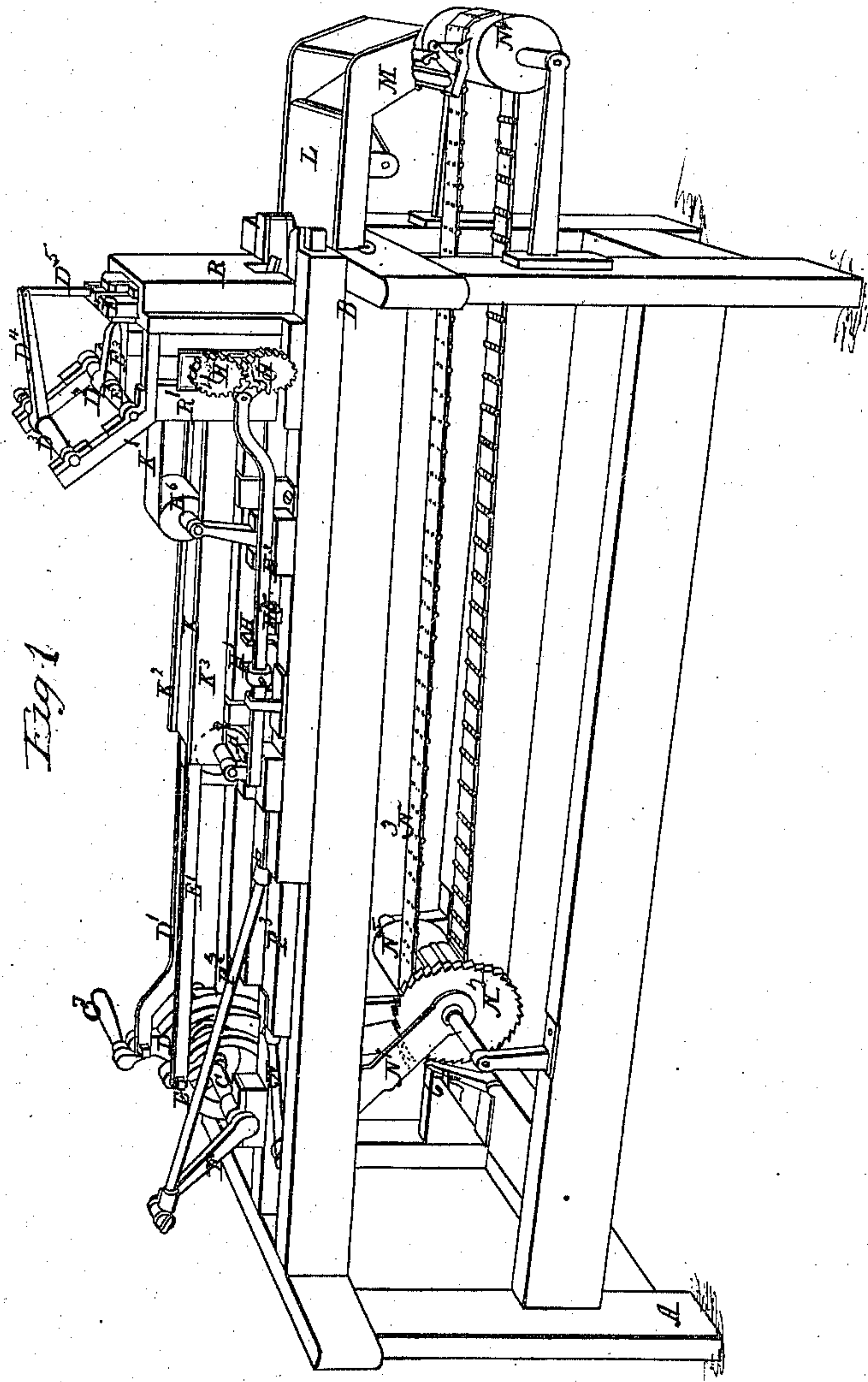


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Cigar Mach.

N^o 97,292.

Patented Nov. 30, 1869.



