No. 32,993. PATENTED AUG. 6, 1861.

I. A. HEALD.

CIGAR MACHINE,

No. 32,993

Patented Aug. 6, 1861.

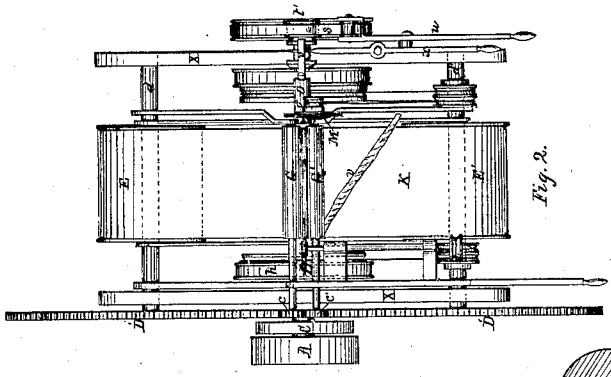


Fig. 2.

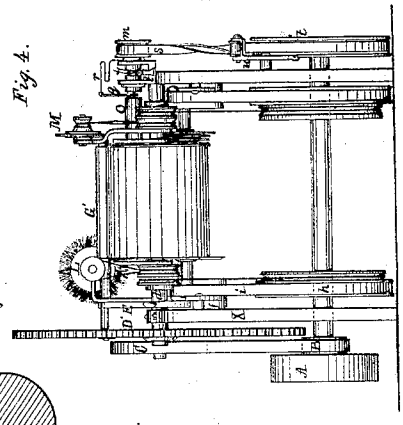


Fig. 4.

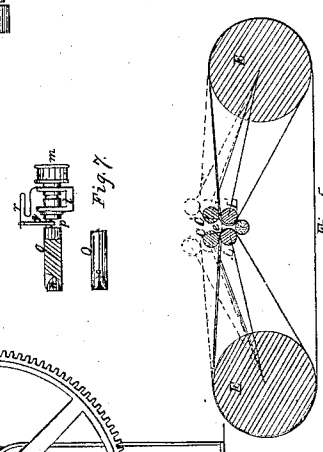


Fig. 5.



Fig. 9.

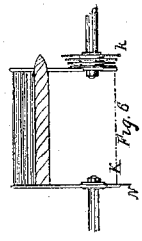


Fig. 6.



Fig. 8.

Fig. 7.

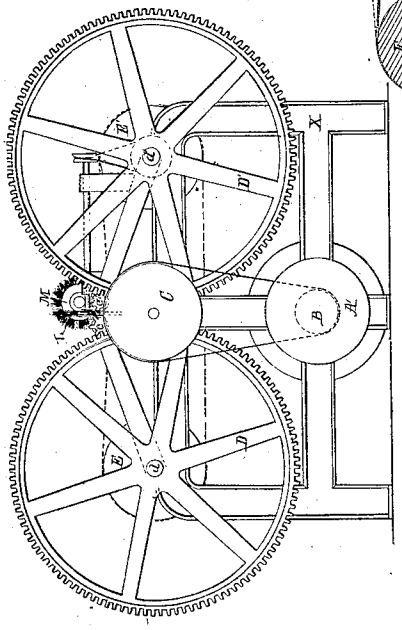


Fig. 1.

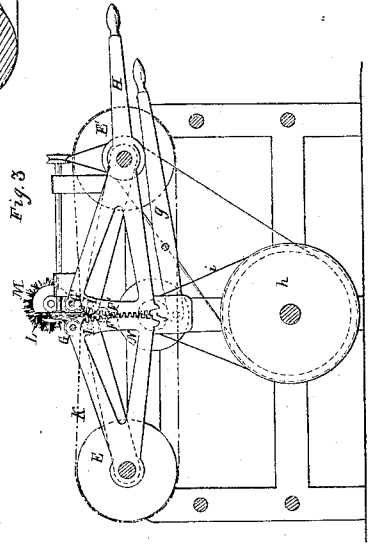


Fig. 3

Witnesses:

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UNITED STATES PATENT OFFICE.

I. A. HEALD, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR MAKING CIGARS.

Specification forming part of Letters Patent No. **32,993**, dated August 6, 1861.

To all whom it may concern:

Be it known that I, I. A. HEALD, of Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and Improved Cigar-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the machine; Fig. 2, a plan or top view; Fig. 3, a longitudinal vertical section inside the frame; Fig. 4, an end elevation.

The other figures will be explained in their natural order.

Like letters of reference indicate the same parts in each of the several figures.

X is the frame supporting the rest of the machine.

A is the main driving-pulley through which motion is communicated to the machine. On the same shaft is the pulley B, which is belted to a pulley, C. Behind the pulley C, and on the same shaft, is a pinion gearing into the gears D D′ on the shafts *d d′*. Also, running loosely on the same shafts are the rolls or cylinders E E′.

F F′ are two segments of gears working together and attached loosely to the shafts *d d′*.

G G′ are two top rolls, supported at one end by the segments F F′, and at the other by suitable radial supports from the shafts *d d′*. On the end of each of these rolls is a pinion, *c c′*, gearing into the gears D D′.

H is a lever or handle attached to the segment F′, by means of which the segments are rotated about their centers, and thereby the rolls G G′ elevated or depressed.

