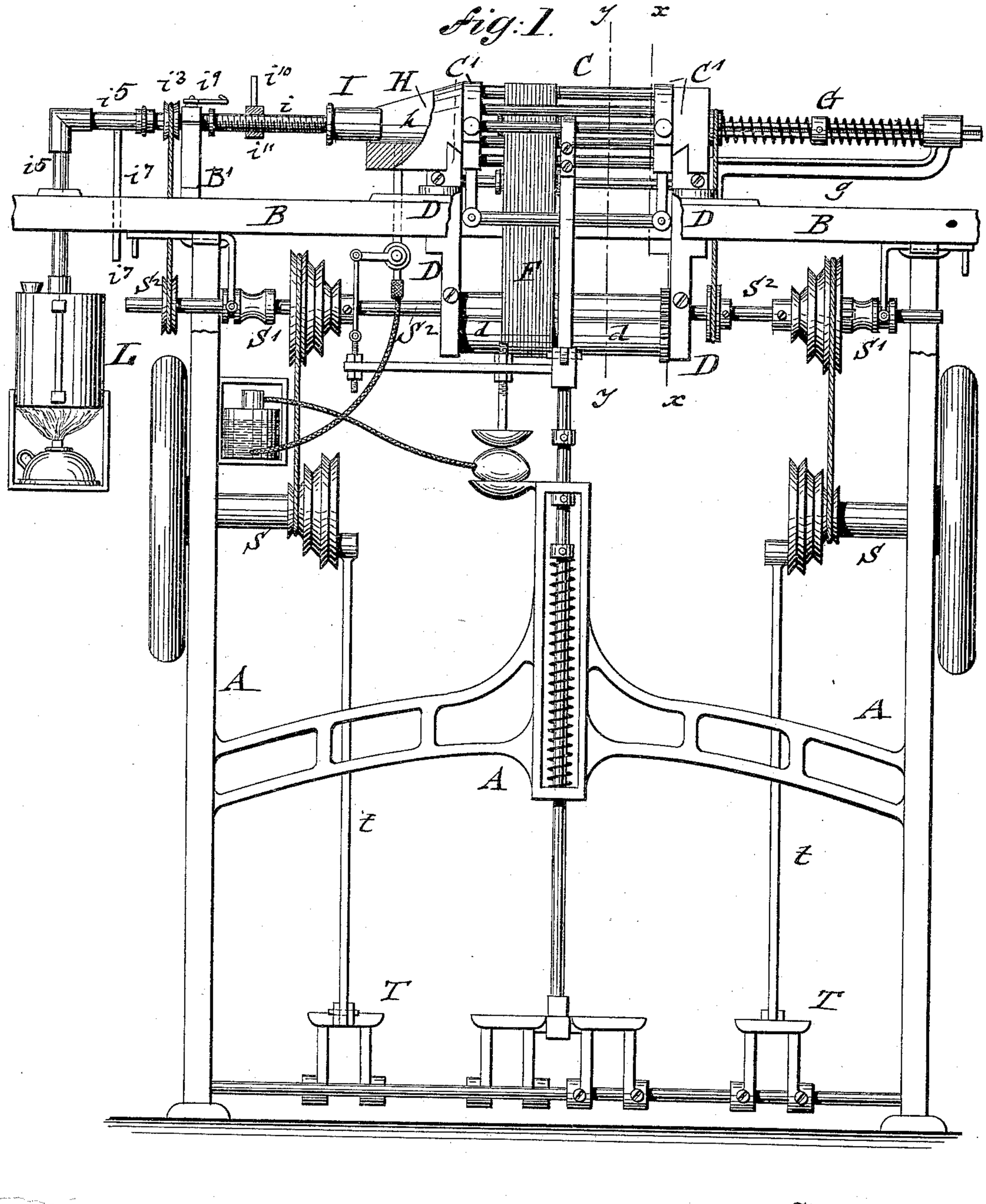
(No Model.) 5 Sheets—Sheet 1.

J. E. SCHMALZ.

CIGAR BUNCH WRAPPING MACHINE.

No. 411,304. Patented Sept. 17, 1889.

Fig: 1.



Witnesses
A. Schehl.
Carl Kark

Inventor
John E. Schmalz.
By his Attorneys
Goepel & Raegener.

(No Model.) 5 Sheets—Sheet 2.

J. E. SCHMALZ.

CIGAR BUNCH WRAPPING MACHINE.

No. 411,304. Patented Sept. 17, 1889.

Fig: 2.