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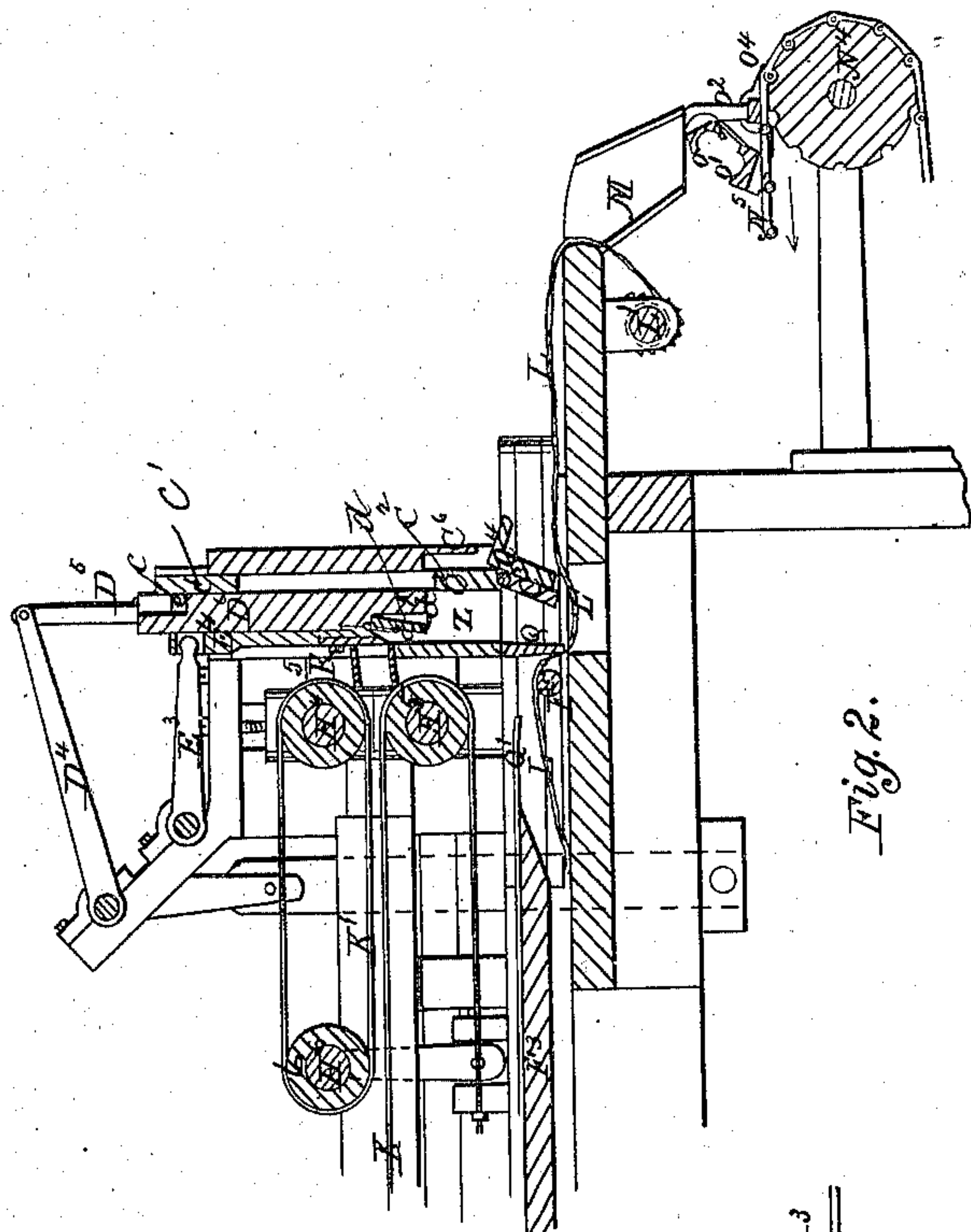


Fig. 2.

Fig. 6.

