

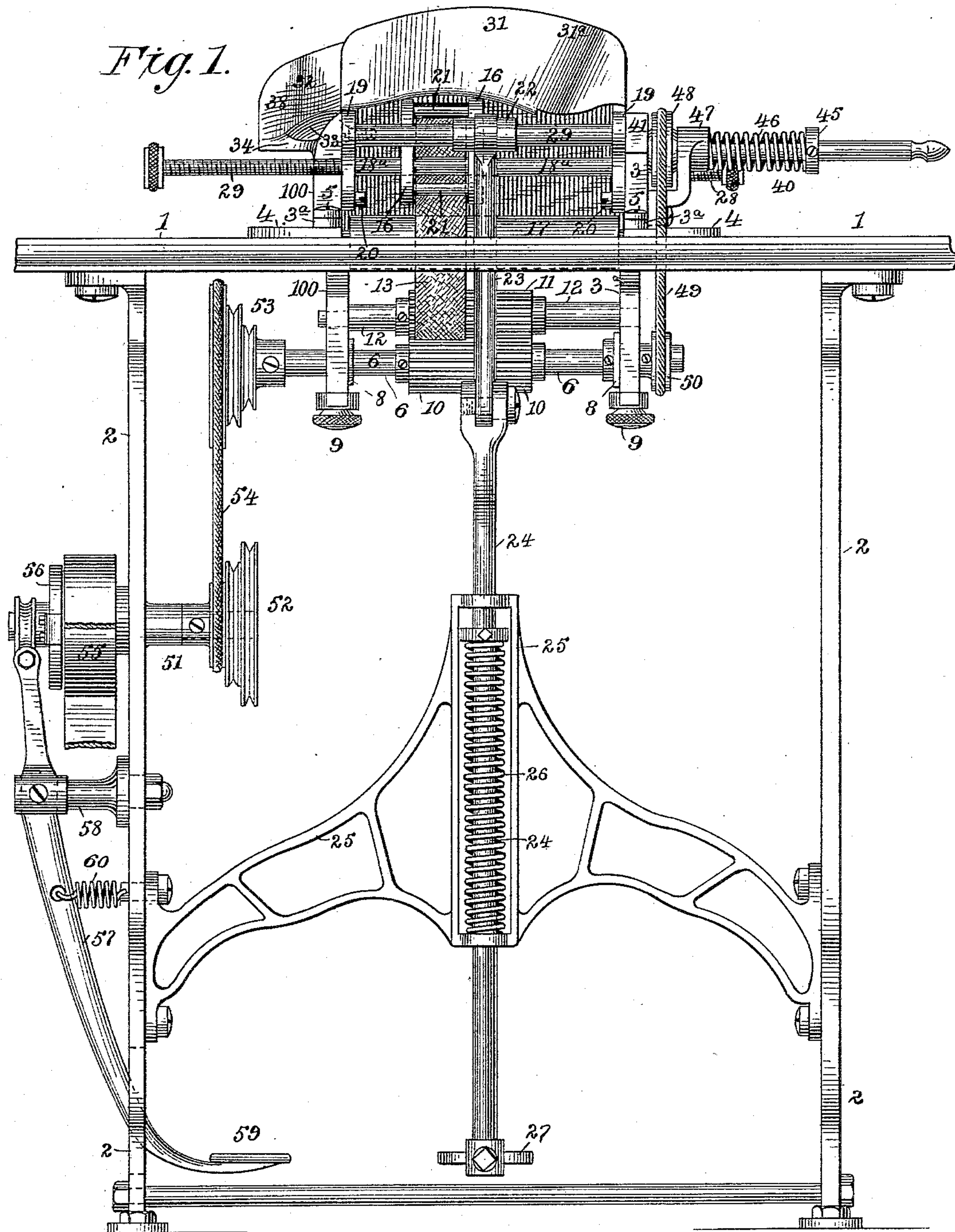
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4 Sheets—Sheet 1.

S. J. FLATOW.  
MACHINE FOR WRAPPING CIGARS.

No. 401,147.

Patented Apr. 9, 1889.