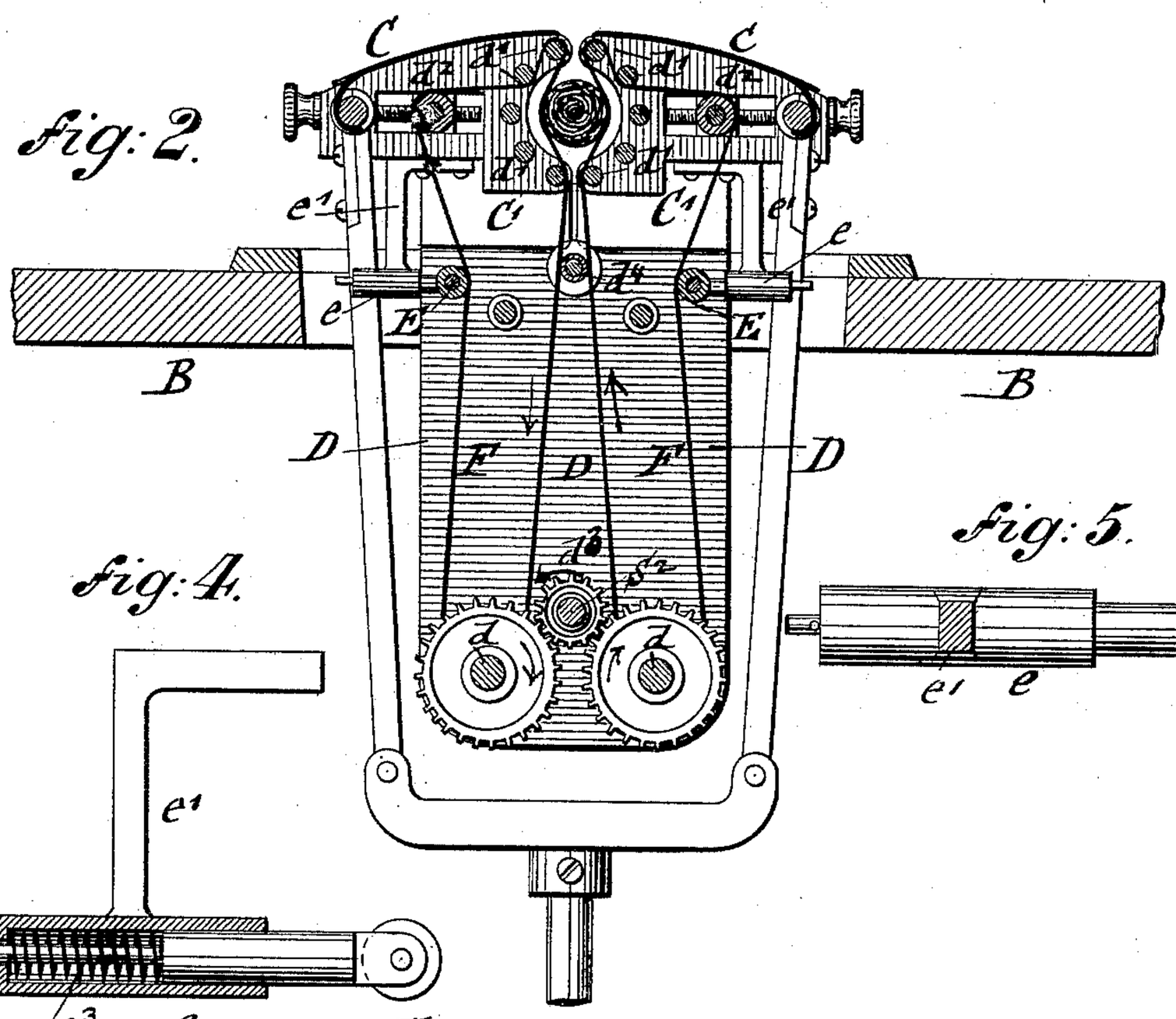


Fig: 4.

Fig: 5.

