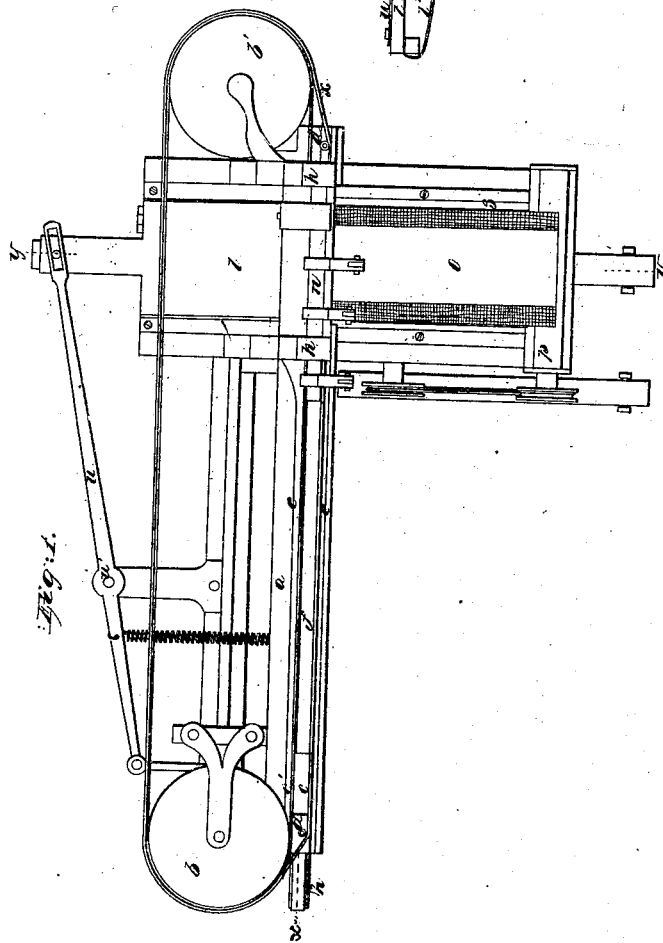
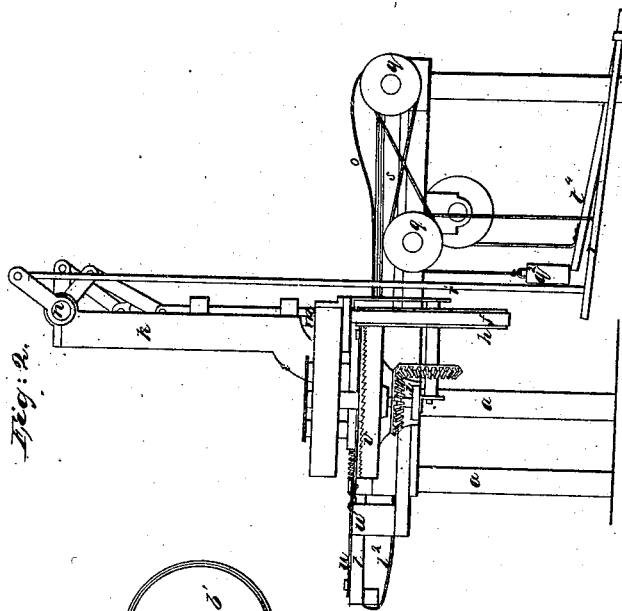


S. E. Hartwell, W. M. & De G. Fowler ^{2 sheets, sheet 1.}

Making Cigars.

N^o 5,110.

Patented May 8, 1847.