Witnesses,  
Ebm J. Tanner.  
Louis Lieber

Inventor:  
S. J. Flatow  
by A. M. Tanner



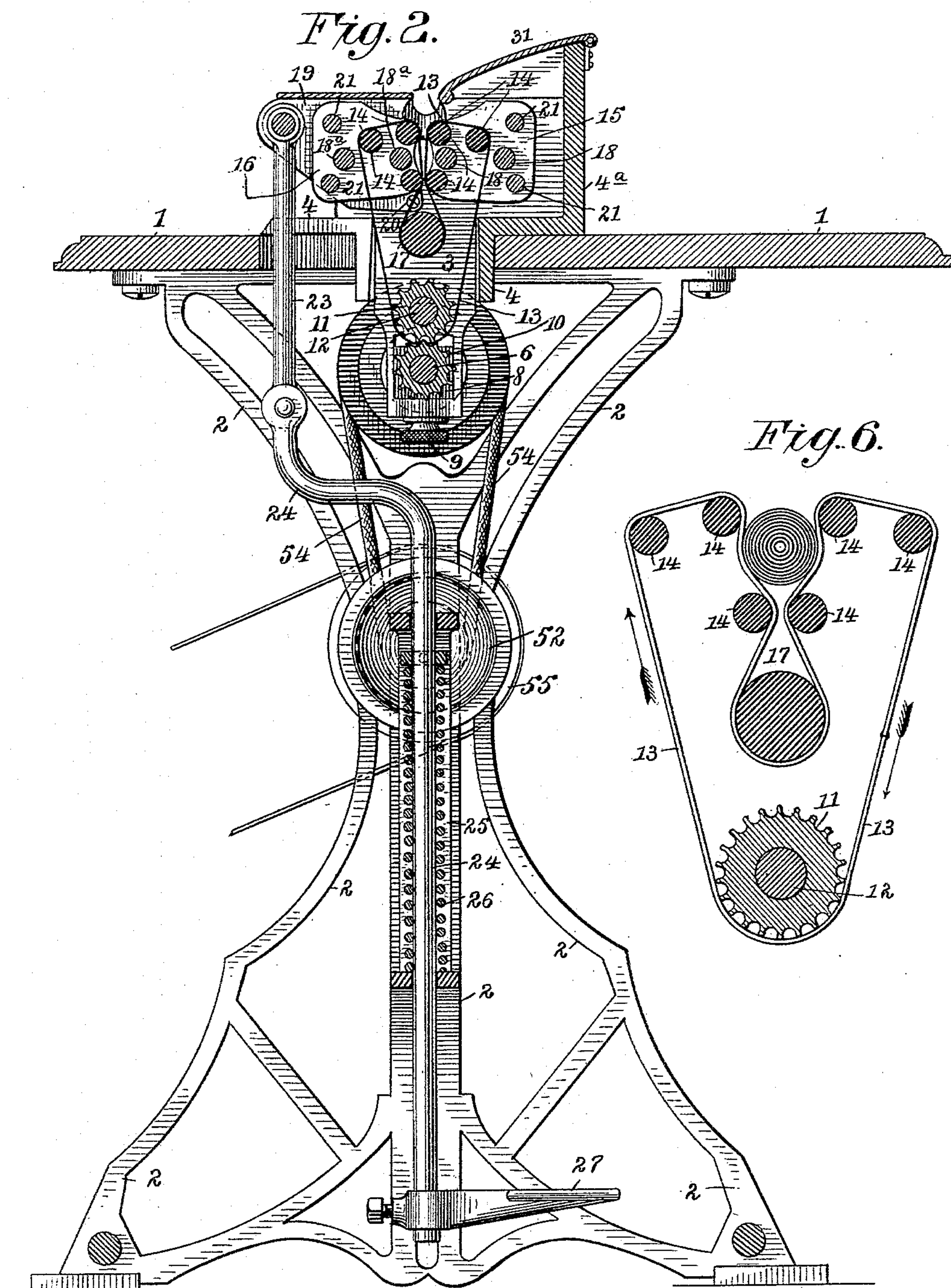