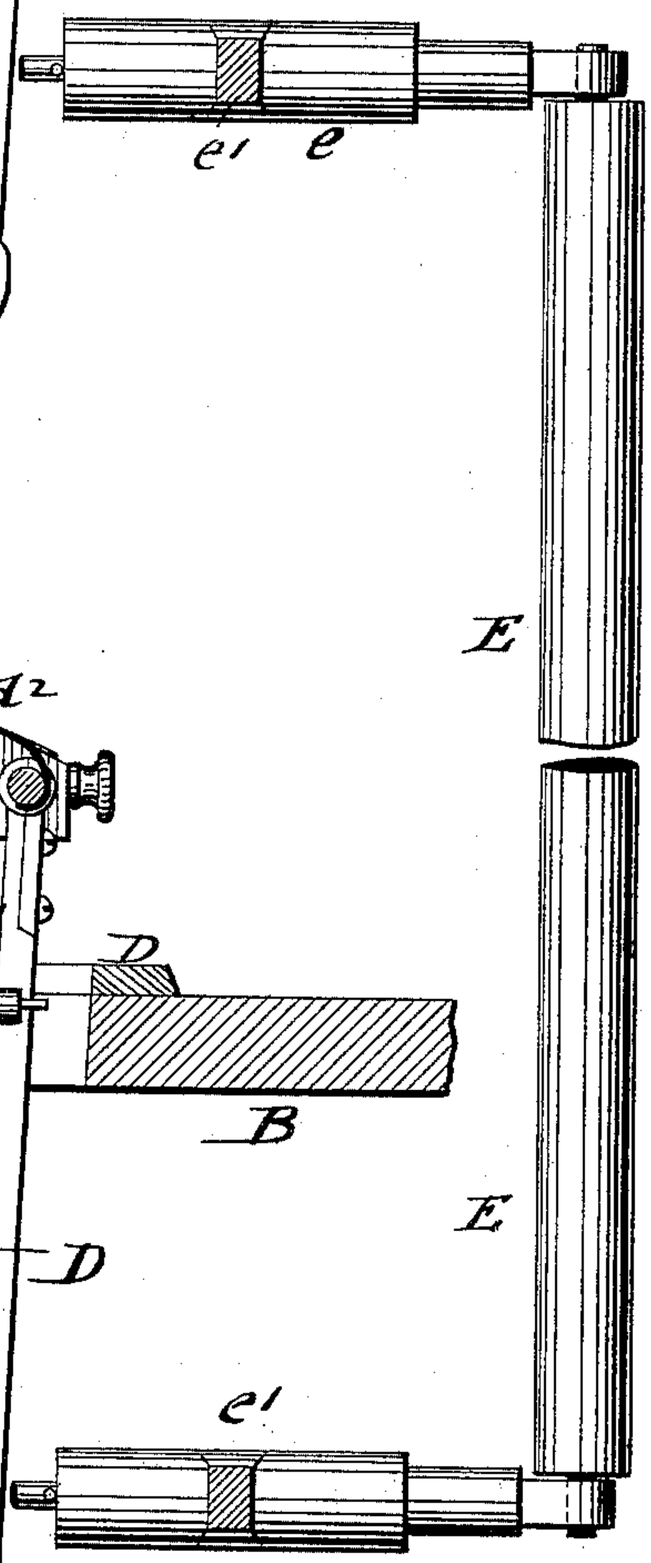
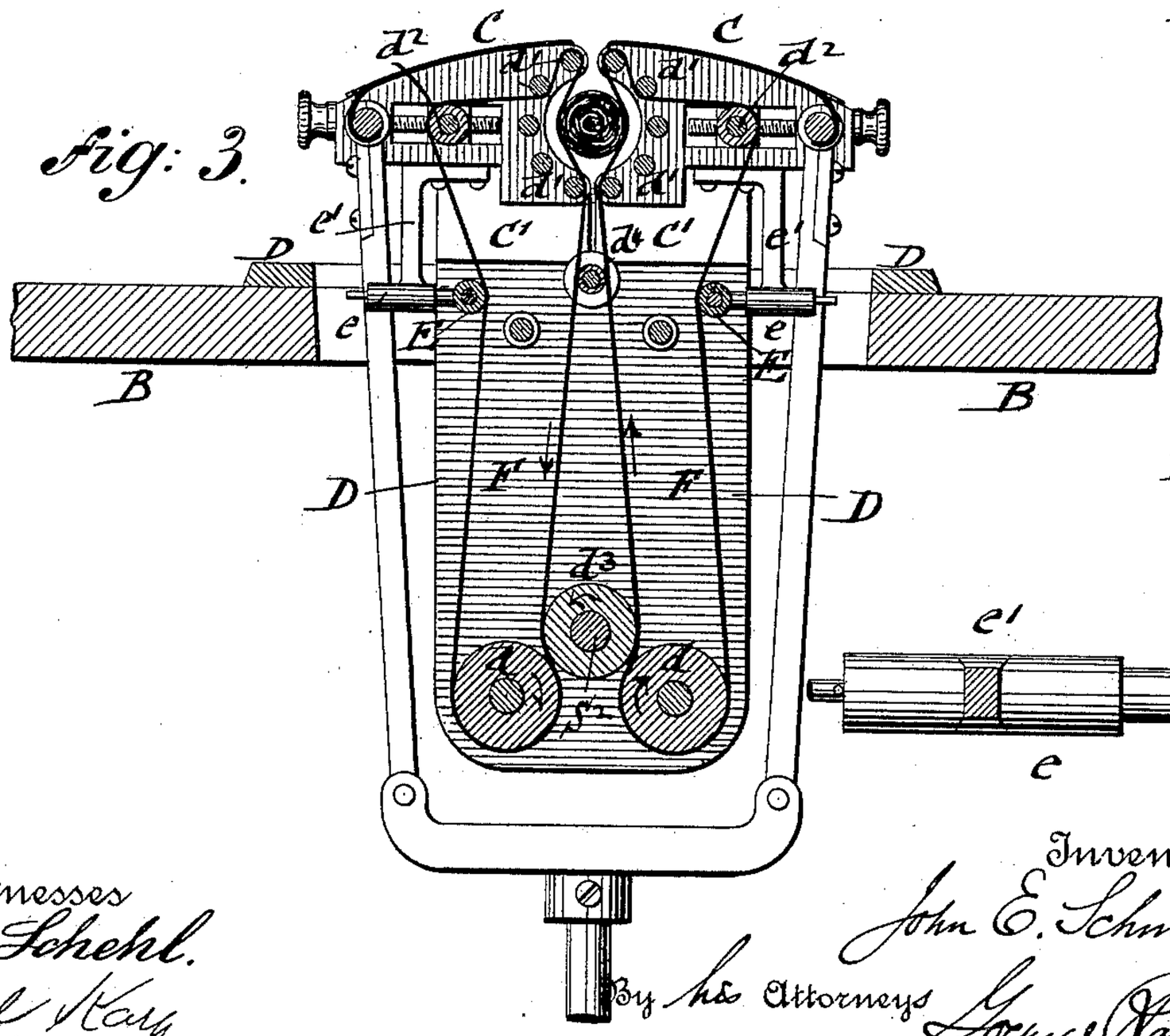


Fig: 3.



Witnesses
A. Schehl.
Carl Kaeg

Inventor
John E. Schmalz
By his Attorneys Goepel & Taegener

(No Model.) 5 Sheets—Sheet 3.