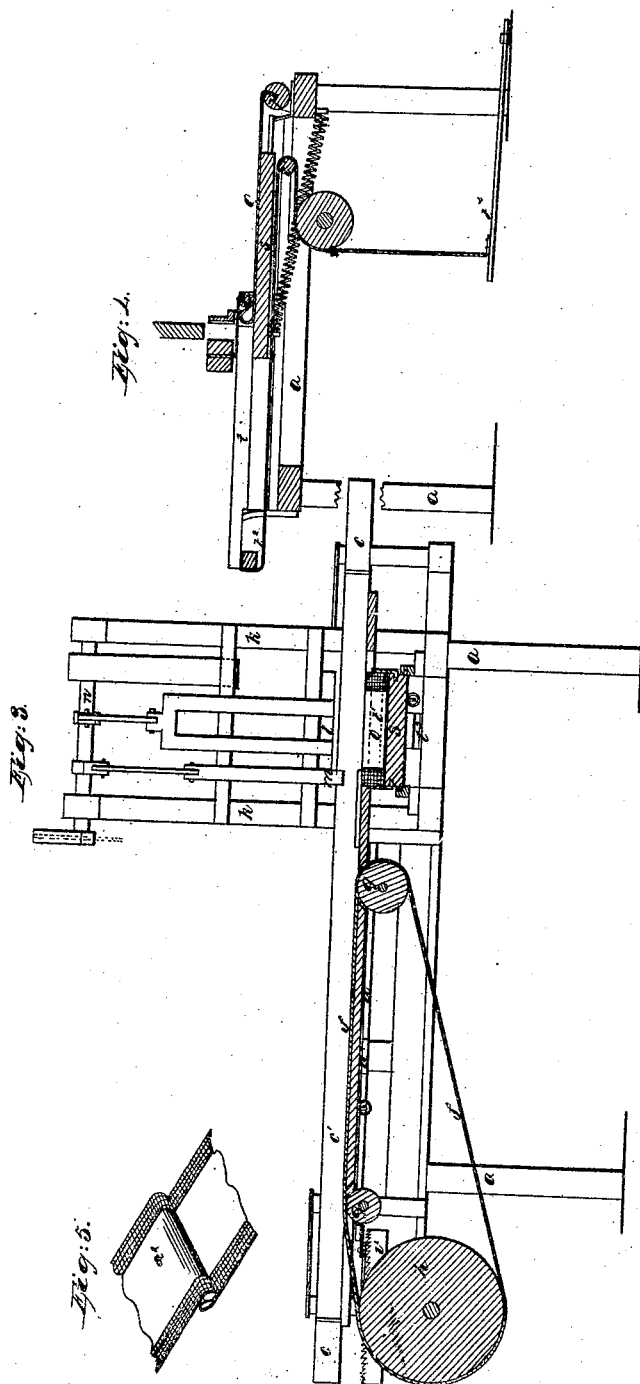


S. E. Hartwell, W. M. & De G. Fowler, ^{2, Sheet 4, Sheet 2.}

Making Cigars.

Patented May 8, 1847.

N^o 5,110.



UNITED STATES PATENT OFFICE.

SAML. E. HARTWELL, OF NEW YORK, N. Y., AND W. M. FOWLER AND DE G. FOWLER, BOTH OF WATERBURY, CONNECTICUT.

IMPROVEMENT IN MACHINERY FOR MAKING CIGARS.

Specification forming part of Letters Patent No. 5,110, dated May 8, 1847.

To all whom it may concern:

Be it known that we, SAMUEL E. HARTWELL, of the city, county, and State of New York, and W. M. FOWLER and DE GRASSE FOWLER, both of Waterbury, in the county of New Haven and State of Connecticut, have invented new and useful Improvements in Machinery for the Manufacture of Cigars; and we do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top plan of the machine; Fig. 2, an end elevation. Fig. 3 is a vertical section through the line X X of Fig. 1. Fig. 4 is a vertical section through the line Y Y of Fig. 1.

The same letters indicate like parts in all the figures.

The nature of our invention consists in forming the filling of cigars and covering them with a wrapper by machinery, by which the process is facilitated and greater perfection is attained in forming the cigar, while fine-cut or other tobacco can be used for the fillers without waste.

The machinery is constructed in the following manner: On a table or frame, *a a*, of suitable form, two large horizontal pulleys, *b b'*, are supported on the upper end of vertical shafts, which have their bearings in the frame below, one being placed at each end of said frame. Two bands, *c c'*, are put upon these pulleys *b*, one over the other. They are separated on the front side of the table by two rollers, *d d*, placed at sufficient distance from the pulleys on studs affixed to the frame. The outer belt, *c*, passes round outside these rollers, and is thus separated from the inner one, *c'*, which is extended straight from one pulley to the other, forming a sufficient space between them to receive the filling for the cigars to be made of. On the outside of each band there is a straight piece, *e e'*, that is attached to the table and extends the whole length of the space the bands are separated. These are for the purpose of support to the bands. An-

other band, *f*, is made to run on a level with the lower edge of the former ones, thus forming a sort of a trough, into which the filling is put. This latter band is supported by the table, over which it passes and around two small pulleys, *g g*. Thence it runs around a large pulley, *h*, situated opposite to one of the pulleys *b* on a horizontal shaft, the two being geared together by bevel-gear. (Shown at *i*, Fig. 2.) By this means the fillers can be put in and carried forward as the pulleys turn. Near the end of the table opposite the gearing just above named there is a frame, *k*, erected, in which an oblong piece of wood, *l*, the length of cigar to be made, slides up and down between the belts *c c'*, beyond the lower belt, *f*, where a hole is cut through the table for the purpose of allowing the filler to descend into the apparatus where it is to be covered. The filler is cut off by a V-shaped tool, *m*, to the right length for the cigar before it is borne down, the angular cut forming the taper at the ends. The cutter slides in the same frame as the follower *l*. They are moved by the rotation of a shaft, *n*, supported in the frame above, having arms projecting therefrom, which are connected with the slides by pitmen. The cutter is made to precede the follower in its downward motion, and does not descend so far. A belt or apron, *o*, is attached to the permanent frame by one end just behind the follower *l*. It is thence carried forward, and is attached at its other end to a roller, *p*, (around which it is wound with one or two turns,) located in a portion of the frame that projects forward at this point, as is clearly shown in the plan, Fig. 1. This part of the apparatus is the most important improvement in the machine.