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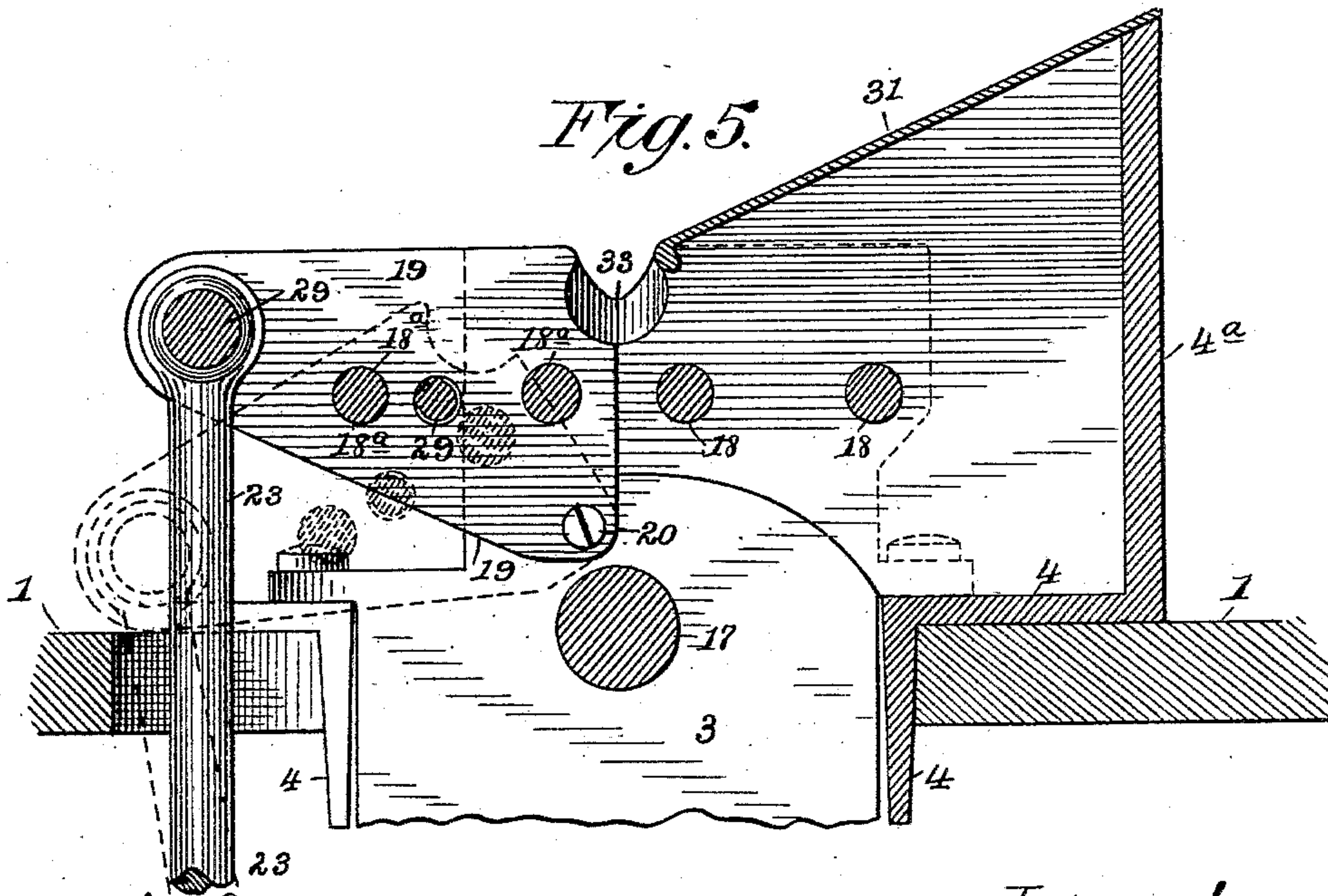
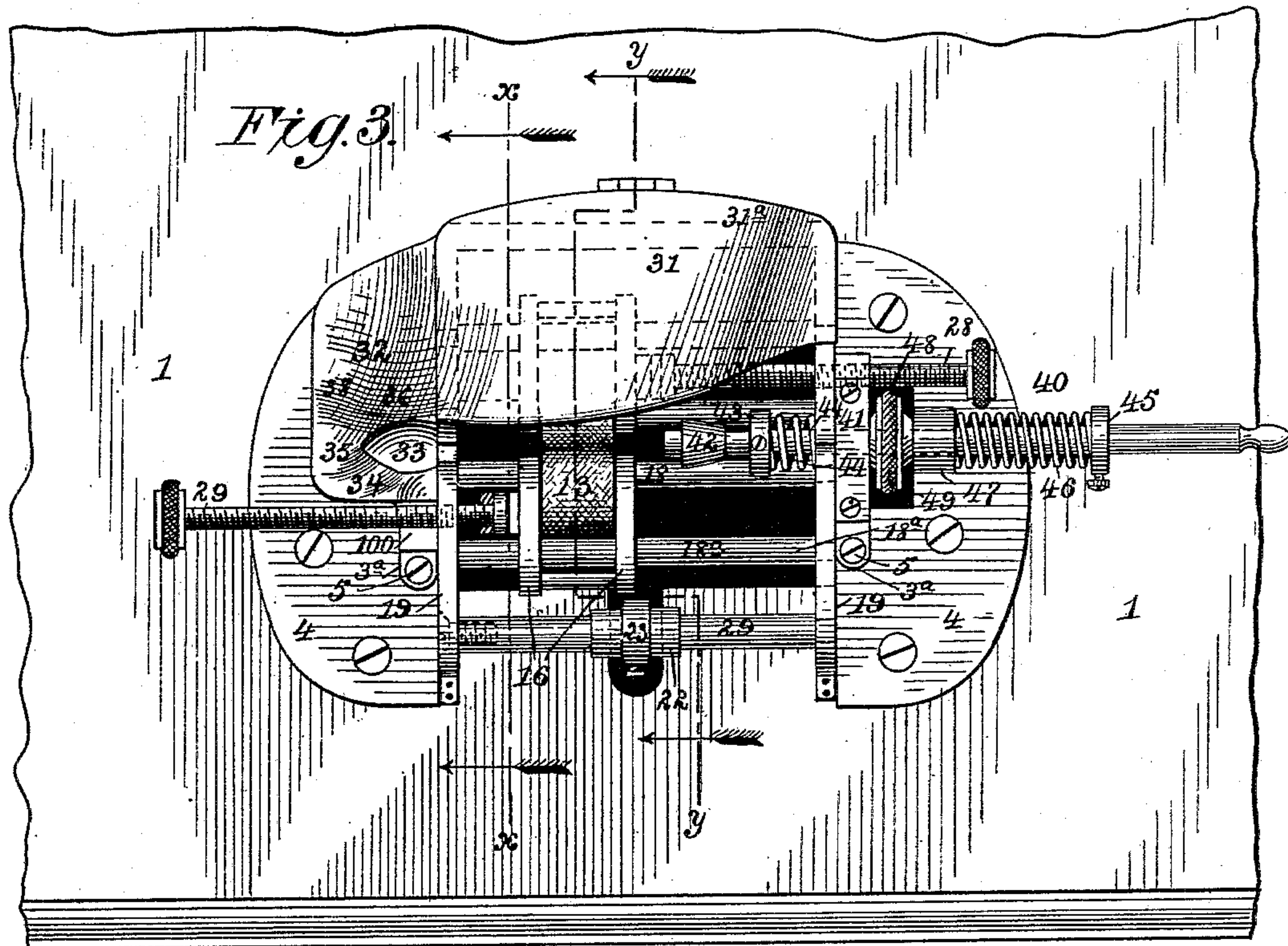