J. E. SCHMALZ.

CIGAR BUNCH WRAPPING MACHINE.

No. 411,304. Patented Sept. 17, 1889.

Fig: 6

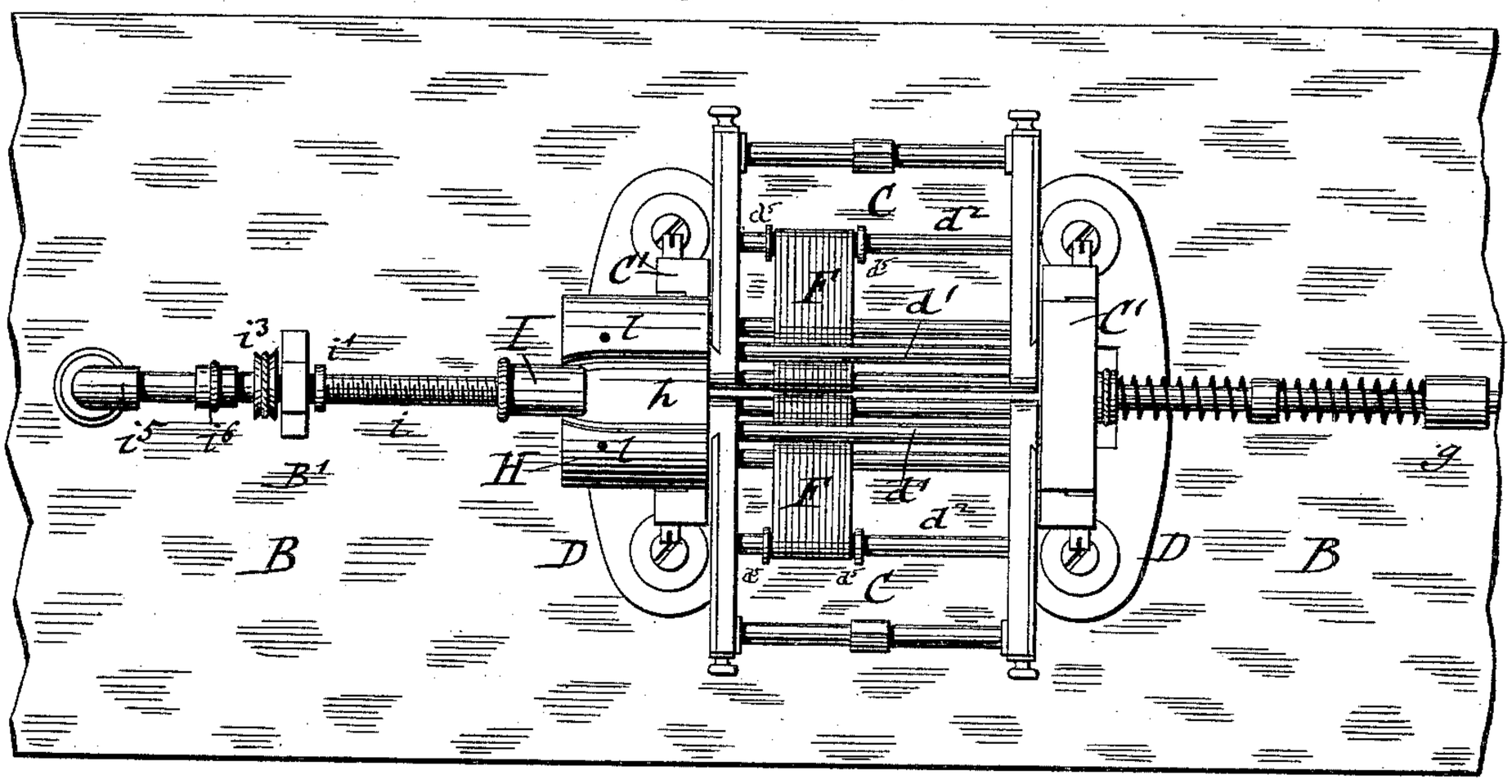


Fig: 7.

