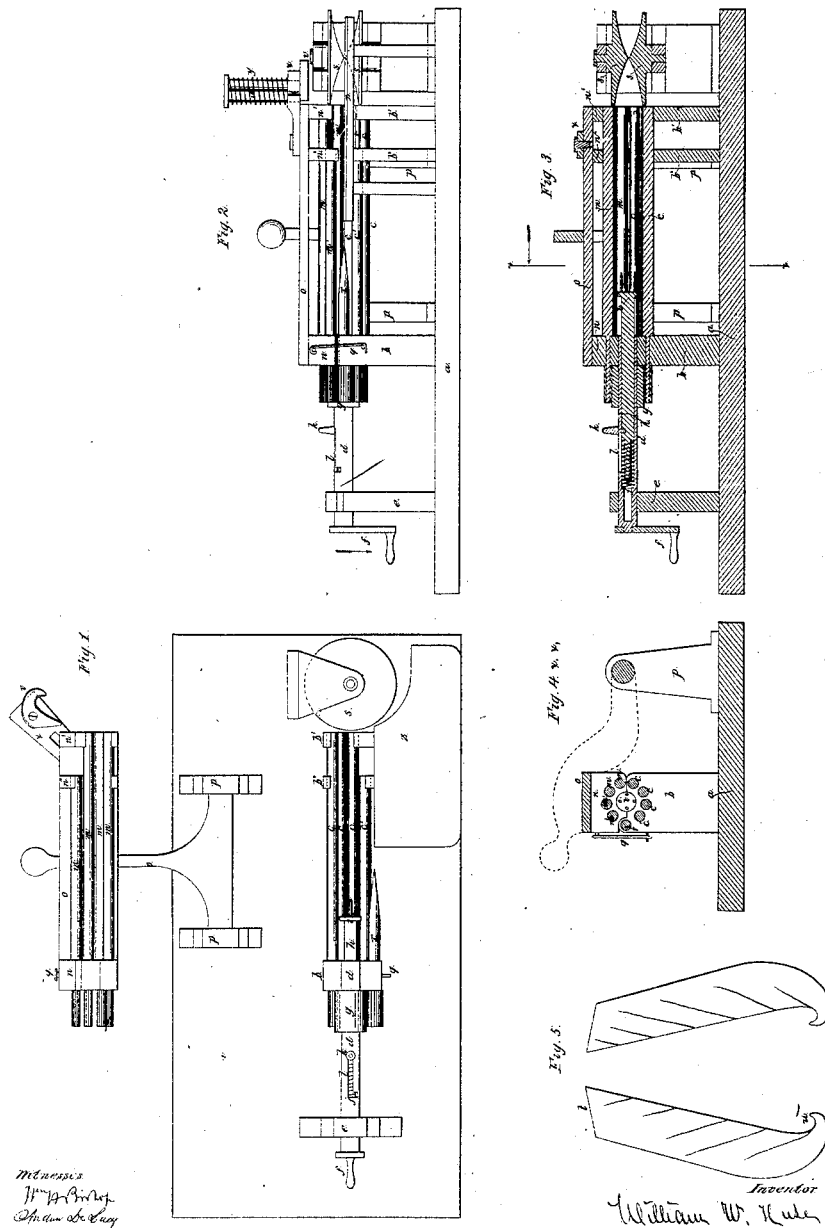


W. W. Hulse,
Cigar Machine,

No. 45,326.

Patented Dec. 6, 1864.



UNITED STATES PATENT OFFICE

WM. W. HUSE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING CIGARS.

Specification forming part of Letters Patent No. 45,326, dated December 6, 1864.

To all whom it may concern:

Be it known that I, WILLIAM W. HUSE, of Brooklyn, Kings county, and State of New York, have invented certain new and useful Improvements in the Machine for Making Cigars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of the machine with the upper rollers and the frame in which they are mounted turned over; Fig. 2, a front elevation; Fig. 3, a longitudinal vertical section; and Fig. 4, a cross-vertical section, taken in the plane of the line *x x* of Fig. 3.

The same letters indicate like parts in all the figures.