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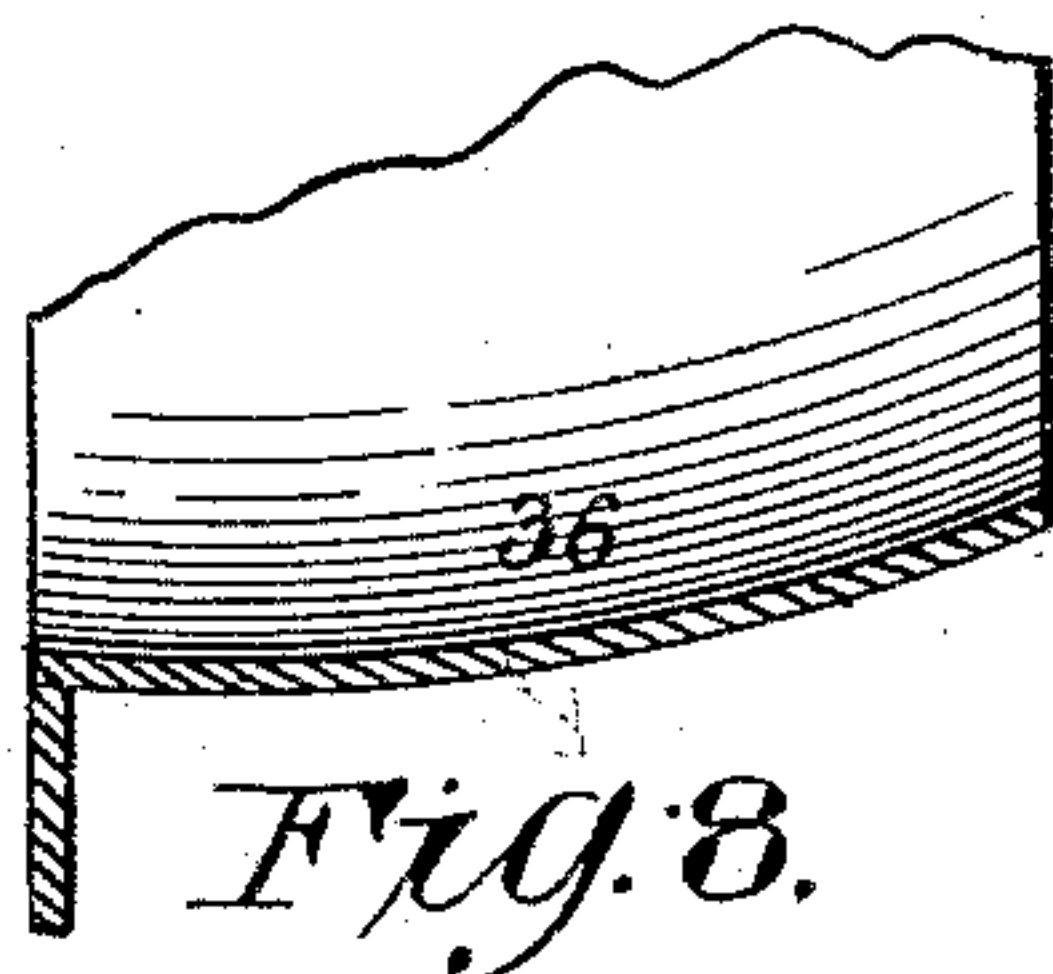
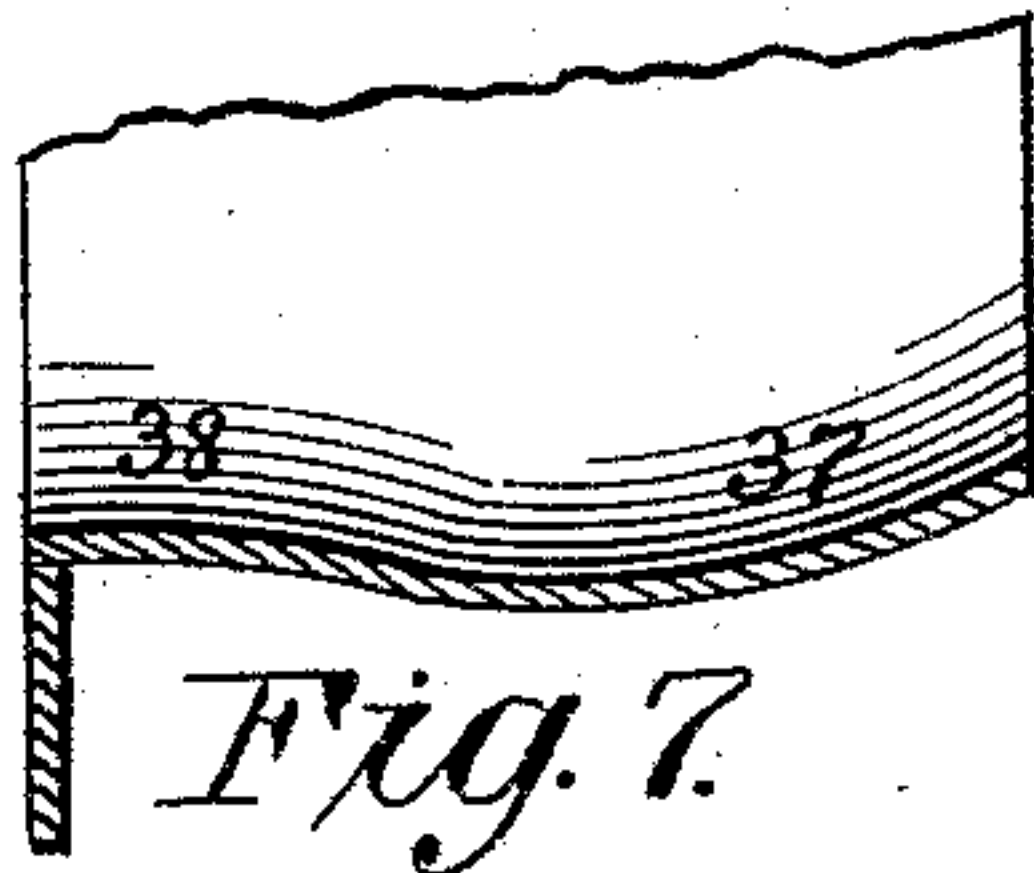