The middle of the belt or apron is made of any suitable smooth pliable substance, as shown at *a'*, Fig. 5, and the two edges *b'* are composed of an elastic medium—such as shirred india-rubber goods or other similar article—which is stretched straight when fastened to the center piece, and can contract, as hereinafter described. To keep the belt or apron wound onto the roller *p* with sufficient tension, there is a pulley, *q*, on the shaft of the roller, to which a cord is fastened, that passes over another roller, *q'*, and thence to a

weight, q'' , sufficiently heavy for the required tension. Another cord passes round the pulleys the reverse way, and thence to a treadle, r , below, so that when the treadle is borne down the apron is slacked up. This treadle is connected by a rod, r' , with an arm on the shaft n , above named, which moves the cutter and follower.

There is a sliding table, s , under the apron, that extends from the roller p to the hole through the table above, so that when the follower is pressed down and the apron is slacked up by the descent of the treadle, the filler is forced down into the bight of the slacked apron below the edge of the sliding table s , where it is held till the table moves back into the position shown in Fig. 4, the end passing under the roller t' , placed in front of another slide, t , to which it is attached, leaving space enough between said roller and the end of the slide t for the reception of the filler in the bight of the apron, which is clearly represented in said Fig. 4. The follower is then raised and the slide t drawn forward, rolling the filler round in the bight of the apron as it is drawn along. The wrapper is placed upon the apron in the proper position, and is thus wound around the filler. The edges of the apron, contracting, finish the ends, and when the roller passes over the end of the table the cigar is released. The movement of these slides is effected by attaching a strap, f , to the rear end of the upper slide, t , and passes forward over a roller, f' , affixed to the under side of the table, and thence back over another roller and down to a treadle, t' , below, by which it is worked. By forcing down the treadle it is obvious the various motions above described will be made. The upper slide has a bar, u , attached to its rear end, that extends out toward the shaft of the pulley b , on which there is a crown ratchet-wheel, v . This bar has a fulcrum at u , attached to the frame, and on the short arm a pawl is affixed, that plays into the teeth of the ratchet-wheel v . By this arrangement it is obvious that as the slide t is drawn forward the pulleys b b' are turned a sufficient distance to carry forward the filling under the follower to a proper length for a cigar. This length is regulated by making the pawl adjustable.

The operation of this machine is as follows: The filling is put into the space between the belts c c' and drawn forward under the follower to the proper length for a cigar. The treadle

r is then borne down by the foot of the operator, which cuts off the filler by means of the cutter m . It is then pressed down by the follower into the bight of the apron, as before described. The other treadle is then made to descend, which gives motion to the two slides in the manner already specified, and the filler is rolled forward in the bight of the apron on the table s , a wrapper being first placed on the apron in front, which, by the action of the apron, is drawn into the bight and wound round the filler. The whole is then continued on to the end of the table, where the bight is relieved and the cigar thrown out.

It is obvious that if the cigar is to be of any other form than cylindrical the form of the roller t' and the table s should be made to correspond with its outline. A roller of this description is shown in the diagram, Fig. 4. The knife that cuts off the filler may also be of any angle or straight, to suit the work to be done. It is obvious that the apron can be drawn through a stationary recess, instead of holding its end permanent and moving the slides. Other modes of feeding in the filler can be employed, some of which we have essayed, but deem the manner more particularly described as perfect as any.

Having thus fully described our improvements, what we claim as our invention, and desire to secure by Letters Patent, is—

1. The employment of a flexible apron, substantially in the manner described, for rolling the fillers of cigars into form and covering them with the wrapper, as herein set forth.

2. Forming the edges of said belt of elastic material for shaping the taper at the ends of cigars.

3. The employment of the roller and weight with the apron for maintaining the tension of the apron and determining the pressure upon the cigar.

4. In combination with the above, the movable trough formed of a series of belts, for receiving the filling and carrying it forward, as above specified, and the cutter and follower for cutting off the cigar and carrying it into the bight of the apron, as herein described.

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WM. M. FOWLER.
DE GRASSE FOWLER.

Witnesses:

BURE PERKINS,
JOHN W. WEBSTER.