Attempts have been made, but without success, to form cigars by means of four parallel rollers arranged about a common center to form a cavity between them of the size of the cigars to be formed, so that by placing the tobacco within the said space the turning of the said four rollers should roll the filling-tobacco into the required shape and afterward put on the leaf covering. I have discovered, however, that such an arrangement will not answer the purpose for various reasons. If the required quantity of tobacco to form a cigar be put into the space between the rollers, the periphery of four rollers will not take sufficient hold of the tobacco filling to roll it around; and if the quantity of tobacco be increased relatively to the space between the four rollers that the rollers may press more strongly against the tobacco, they will simply indent and turn on the tobacco without rolling it; and even if four rollers could roll and form the cigar, such method would be of no practical utility, for the want of suitable means for forming the tip or pointed end of the cigar. I have discovered, however, that by making the rollers of less diameter and increasing the number of them to not less than six, they will take sufficient hold of the tobacco to roll and form it, and that by the addition of suitable means, such as hereinafter described, to form the tip or pointed end, cigars can be manufactured successfully.

My said invention consists in combining,

with the rollers for forming the body of the cigars, disks with their faces curved, so that the space between their faces will be of the form of a section of the pointed and curved head of a cigar, and each turning on a separate axis at or nearly at right angles with the axes of the rollers, so as to make pressure in succession on every part of the circumference of the tip or head of the cigar by rolling thereon and thereby give the required shape.

In the accompanying drawings, *a* represents a platform or bench, and *b b' b''* three poppet-heads, in which are mounted four parallel rollers, *c c c c'*, arranged in the segment of a circle. The rollers have journals near one end only, fitted to turn in the poppet *b*, and the other two poppets are formed with cavities to receive and simply sustain the rollers without journals. The poppet *b''* is placed at a short distance from the poppet *b'*, which sustains the ends of the rollers which are not journaled, and it is so placed because one of the said rollers, *c'*, is shorter than the others, for a purpose to be presently described. A hollow shaft, *d*, has one end mounted in the poppet *b* and the other end in another poppet, *e*. The outer end is provided with a crank-handle, *f*, or other suitable means by which it can be turned. Outside of the poppet *b* it is enlarged in diameter by a sleeve of vulcanized india-rubber, *g*, firmly attached thereto, to bear against and take hold of the cogs on the outer ends of the rollers *c c c c'*, by which they are all rotated in the same direction and with equal velocity; but, if desired, other and equivalent means may be substituted for rotating the rollers.

To the inside of the hollow shaft *d* is fitted a rod, *h*, which is free to slide therein. One end projects a short distance within the space formed by the rollers, and it is forced with a head, *i*, of about the diameter of the cigars to be made, and from the outer face of this head project four (more or less) sharp-pointed pins. A helical spring, *j*, inside the hollow shaft, presses against the rod *h*, and tends to force the head *i* toward the other end of the rollers. The rod *h* is provided with a handle, *k*, that projects through a slot, *l*, in the hollow shaft. The length of this slot gages the extent to which the sliding rod can be forced by the

spring, and a notch is formed on one side of the slot, into which the handle *k* is turned to hold back the rod when desired. Four rollers, *m m m m'*, in all respects like the rollers *c c c c'*, are mounted in like manner in inverted poppets *n n' n''*, which are secured to or make part of a frame, *o*, connected by journals with two standards, *p p*, so that the frame and rollers can be turned up to give free access to the hollow trough formed by the surface of the four rollers *c c c c'*. When the said frame *o* is turned down and fastened by a catch, *q*, the two series of rollers are around a common center and at equal distances from such center, forming a hollow space of the required capacity to hold a cigar of the desired size. Another roller, *r*, is mounted in the poppet *b*, and opposite the space between the two rollers *c'* and *m'*, which are in front, the space between these two rollers being greater than between the others. The roller *r* is considerably shorter than the others, and I prefer to make it pointed or rounded at the end. The purpose of this roller is to feed in the leaves of tobacco that constitute the wrappers, and, like the other rollers, it is provided with cogs, by which it is rotated, and as the axis of this feed-roller is at a greater distance from the center of the space in which the cigar is formed than the others, its cogs must be of greater diameter to receive motion. By reason of this the surface of the roller will travel with less velocity than the other rollers, which will give it a tendency to hold back the leaf of tobacco and keep it in a state of tension after it is taken hold of by the other rollers.