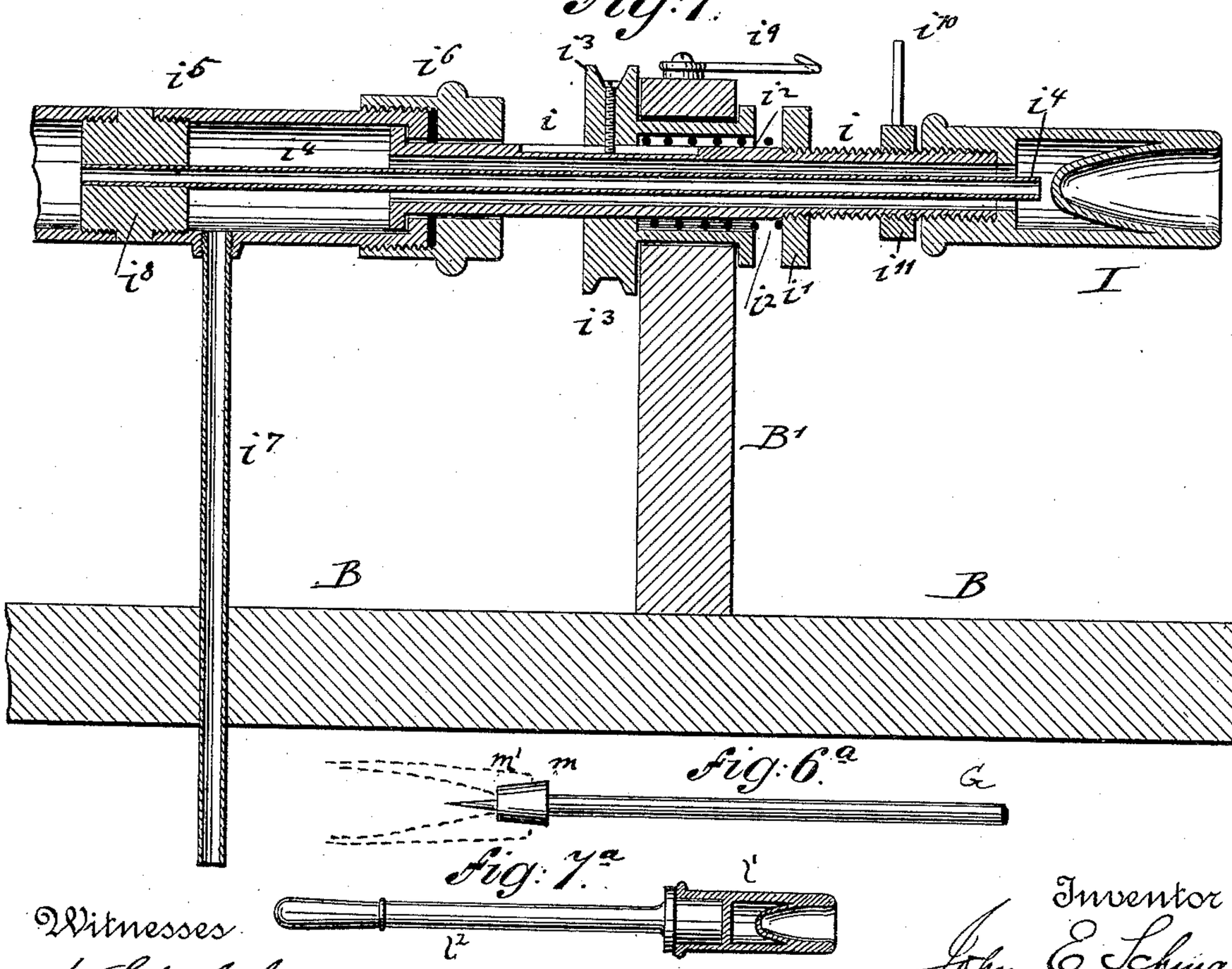


Fig: 6ª

Fig: 7ª

Witnesses
A. Schehl.
Carl Kays

Inventor
John E. Schmalz
By his Attorneys Goepel & Raegener

(No Model.) 5 Sheets—Sheet 4.

J. E. SCHMALZ.

CIGAR BUNCH WRAPPING MACHINE.

No. 411,304. Patented Sept. 17, 1889.

Fig: 8.

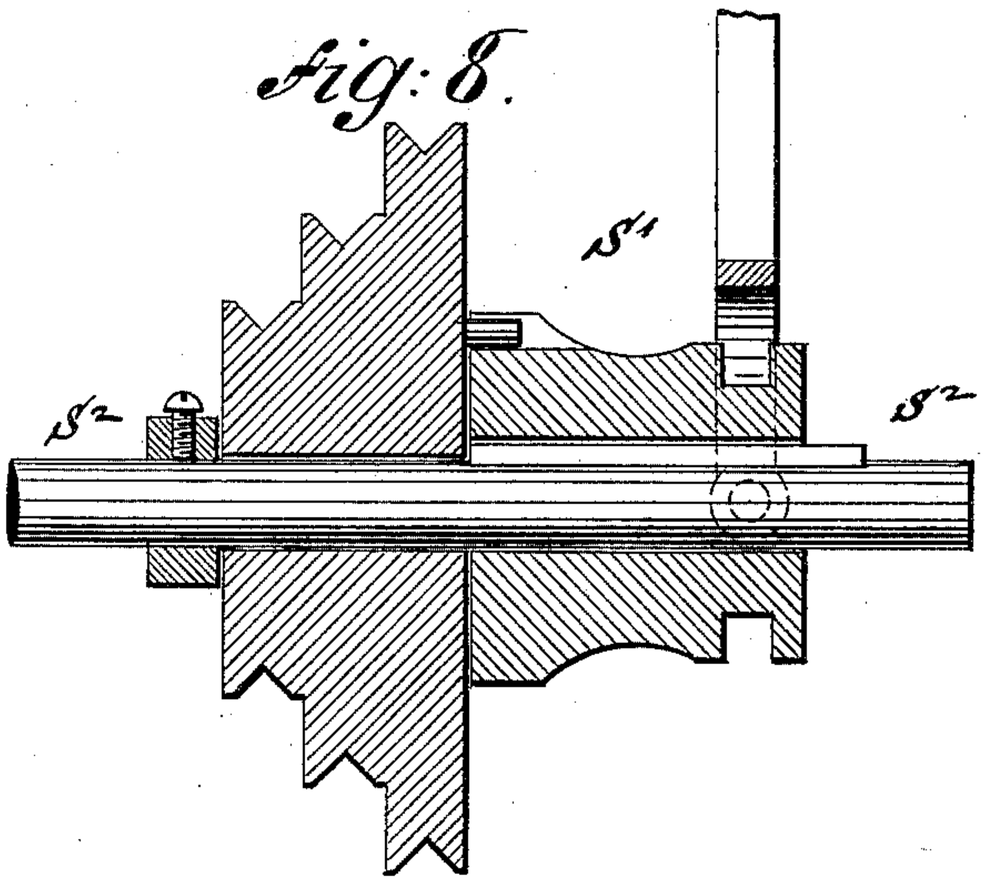


Fig: 9.

