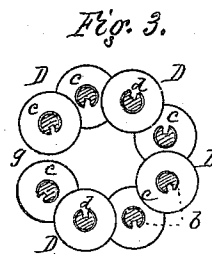
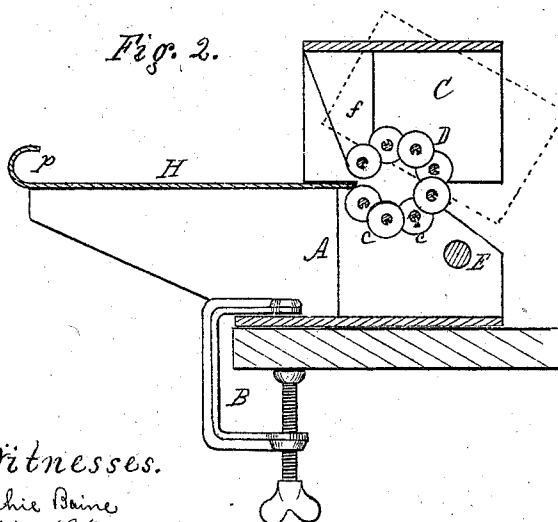
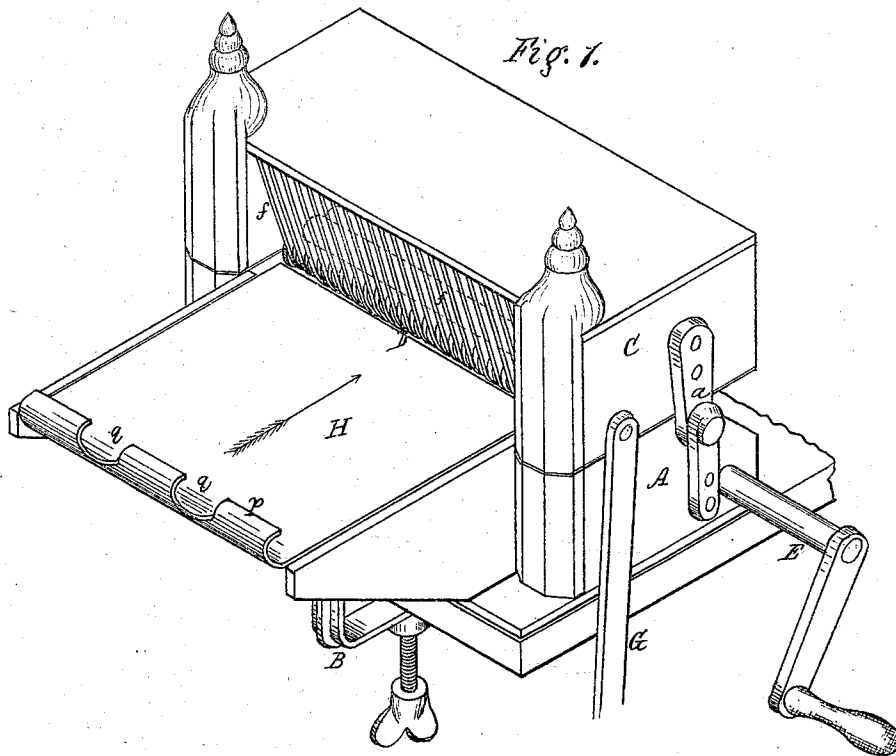


**C. J. DELBRIDGE.**  
**Cigar-Machines.**

No. 140,896.

Patented July 15, 1873.



*Witnesses.*  
Archie Baine  
William C. Baine

*Inventor:*  
Charles J. Delbridge  
per R. T. Osgood  
att'y

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Fig. 4.