At the extreme end of the rollers *c* and *m* there are two disks, *s s*, each connected by its journal with the frame, so that one can turn independently of the other. The axes of the two are in the same line and at right angles to the axis of the hollow space or cavity formed by the series of rollers *c* and *m*. The opposite faces of these two disks are so formed that their centers are nearly in contact, and from the center to the periphery so curved that a section through both in the plane of their axes will form a space corresponding with the form of the section of the tip or head of the cigar intended to be formed.

To operate with the machine, a bunch of filling-tobacco suitable for a cigar is put into the trough-like space formed by the bottom rollers, and the frame with the top rollers *m* brought down into position and fastened by the catch. The head *i* is then liberated and by the tension of the spring *j* forced against the butt-end of the bunch of tobacco, and its pins forced into the bunch. The shaft *d* is then rotated, by which motion is communicated to all the rollers, and by them, aided by the pins of the head *i*, the bunch of tobacco is rolled into shape, and while it is rolled the outer end is gradually forced into the space between the two disks *s s*, the surfaces of which gradually roll it to the form required

for the tip, sometimes called the "head," of a cigar. After the shape has been given to the filling, the leaf wrapper is to be put on, and as the wrappers are cut from opposite sides of the center stem of the leaves of tobacco, and they are wound on from the butt toward the tip or head, the machine must be turned alternately in opposite directions.

Two wrappers of the usual form are represented in Fig. 5 of the accompanying drawings, as they are usually cut from the opposite sides of a leaf. When a right-hand wrapper is to be applied, the machine is turned in the direction of the arrow, (see Fig. 2,) and the end *t* of the leaf is introduced diagonally on the under surface of the short feed-roller *r*, by which it is introduced to the surface of the previously-formed roll of filling, and by it and the series of rollers *c* and *m* wrapped around from the butt toward the head. As the wrapping approaches the head of the cigar, the other end of the wrapper is cut to the form shown at *u* to go properly around the tip or head. This form may be cut by hand in the usual way before the wrapper is applied; but I prefer to do this by a cutter at the time of wrapping, as this avoids the necessity of always inserting the wrapper at the same exact inclination. The cutter *v* of the required form is attached to a block on the lower end of a rod, *w*, which slides vertically in a bracket, *x*. It is held up by the tension of a helical spring, *y*, and when the wrapping approaches the disks *s s*, the portion required for the head lies on a table, *z*, in front, and the attendant forces down the cutter, and then continues the wrapping until completed. The frame with the upper rollers *m* is lifted, and the formed cigar taken out, and the operation repeated. After a given number of cigars with right-hand wrappers have been made, the shaft *d* is to be turned in the reversed direction, and the left-hand wrappers are to be introduced above the feed-roller *r*.

It has been stated that roller *c'* of the lower set and roller *m'* of the upper set are shorter than the others. The object of this is to relieve the wrapper from the strain to which it would otherwise be subjected in being wrapped around the head. By making these two rollers shorter, the wrapper is wound around the curved head of the cigar by the rolling curved faces of the disks *s s* without straining or friction on the tobacco.

I do not wish to be understood as making claim in this application to the rolling disks for forming the head of the cigar irrespective of the combinations described, as the said disks for this purpose are claimed in another application of even date with this.

I claim—

1. In combination with a series of rotating rollers arranged about a common center, substantially as described, the rotating head with pins that enter the bunch of tobacco, substantially as described.

2. In combination with a series of rotating rollers arranged about a common center, substantially as described, the rolling disks turning on axes at or nearly at right angles with the axes of the rollers, for forming the head of the cigar, substantially as described.

3. In combination with a series of rollers for forming the body of the cigar, and with

the disks for forming the head of the cigar, the cutter for cutting the end of the wrapper at the right place for finishing the head of the cigar, substantially as described.

WILLIAM W. HUSE.

Witnesses:

WM. H. BISHOP,

ANDREW DELACY.