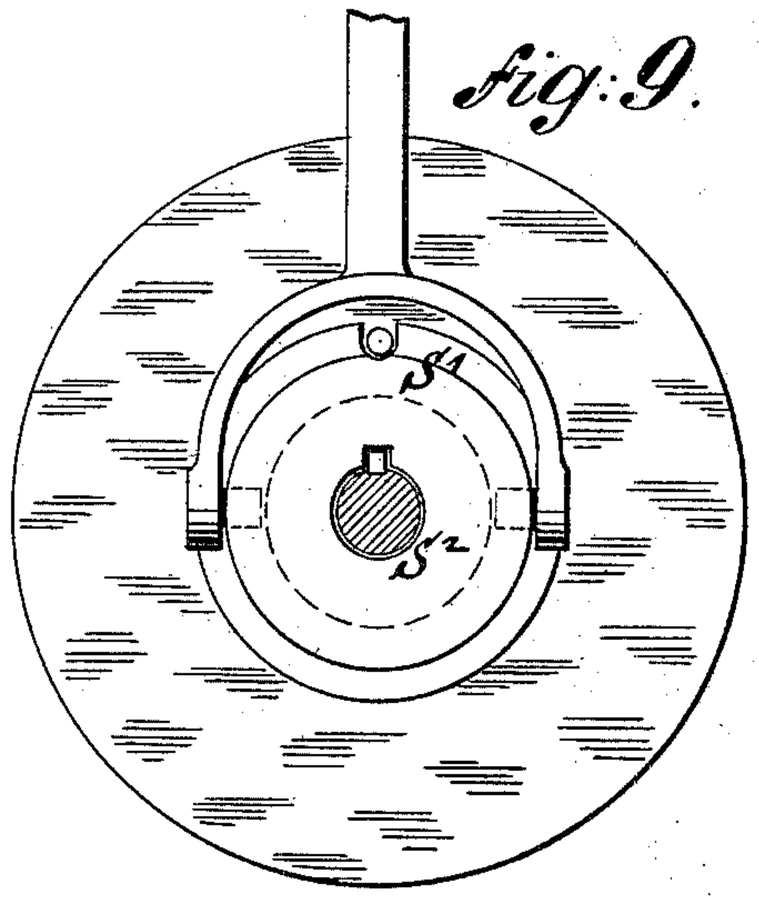


Fig: 10.

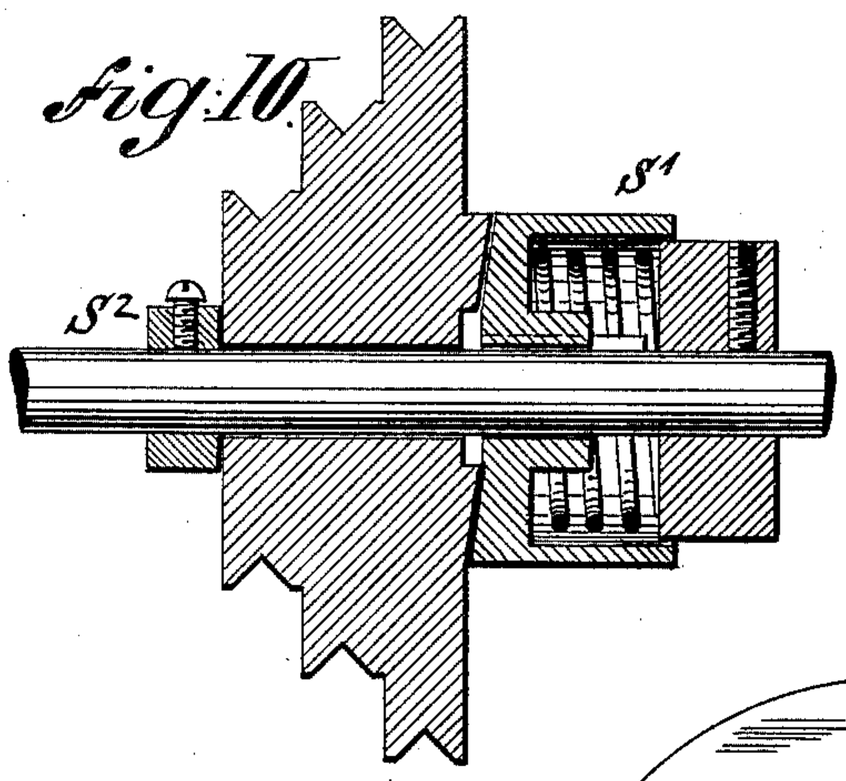


Fig: 11.