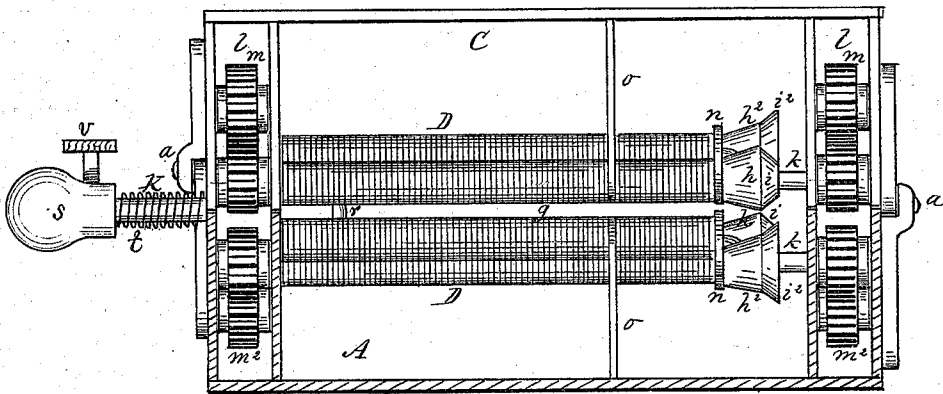


Fig. 5.

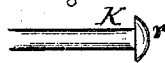


Fig. 6.

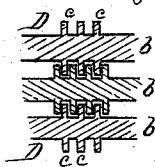
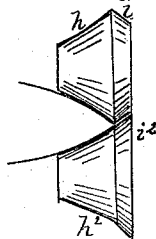


Fig. 7.



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William C. Baine  
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atty

# UNITED STATES PATENT OFFICE.

CHARLES J. DELBRIDGE, OF ROCHESTER, NEW YORK.

## IMPROVEMENT IN CIGAR-MACHINES.

Specification forming part of Letters Patent No. **140,896**, dated July 15, 1873; application filed November 2, 1872.

*To all whom it may concern:*

Be it known that I, CHARLES J. DELBRIDGE, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain Improvement in Machines for Making Cigars, of which the following is a specification:

My invention consists essentially in the use of rollers having intermatching washers or rings, whereby a better rolling action is produced than where smooth rollers are used.

In the drawings, Figure 1 is a perspective view of my improved machine; Fig. 2, a longitudinal vertical section; Fig. 3, a diagram, showing the intermatching of the rollers; Fig. 4, a sectional elevation, showing the rollers mounted in the frame; Figs. 5, 6, and 7, detail views.

A represents the frame, which may be of any desired construction, and secured to the table or support by a screw-clamp, B, or otherwise. C is a top, which is secured to the frame by hinges or joints *a a* on opposite sides, so that the top may be turned back, as indicated by the dotted lines in Fig. 2. D D D are the rollers mounted one-half in the stationary frame A, and the other half in the top C, so that when the top is turned back the rollers are opened for the insertion of the "filling" of tobacco. These rollers are arranged in a circular or cylinder, the interior of which is of proper size and shape to form the cigar therein. If the cigar is to be made with a swell or taper the rollers are correspondingly formed. Any desired number of the rollers may be used; in the drawings eight are shown. The rollers consist each of a solid shaft, *b*, and a series of washers or rings, *c c*, which project from the shaft. The washers or rings of the alternate shafts inmatch—or, in other words, the rings of one shaft fit into the spaces of the next—as shown in Fig. 6, and preferably strike so deep as to come as near as possible to the shafts without friction. These rings may be either made separate and slipped upon the shaft, as shown in Figs. 2 and 3; or they may be cut from the body of the shaft and made solid with it, as shown in Fig. 6. In the latter case no fitting is necessary, as the rings will keep their place; but in the former case I prevent the rings from turning by means of