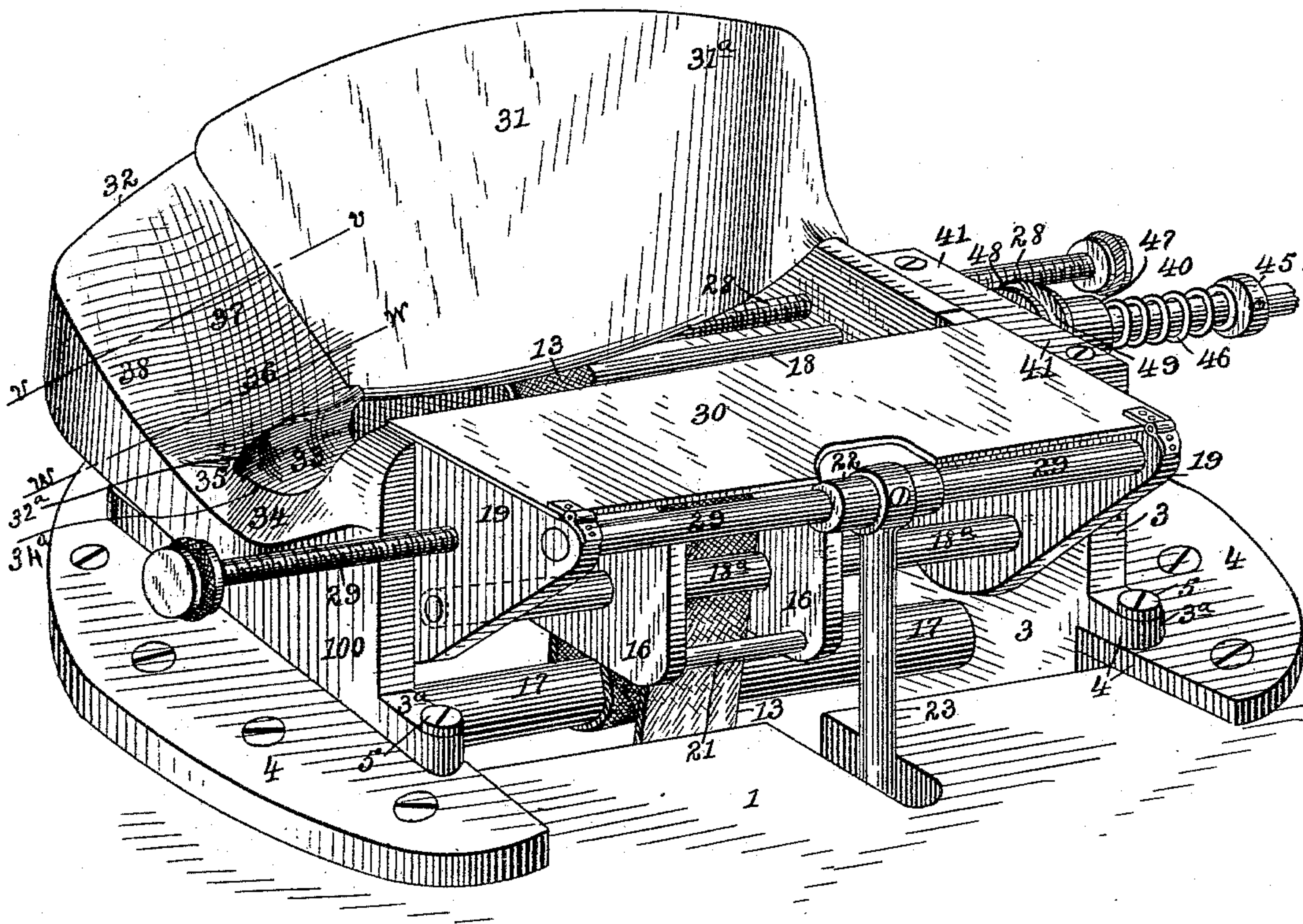
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*Fig. 4.*



