upon in the same manner.

It is desirable that, in the operation of the machine, as just described, the filling should be pressed upward so that it will bear against the rolls B C, in order that it may be compressed and most effectually brought to cylindrical form. In order to do this, the idler-roller D is arranged in a sliding frame, R, which moves upon fixed guides U, and has attached to it one end of a strap, S, which, after passing over two pulleys, P Q, descends and has its opposite end attached to a treadle, T. This treadle, being depressed by the foot of the attendant, draws the sliding frame and, consequently, the idler-pulley, outward, thereby drawing upward and reducing the diameter of the pocket *r*, to compress the filling, as hereinbefore described, during the rotation thereof, by which means the fillet or wrapper is snugly fitted to the said filling,

and the requisite density or consistence given to the latter.

It may be found advantageous in some instances and upon some kinds of work to use friction-gears, in place of some or all of the gears above referred to, which will not change the character of my invention.

What I claim as my invention is—

1. The combination of gears *g m f f*, drum E, rolls B C, belt A, and pivoted frame G, as described.

2. The combination of gears *g m f f*, drum E, rolls B C, frame G, and the sliding roll D, band S, and treadle T, as described.

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