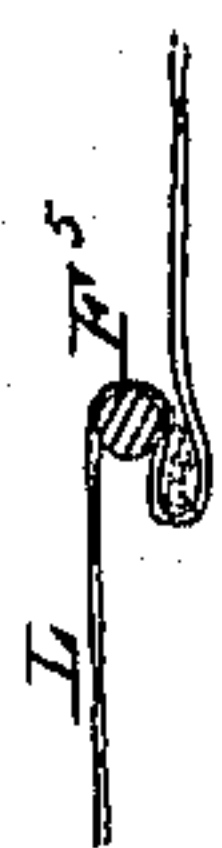


Fig. 6. I.



Fig. 4.

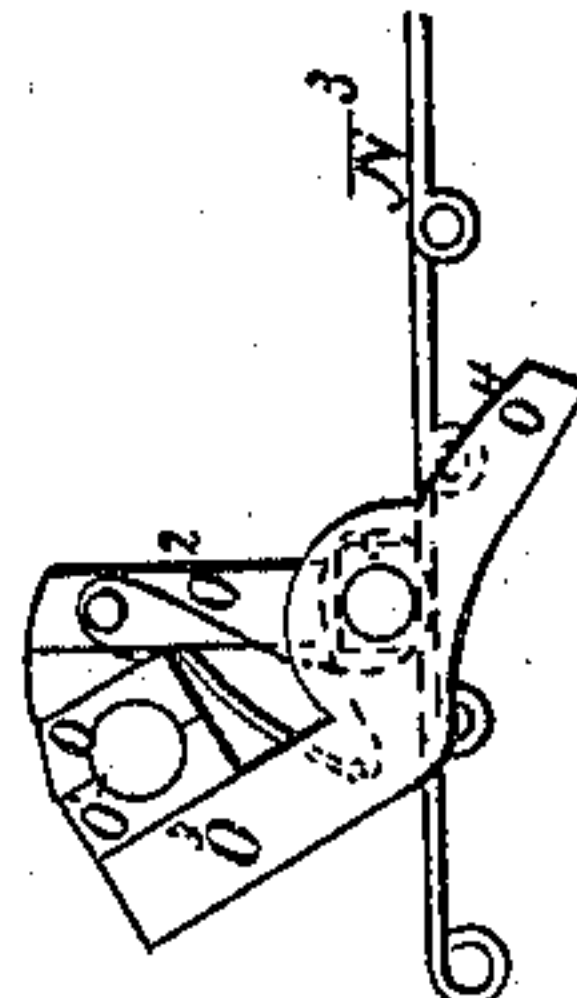
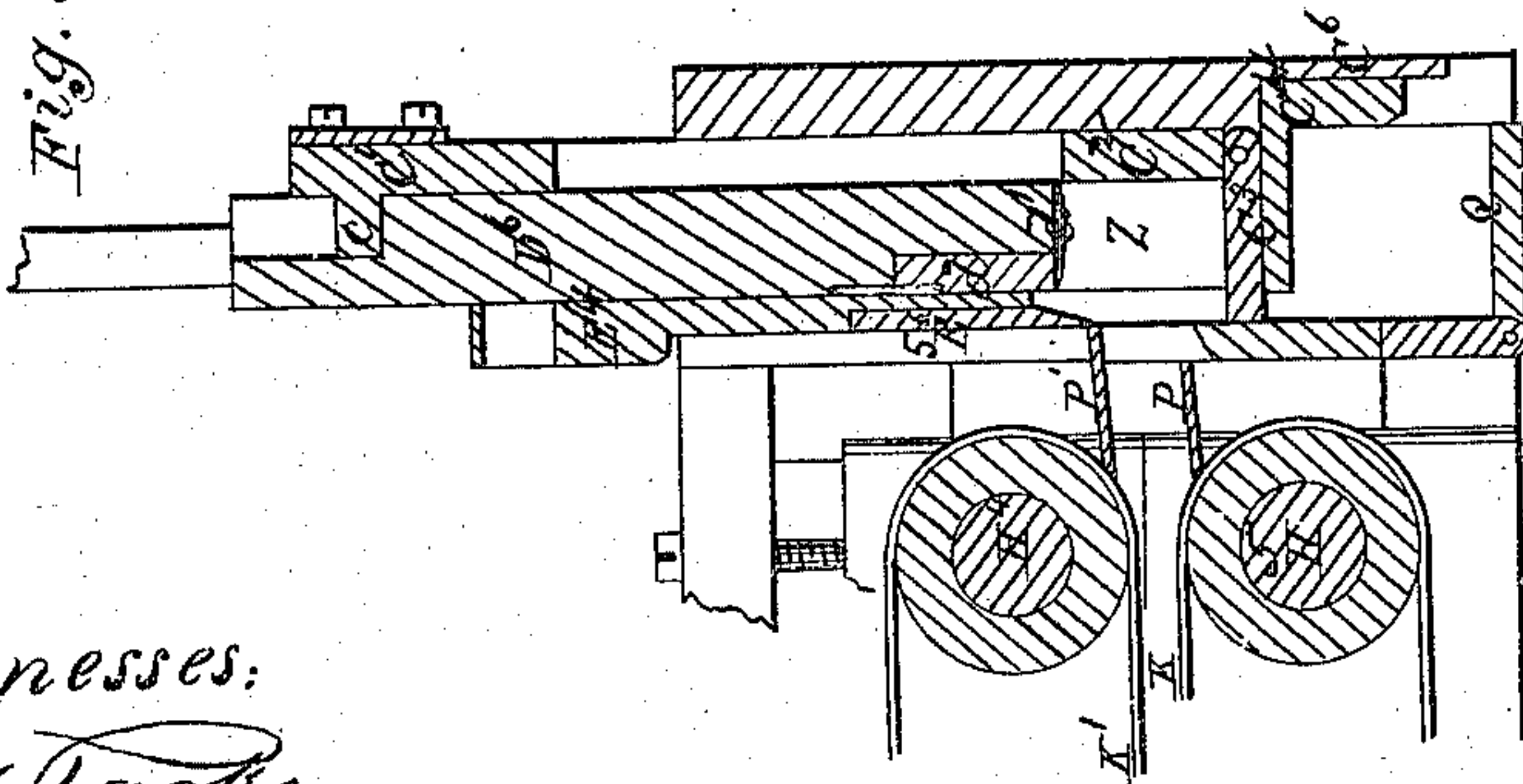