Witnesses.

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# UNITED STATES PATENT OFFICE.

SIMON J. FLATOW, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO LOUIS  
SIEBER, OF SAME PLACE.

## MACHINE FOR WRAPPING CIGARS.

SPECIFICATION forming part of Letters Patent No. 401,147, dated April 9, 1889.

Application filed June 13, 1888. Serial No. 276,939. (No model.)

*To all whom it may concern:*

Be it known that I, SIMON J. FLATOW, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Machines for Wrapping Cigars, of which the following is a specification.

This invention relates to that class of machines for applying wrappers to cigar-bunches in which the winding or rolling operation is performed by means of an endless traveling belt in which a bight conforming to the shape of the cigar-bunch is made by guide-rollers over which the belt passes. In machines of such description it has been found impossible to make perfect or solid heads, because the so-called "tip former or mold" does not preclude the liability of the wrapper passing beyond the tip of the cigar-bunch. In consequence of such movement a "false head" is formed, which, when dry, is easily broken off and detracts from the value of the cigar. In the present invention I avoid the formation of the so-called "false head," the wrapper being at no time permitted to pass beyond the point or tip of the cigar-bunch, it being distinctly understood that no trimming or cutting is required to prevent the formation of the objectionable protrusion termed a "false head."

In my improved machine the wrapper previously cut out into the required form is by a special arrangement of parts properly presented to the cigar-bunch, and its tension is maintained while being applied to the bunch. Furthermore, it is guided in a perfect manner during the entire winding or rolling operation, and the formation of a perfect or "solid head" is insured in every instance.

Another object of my invention is to provide for the simple and easy guidance and adjustment of the endless traveling belt, in order to adapt the machine for wrapping different-sized cigars.

The invention briefly outlined in the foregoing statement consists in the construction and arrangement of parts, which will be hereinafter fully described, and then set forth in the claims.

In the accompanying drawings, Figure 1

represents a side elevation of my improved cigar-wrapping machine. Fig. 2 is a vertical transverse section of the entire machine, taken through the line *y y* of Fig. 3, looking in the direction of the arrow. Fig. 3 is a plan or top view of the machine. Fig. 4 is a perspective view of the upper portion of the machine. Fig. 5 is a vertical transverse section of the upper portion of the machine, taken through the line *x x* of Fig. 3. Fig. 6 is a detail sectional view of the endless belt and guide-rolls with the cigar-bunch in position. Figs. 7 and 8 are sections taken, respectively, on the lines *v v* and *w w* of Fig. 4.

The reference-numeral 1 denotes the table of my improved cigar-wrapping machine, and 2 the stand or frame-work of the same. The table has an opening for the passage of the vertical hangers or standards 3, which constitute a frame for supporting the mechanism directly concerned in the wrapping operation.

To the top of the table 1 is secured the bed-plate 4, having the standards 3 and 100 secured thereto by flanges 3<sup>d</sup> on said standards and screws or bolts 5. The standards 3 and 100 are extended above their point of attachment to the bed-plate 4, and constitute bearings or supports for all the parts of the machine that are located above the table.

Beneath the table 1 is arranged a longitudinal shaft, 6, which has its bearings in vertically-adjustable journal-boxes 8, fitted in slots in the standards 3. Set-screws 9, passing through the lower ends of the standards, bear upon the journal-boxes 8, and serve to move the same up or down for the object hereinafter stated. A fluted roller, 10, arranged on the shaft 6, co-operates with a similar roller, 11, on a shaft, 12, journaled in the standards 3 and 100, in order to impart motion to an endless traveling belt, 13. This belt passes between the two rollers 10 and 11, goes in an upward direction, and passes over a series of rollers, 14, journaled in longitudinally-adjustable carriages 15 and 16, and from thence the belt is carried around a roller, 17, having its journals in bearings in the standards 3 and 100. The carriage 15 is fitted on parallel guide-rods 18, which are secured to the standards 3 and 100. The other



carriage, 16, is fitted on similar guide-rods 18<sup>d</sup>, that are secured to a frame formed of arms or plates 19, which are connected by pivots 20 with the standards 3 and 100, as is more fully shown in Fig. 4.

The carriages 15 and 16 are both alike, and are formed of end plates, the tie-rods 21, and the rollers 14. A tie-rod, 29, connecting the two arms or plates 19, receives a sleeve or collar, 22, on the upper end of a link, 23. The latter is pivotally connected with the bent upper portion of a vertical rod, 24, which passes through a guide-frame, 25, secured to the frame-work of the table 1. A spring, 26, encircles the rod 24 between the upper and lower guides of the frame 25. A treadle, 27, at the lower end of the rod 24, is used for depressing the rod and turning the arms or plates 19 upon their pivots, as is shown by the dotted lines in Fig. 5. Upon releasing the treadle the spring 26 serves to restore the frame formed of the plates 19 and attached parts to its closed position.