I I′ are two bottom rolls, also supported from the centers *d d′*, and movable with the rolls G G′.

K is an "endless" belt or apron running over the cylinders E E′ and between the rolls G I and G′ I′, and forming between the two sets of rolls a loop, *e*, for the reception of the unrolled filling for a cigar. This is more fully seen in Fig. 5, in which the dotted lines show the position of the rolls when elevated by means of the handle H and segments F F′. The pinions on the rolls G G′ cause them to feed the belt through gradually, and thus giving a rolling motion to anything confined in the loop *e* of belt. The belt also serves as an apron on which to feed in the wrappers or covers to the cigars.

L is a brush for brushing the end of the wrapper down into the loop, and thereby starting it to roll round the filling.

M is another brush for applying paste to the last end of the wrapper as it comes round, and thus enable it to be stuck down and to form a smooth end.

N is a rotary cutter for cutting off the end of the cigar after the wrapper is wound round. This cutter is on the end of a shaft supported in a box, *f*, which is movable up and down by the handle or lever *g*. Motion is communicated to the cutter from the pulley *h* on the main shaft by a belt, *i*.

k is a cutter composed of a series of circular saws, for shaping the small end of the filling before the wrapper is rolled on. The sizes of the saws are so graduated as to give to the end of the cigar the suitable form. These cutters are seen more clearly in Fig. 6.

O is a rotary header, consisting of a rod of iron or other metal, supported in a bearing, *l*, with a pulley, *m*, on one end, and in the other end a conical hole, *n*, of a form corresponding to the form of the small end of the cigar when finished. In the rod O, between the two supports of the bearing *l*, is a groove, into which a crotched lever, *x*, is inserted, for the purpose of moving the header up to or back from the cigar by sliding it in the bearing *l*. Fig. 7 shows two views of the header, the upper one being a side view in partial section, and the lower a plan of the end of rod having the conical cavity, and showing a slot, *o*, connecting with said cavity to admit the wrapper.

p is a small crank made in the rod O, and attached by the connection *q* to the spring *r*, by means of which the slot *o* is always returned to the top when the header is not in use. The header is put in motion by means of the belt S from the pulley *t* on the main shaft. The belt is slack, except when tightened by the binder *u*; therefore the crank and spring are sufficient to keep the header in place and cause the belt to slip, except when the binder is applied.

Having thus fully described the construction of the several parts, I will proceed to describe their operation in the manufacture of a

cigar. Supposing the rolls G G′ and I I′ to be elevated, as shown by the dotted lines in Fig. 5, the rolls, by the operation of elevating, are sufficiently thrown apart to give free access to the loop *e* of the belt, which is kept of a suitable size to receive a sufficient quantity of filling by making the pinions *c c′* on the rolls G G′ smaller than the rollers, thereby feeding in an extra quantity of the belt when they are rotated around the large gears by the process of elevating. Now, having put into the loop a quantity of filling, throw down the rolls, thereby forming a loop entirely enveloping the filling, with the exception of a space between the rolls I I′ large enough to admit the wrapper. As soon as the rolls are depressed the filling begins to be rolled by the continuous motion of the belt. Now bring up the cutter R and form the filling suitable for putting on the wrapper, after which lay a wrapper on the apron in the position shown in Fig. 2 at *v*, the end of which is received by the roll G′, by means of which and the brush L it is wound around the filling. Now bring up the header to the edge of the belt, ready to receive the projecting end of the wrapper, which, as it comes under the brush M, receives the paste and is received by the slot *o* into the conical cavity. Now apply the binder *u* to the belt *s*, which gives to the header O a rotary motion and finishes the end of the cigar; and, lastly, cut off the other end by means of cutter N. Now throw up the rolls, remove the finished cigar, and proceed as before.

A wrapper to a cigar is one-half of a leaf, and in order to use both halves the machine must be capable of running in both directions, which is easily accomplished by employing some one of the common right-and-left movements in transmitting power to the machine through the main pulley, the only difference in the construction of the machine for that purpose being the introduction of another paste-brush on the other side of the feed-rolls.

Fig. 8 shows a form for belt and rolls for giving the cigar the peculiar form common to those made by hand. The form of the cigar is produced by the form of the belt shown larger in cross-section at Fig. 9, in which it is thickest at the edges, thereby making the cigar largest in the middle. In using such a belt the same bottom roll is used as before; but a top roll is substituted corresponding in form with the belt, as seen at Fig. 8. By thus changing the form of the belt any desirable form of cigar can be made.

Now, having fully described the construction and operation of my machine, what I claim as my invention, and desire to secure by Letters Patent, is—

1. Running a belt in the form of a loop, whereby a single belt incloses and forms a bearing for the whole outside surface of the cigar, with the exception of a sufficient space to admit the wrapper, the whole being constructed and operated in the manner and for the purpose set forth.

2. The use of a belt of unequal thickness for the purpose of giving to the cigar any required degree of taper, or for giving it any other desirable form, the outline of the cross-section of the belt corresponding with the outline of the longitudinal section of the cigar.

3. The use of the rotary brush L for facilitating the insertion of the wrapper and to insure the winding of the same around the filling.

4. The use of a series of rotary cutters, with either smooth or toothed edges, for cutting and shaping the ends of cigars, when constructed and operated in the manner and for the purpose set forth.

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Witnesses:
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