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM HALL AND E. J. BENNETT, OF BOSTON, MASSACHUSETTS.

MACHINE FOR FORMING CIGARS AND PLUG-TOBACCO.

Specification forming part of Letters Patent No. 97,292, dated November 30, 1869.

To all whom it may concern:

Be it known that we, WILLIAM HALL and EMANUEL J. BENNETT, both of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Forming Cigars and Plug-Tobacco; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of our invention consists in peculiar devices which can only be understood by reference to the drawings and specification.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and use.

In the drawings, Figure 1 represents a perspective view of the entire machine. Fig. 2 is a vertical section of the more important parts of the machine. Fig. 3 is an enlarged view of parts of the same. Fig. 4 represents an enlarged view of one of the carrying-molds. Fig. 5 represents the forming-apron as it appears when it first takes hold of the tobacco. Fig. 6 represents the same with the cigar or plug-tobacco in the process of being rolled.

Our machine is constructed as follows:

A B represents the frame.

C, Fig. 1, is the main driving-shaft, which is provided with cams for operating the cam-levers D and E, and with the crank-arm F for operating other parts of the machine.

K is the lower feeding-belt, which passes over the rollers II³, Figs. 2 and 3, and H⁷, Fig. 1.

K' is the upper feeding-belt and passes over the rollers II⁴ H⁶, Fig. 2. These feeding-belts have an intermittent motion which is given them by the stud H on the slide F³, Fig. 1, acting through the dogs H' H² and the reciprocating rod H³, which actuates a pawl working in combination with the gears at H⁴ II⁵, Fig. 1. The feeding-belts serve to feed in the tobacco, which is placed upon the lower belt, K, by which it is carried along until it comes in contact with the upper belt, K'. Then both belts, acting together, carry the tobacco into the mouth P P' of the compressing-chamber Z, Figs. 3 and 2. After sufficient tobacco has passed into the machine to fill the chamber Z, Fig. 3, the amount being regulated by the adjustment of the dog II' on the reciprocating

shaft H³, Fig. 1, which governs the motion imparted to the feeding-belts, the separating-knife E⁵ E⁴, Fig. 3, which is operated by the cam-lever E, link E', rocker-shaft E², and arm E³, Fig. 1, passes down, closing the mouth P P', the feeding-belts being now at rest. Now, the knife E⁴ E⁵ being stationary in the position represented in Fig. 2, the compound plunger D⁶ O' C² C³ C⁴, Figs. 3 and 2, begins its operation.