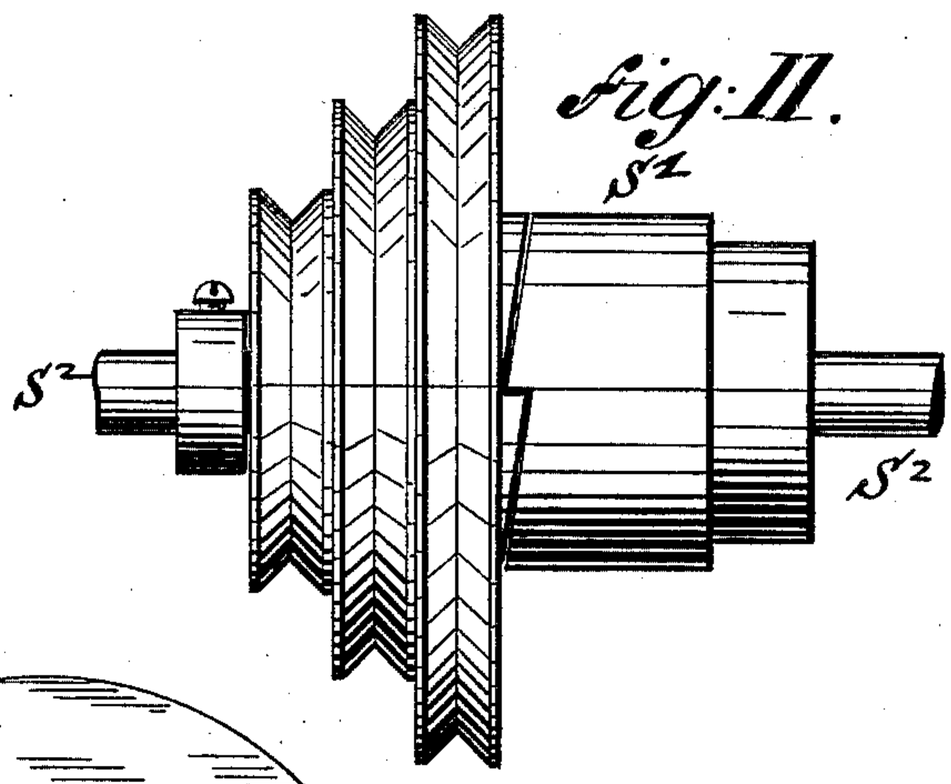
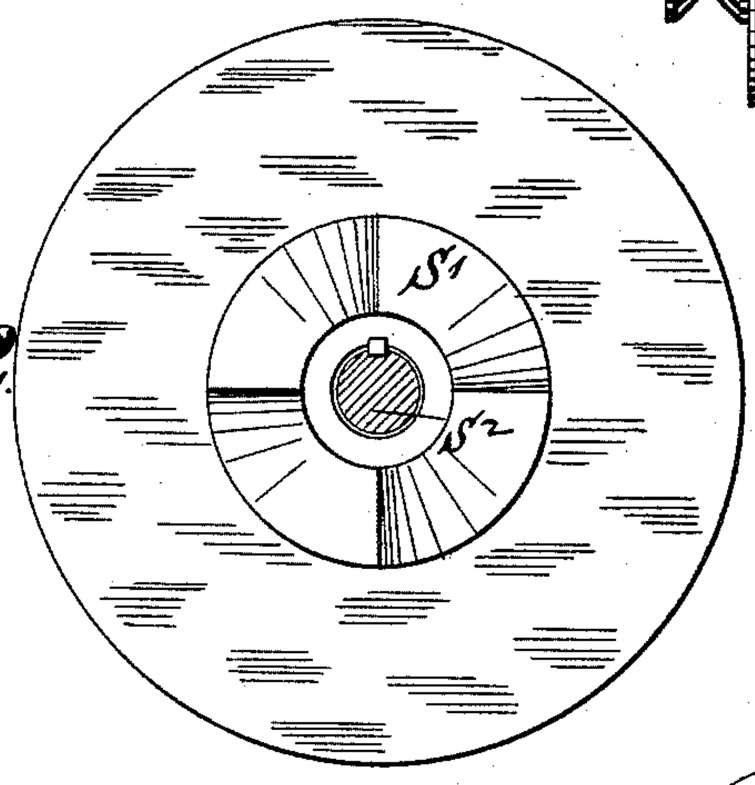


Fig: 12.



Witnesses
A. Scherl.
Carl Stark

Inventor
John E. Schmalz
By his Attorneys Goepel & Raegener

(No Model.) 5 Sheets—Sheet 5.

J. E. SCHMALZ.

CIGAR BUNCH WRAPPING MACHINE.

No. 411,304. Patented Sept. 17, 1889.

Fig: 13.