The carriages 15 and 16, carrying the guide-rollers 14, serve to support the endless belt 13, and the latter can be shifted along the driving and guide rollers 10, 11, and 17 by bodily adjusting the carriages longitudinally. This adjustment is effected from the ends of the machine without interference with any of the other parts by means of two screw shafts or rods, 28 and 29, located, respectively, at the opposite ends of the machine. The screw 28 is fitted in the standard 3 and bears upon the carriage 15, and the other screw, 29, on the opposite end of the machine, passes through one of the pivoted plates or arms 19 and bears upon the carriage 16. A plate, 30, hinged to the arms 19, bridges the space between the arms 19, and serves to cover and protect the parts arranged thereunder. This plate also serves to prevent the vertical displacement of the endless belt.

At the side of the table where the operator sits is arranged a guide and supporting-plate, 31, for the cigar-wrapper. This plate extends lengthwise from another guide plate or surface, 32, to the standard 3, and practically covers the carriage 15 and other parts of the machine at one side of the latter. The plate 31 is connected by hinges with a back plate, 4<sup>a</sup>, which rises from the base-plate 4. By means of said hinges the plate 31 can be turned back to uncover the parts beneath the same in order to gain access thereto for various purposes, such as changing the endless belt. The plate 31 is arched or made of a curved shape, so as to present a convex back upon which the wrapper lies. The plate 31 is inclined in a downward direction from the back plate, 4<sup>a</sup>, to the open space formed between its lower edge and the plate 30 at the other side of the machine. The lower edge of the plate 31 describes a curved line in a lengthwise direction, and it is turned under or rounded off, so as not to present any sharp angles to the wrapper. The bight formed in

the endless belt by the special arrangement of rollers is in a direct vertical line with the open space between the two plates 30 and 31. The guide-plate 32, from which the plate 31 starts, is practically a continuation of the latter, and in practice it is cast or formed in one piece with the end standard, 100, as is shown in Fig. 4 of drawings. In other words, the plate 32, together with other parts necessary to the perfect formation of the cigar-head, constitute an upper inward extension of the end standard, 100. The plate 32 slopes in a downward direction to a cavity, 33, therein, which has a concave bottom and approximates in shape to the head of a cigar. This cavity starts in an inward direction from a ledge, 34, which is made slightly concave, so as to properly guide one finger of the operator into the cavity and prevent the slipping of the finger. The end of the cavity 33 runs into a point, which is, however, not acute enough to prevent the insertion of the forefinger of the operator into the cavity for the purpose hereinafter stated. The point of the cavity is designated by the reference-numeral 35, and it is formed by the oblique inner edge, 34<sup>a</sup>, of the ledge 34 and the oblique bottom edge, 32<sup>a</sup>, of the plate 32. Directly above said bottom edge the plate 32 is made slightly concave, the concavity forming a depression, which is indicated by the numeral 36, and is shown more particularly in Figs. 4 and 8 of the drawings. Above the concavity 36, which extends the entire width of the plate 32, the latter is shaped so as to possess a concavity, 37, where it joins the plate 31, and a convex surface, 38, at its outer edge, as is shown in Fig. 7.

The function and operation of the various surfaces above described will be referred to in connection with the description of the operation of the machine.

At the end of the machine opposite to where the surfaces just described are arranged is located a longitudinally-adjustable mandrel, 40, which passes through the upper part of the standard 3 and extends into the machine, so as to be in axial line with the space between the two carriages 15 and 16. The mandrel is placed in a bearing in the standard 3, and a cap, 41, secured to the top of the latter, constitutes the other half of the bearing. The inner end of the mandrel has a head, 42, which bears against the butt of the cigar-bunch. A collar, 43, near said head bears upon a spiral spring, 44, and holds the same in place upon the mandrel between the inner wall of the standard 3 and said collar. Another collar, 45, at the outer end of the mandrel serves to hold a spring, 46, in place between a bracket, 47, and said collar 45. The bracket 47 has a socket for the passage of the sliding mandrel, and it is bolted to the outer side of the standard 3. A pulley, 48, fitted on the mandrel between the socket 47 and the standard 3, receives a belt, 49, which passes through the table 1 and goes around a pulley, 50, on the end of the shaft 6 of the lower



fluted roller, 10. Motion being applied to the shaft of said roller by a power-shaft, 51, pulleys 52 and 53, and belt 54, it follows that the endless belt is caused to travel and that the  
 5 mandrel bearing against the butt of the cigar is made to rotate, so that the cigar-bunch will be turned by the combined action of the belt and the mandrel. The power-shaft 51 has a pulley, 55, which is being constantly driven from a  
 10 steam-engine or other prime motor. This pulley 55 is combined with a clutch, 56, in order to lock it to the shaft 51 for driving the wrapping mechanism. A lever, 57, connected with the clutch and pivoted to a bracket, 58,  
 15 on the table-frame has a treadle or foot-piece, 59, at its lower end, which projects under the table, so that the operator can depress the treadle to connect the clutch with the pulley and set the machine in motion. A spring, 60,  
 20 serves to disengage the clutch from the pulley when the foot-pressure upon the treadle is removed.