The part D⁶ of the plunger is operated by the cam-lever D, link D', arm D², rocker-shaft D³, arm D⁴, and link D⁵; but the part C' C², &c., depends for its action upon D⁶, which draws it up by coming in contact with the start c, Figs. 2 and 3, and pushes it down by pressing upon the tobacco in the chamber Z, Fig. 3, the valve C³ being closed, as shown in Fig. 3.

The lower end of the plunger D⁶ is provided with a swinging piece, d, connected by means of a hinge, and also a piece of flexible material, d', so arranged that as the plunger passes down beyond the knife E⁵, as shown in Fig. 2, the piece d springs out so as to fill the whole space above Z. As the plunger continues its descent it compresses the tobacco within the chamber Z, and at the same time carries down the part C' C² C³ until it gets nearly to the apron L, Fig. 2, when the bent arm C⁴, having passed below C⁶, swings outwardly, as shown in Fig. 2, and allows the valve C³ to open, as shown in Fig. 2. At the same time the valve Q, Fig. 3, is thrown back into the vertical position shown in Fig. 2, in which position it serves as a continuation of the chamber Z, thus preventing the tobacco from passing out. The continued downward motion of the plunger D⁶ presses the tobacco with the apron L downward into the recess Z'. Now, the plunger D⁶ begins to be withdrawn, and in its upward motion soon withdraws the parts C' C², &c., during which operation the slide Q' F³ advances, carrying with it the roller F⁵, which, being under the apron L, carries the apron over the tobacco in the recess Z', as shown in Figs. 5 and 6, l representing the tobacco at the stage of progress represented by Fig. 5. The covering-leaf V, Fig. 5, is inserted, and as the roller F⁵ moves forward the tobacco is rolled up within the covering-leaf V, and appears as shown in Fig. 6. The continued motion of the slide F³ carries forward the tobacco in the apron L and,

having rolled it in the proper form, delivers it to the hopper M. The slide F³ now retreats and all of the above-described motions are repeated, making another cigar or plug.

The slide F³ is operated by the crank-arm F operating through the link F².

N³, Fig. 1, is an endless chain or belt passing around the barrels N⁴ N⁵, and is operated by the link N, attached to the slide F³, acting through the lever N', which, being provided with a pawl, operates the ratchet-wheel N², which is attached to the barrel N⁵.

N⁶ is a stay-pawl, which serves to prevent the wheel N² from moving in the wrong direction. The belt or chain N³ is provided with a series of molds, one of which is represented in Figs. 2 and 4, these molds being sufficient in number so that one may be always ready to take the cigar or plug which is dropped through the hopper M. These molds consist of two parts, O and O', which are connected to the jaws O² O³, Fig. 4. The part O³ is pivoted to the part O², and has a tail-piece, O⁴, which, coming in contact with the roller N⁴, as shown in Fig. 2, opens the mold to receive the cigar or plug as it drops from the hopper M. Now, as the mold moves in the direction of the ar-

row, Fig. 2, O⁴ is freed from the roller, and a spring connected with the mold itself closes it, compressing the cigar and carrying to the point of delivery.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

1. Combining with the plunger D⁶ the hinge-piece *d* and the flexible apron *d'*, working substantially as described, and for the purpose set forth.

2. The combination of the plungers O' O², the valve O³, and bent arm O⁴, operating substantially as described, and for the purpose set forth.

3. The valve Q, operating substantially as described, and for the purpose set forth.

4. The combination of the automatic mold O O' O², &c., with the endless chain or belt N³, working substantially as described, and for the purpose set forth.

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