feathering, as shown at *d*, Fig. 3; and I also prefer to interpose alternately with the rings vertical and stationary division-plates *f f*, Fig. 1, which are attached to the frame. These division-plates are necessary, however, only in the two front rollers above and below, on that side where the material is fed to the rollers, as the rings of all the other rollers are held by the intermatching of the rings. A throat, *g*, is left between the two front rollers for the passage of the wrappers, as will presently be described. In some cases I make a portion of the washers turn loose. At the rear ends of the rollers are conical heads *h h*, which may be either solid and smooth, as shown in the drawings, or may be made up of washers or rings in the same way that the body of the rollers are. These cones are so arranged as to be close fitting, and the space inclosed is of the taper form of the tip of the cigar which they shape. Each alternate cone is made with a reverse-bevel end, *i*, while every intermediate one has a sharp-edged bevel, *i*<sup>2</sup>, of opposite form, to fit it and form the extreme point of the cigar. This is clearly shown in Figs. 4 and 7. The rollers are mounted on journals or bearings, which pass out into inclosed boxes *l l* of the frame and top, where they are driven by any suitable gearing, *m m* and *m*<sup>2</sup> *m*<sup>2</sup>, which will give the proper motion to roll the tobacco continuously. Only one journal of each roller, however, extends out into the box, the other journal of the same roller resting in a bearing-plate, *u*, which embraces the half-set that rests in the frame or the top. The gearing *m n* at each end, at the top, also gives motion only to the half-set above, while that *m*<sup>2</sup> *m*<sup>2</sup> at the bottom gives motion only to the lower half-set connected to the frame. This is necessary to allow the top to turn back for the entrance and exit of the material, as before described. I prefer to use supporting-plates *o o* to help sustain the rollers. The gearing is driven by a crank-shaft, *E*, or by any suitable means. The top may be opened and closed by any desired means. In the drawings, a connecting-rod, *G*, is pivoted at one end, which is to be pressed down by the foot. Instead of this may be a graduating-weight, which will yield when too much material is inserted and when the top is thrown back. This

weight may be retained raised by any desired means so as to release the hands of the operator. In front of the machine is a table, *H*, which leads to the throat between the rollers. At the outer end of this table is a half-circular groove, *p*, of a length equal to that of the cigar to be rolled, and of a capacity sufficient to hold enough of the filling to form a cigar. It is open at its side next the rollers, and it has at suitable spaces openings *q q* for the reception of the fingers of the operator. This groove is for gaging the amount of filling to be fed at once to the rollers. The filling is simply spread even in length and gathered in to fill the groove, and is then pressed forward to the rollers, as indicated by the arrows in Fig. 1. By its use the proper amount can be gaged with uniformity. This forms one of the novel features of my invention. *K* is a spindle or plunger, which passes endwise through the frame into the space inclosed by the rollers, on that side which holds the square end of the cigar. At its inner end it has a head, *r*, and at its outer it has a hollow knob or handle, *s*, by which it is operated. The knob is secured in any desired position by a set-screw, *v*. The spindle is surrounded by a coiled spring, *t*, outside, by which it is retracted. The object of this spindle or plunger is to adapt the rollers to different lengths of cigars, and also to press the cigar up to place so that the tip will be acted upon by the cones, as before described. It performs the first-named office by being set to the proper gage by adjusting the knob upon it to any position. It performs the latter by a quick pressure of the hand against it to drive the cigar up endwise to place, when it is immediately retracted by the spring. The combination of the spring and set-screw or equivalent with the plunger forms another feature of my invention.

The essential feature in my invention consists in the construction of the rollers with the intermatching washers or rings *c c*.

Plain or smooth rollers have before been used, but owing to the distance apart at which they must be set a deep angle comes between them on the inside, which impairs and destroys the desired approximate circle or cylindrical form of the space in which the cigar is rolled, and gives but very little contact.

By intermatching the washers, as above, the space inclosed is almost round, and the angles between the rollers is but very slight. The consequence is that the rollers bear upon the cigar over its whole surface, and a much better result is attained.

The process of forming the cigar is obvious. The filling is first inserted between the rollers and rolled in shape. The inner wrapper is then laid upon the table, and one end inserted through the throat of the rollers at the square end of the cigar, while it is guided by hand so as to wind up properly. The outer wrapper is then applied in the same manner, but wound reversely. The crank may be turned in either direction.

I do not claim smooth rollers, as I am aware that the same have before been used.

What I claim, and desire to secure by Letters Patent, is—

1. In a cigar-machine, the series of rollers *D D D*, when they are formed with a series of washers or rings, *c c*, which intermatch, as herein shown and described, and for the purpose specified.

2. In combination with the washers *c c*, the interposed division-plates *f f*, arranged and operating as herein described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHAS. J. DELBRIDGE.

Witnesses:

R. F. OSGOOD,  
FRED. A. HATCH.