Referring to the operation of the machine, it should be observed that the wrappers to be  
 25 applied to the cigar-bunches are cut out into the exact form or size by means of appropriate machinery, so that the entire operation of wrapping the bunches or finishing the cigars can be performed without any subse-  
 30 quent trimming of the wrapper. In order to apply a wrapper to a cigar-bunch the operator places it upon the plate 31, so that its head portion will come to lie near the point 31 on said plate, while its other end is  
 35 conducted between the endless belt and the bunch contained in the bight of the latter. Thereupon the machine is set in motion by the clutch mechanism, and the movement of the belt and mandrel will cause the wrapper  
 40 to be sufficiently wound on the bunch, so that upon turning the wrapper to bring its head portion upon the plate 32 the proper tuck will be formed. As the wrapper is turned, it is  
 45 caused to lie upon the convex-arched back of the plate 31, which serves to give it the proper tension and support while it is being gradually wound or wrapped around the bunch. It will be perceived that the arched plate  
 50 hence the latter is presented to the bunch in the most favorable position and all liability of tearing or wrinkling is prevented. The head of the wrapper after it is turned from its first position is caused to lie upon the  
 55 concave surfaces of the plate 32, and as it is gradually wrapped around the bunch the peculiar hook-shaped head follows the contour of the concave surfaces and is fed into the tip-forming head almost without the aid  
 60 of the operator's fingers.

In order to form a perfect solid head the operator places the forefinger of his left hand (the drawings showing a machine for applying  
 65 left-hand wrappers) into the tip-forming cavity. The finger is held almost vertically, and the end of the cigar-bunch is made to abut against the inner side of the finger-tip, which

practically constitutes, in connection with the concave cavity in which the bunch lies, a  
 70 thimble or mold for the perfect formation of the cigar-head. It should be understood that by causing the end of the cigar-bunch to abut or press against the finger held almost vertically in the tip-forming cavity all liability of  
 75 the wrapper passing beyond the head of the bunch is avoided, and the product of the machine is invariably a cigar with a solid or perfect head.

I desire it to be understood that in machines where the tip-forming device is shaped  
 80 so as to allow the finger to be placed only upon the top of the cigar-head the formation of false heads or protrusions beyond the tip is almost invariably the result. As the wrapper is fed into the tip-forming cavity to  
 85 undergo the conjoint manipulation of the operator's finger and the peculiarly-shaped cavity, which constitute together a yielding or elastic thimble, a suitable quantity of paste is taken up from the concave depression 36  
 90 on the wrapper-supporting plate 32. This paste is applied to the plate by the operator in any suitable manner.

In order to adapt the machines for different-sized cigars, the endless belt is moved  
 95 lengthwise of the machine by means of the screw-shafts connected with the two carriages. The rotating mandrel also, by reason of its spiral springs and adjustable collars, can be set so as to conform to the length of the cigar-  
 100 bunch to be wrapped.

It will be perceived that in a machine of the above construction the cigar-bunch while being wrapped is only supported directly at  
 105 its tip and butt portions. At all other points it is not in contact with either rollers or a belt, and hence excessive friction is avoided and the wrapper is applied with greater ease and facility than in other machines employing a  
 110 narrow belt and a mold extending the entire length of the cigar-bunch.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a machine for applying wrappers to  
 115 cigars, a device for forming the head portion of the cigar, constructed as herein shown and described—that is, comprising a plate or surface having a longitudinal concavity open at its top throughout its entire length and run-  
 120 ning to a point, the latter being cut away or open at one side, as described, to permit the tip or "ball" of the operator's finger to be inserted laterally into the point of the concavity, for the object herein stated. 125

2. In a machine for wrapping cigars, the combination of the longitudinally-adjustable carriages, each comprising parallel side plates and rollers fitted between the same, of the  
 130 narrow endless belt passing over said rollers between the side plates of the carriages, and the stationary guideways or rods upon which the carriages can slide, substantially as herein set forth.



3. In a machine for applying wrappers to  
cigar-bunches, the combination of the in-  
clined longitudinally-arched plate, the in-  
clined end plate having a concave depression  
5 and a tip-forming plate or surface having a  
concave tapering cavity made open at the top  
and end, and the ledge at the end of said cav-  
ity with the endless traveling apron, and the  
operating and guide rollers, substantially as  
10 herein set forth.

4. In a machine for applying wrappers to  
cigar-bunches, the combination of the longi-  
tudinally-adjustable carriages having guide-  
rollers and the endless belt passing over the

same, with the fixed and pivoted frames hav- 15  
ing guideways for said adjustable carriages,  
and the screw-shafts on said fixed and piv-  
oted frames for moving the carriages, as and  
for the purpose set forth.

In testimony that I claim the foregoing as 20  
my invention I have signed my name, in pres-  
ence of two witnesses, this 12th day of June,  
1888.

S. J. FLATOW.

Witnesses:

A. M. TANNER,  
J. F. QUINN.