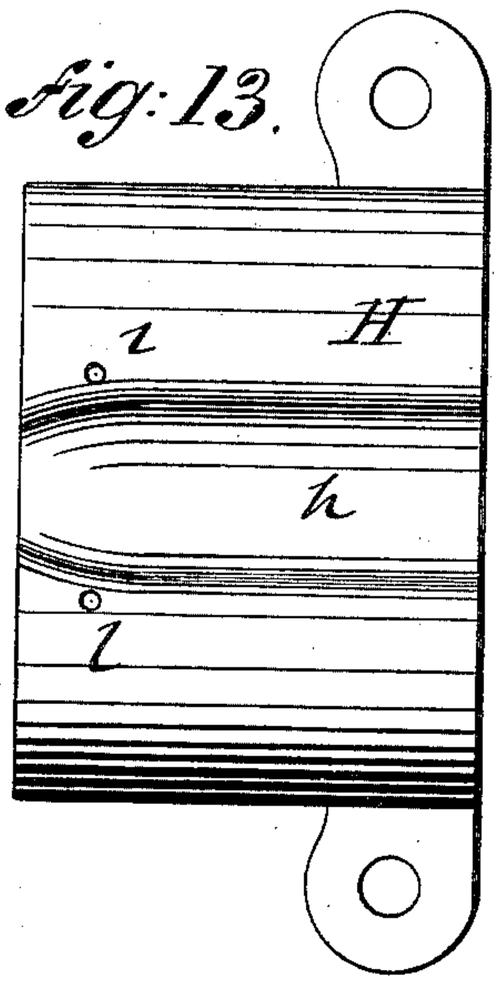


Fig: 14.

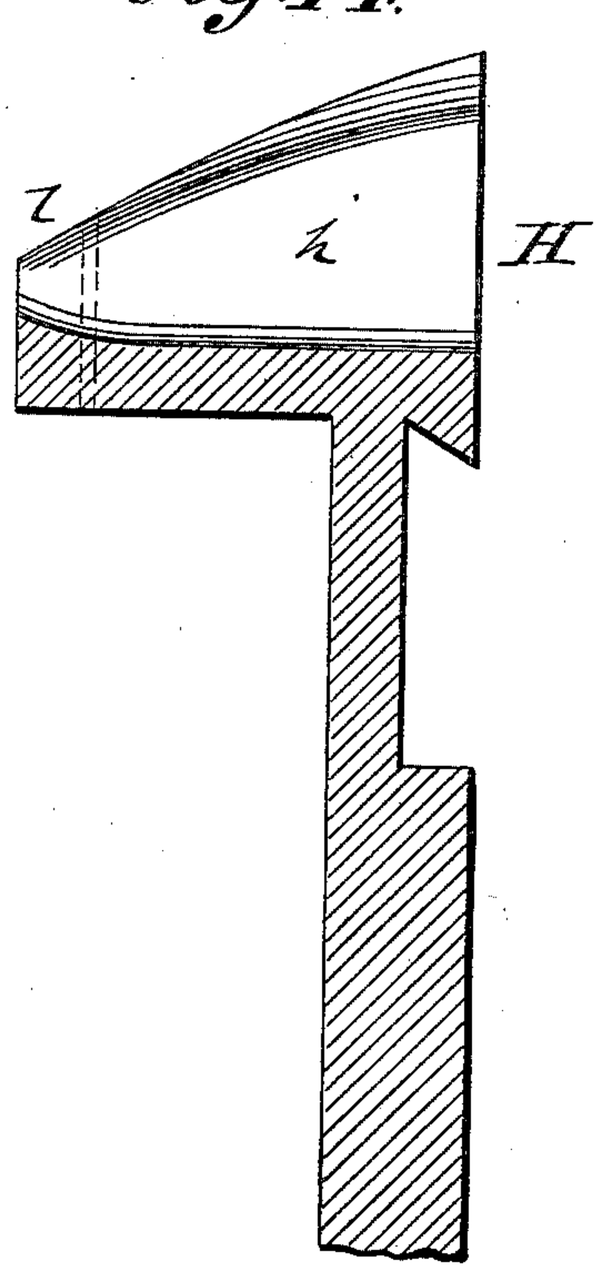


Fig: 15.

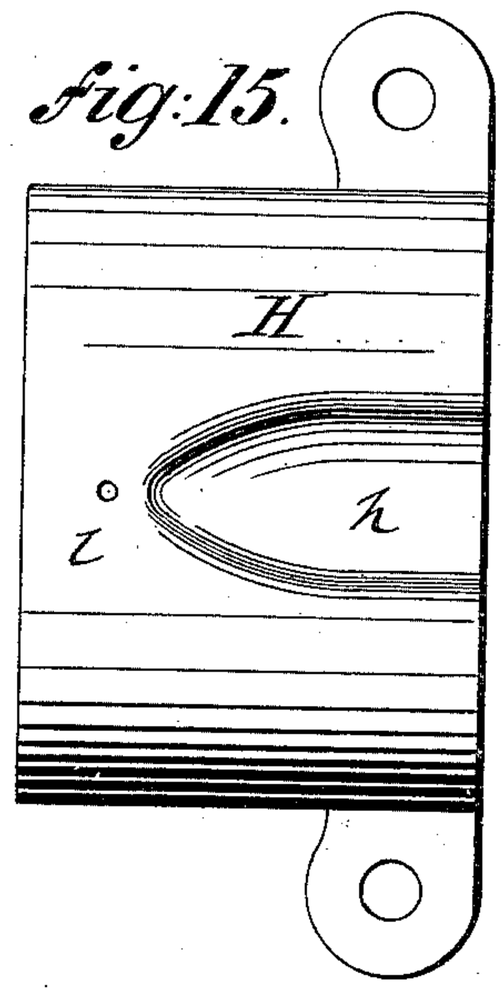
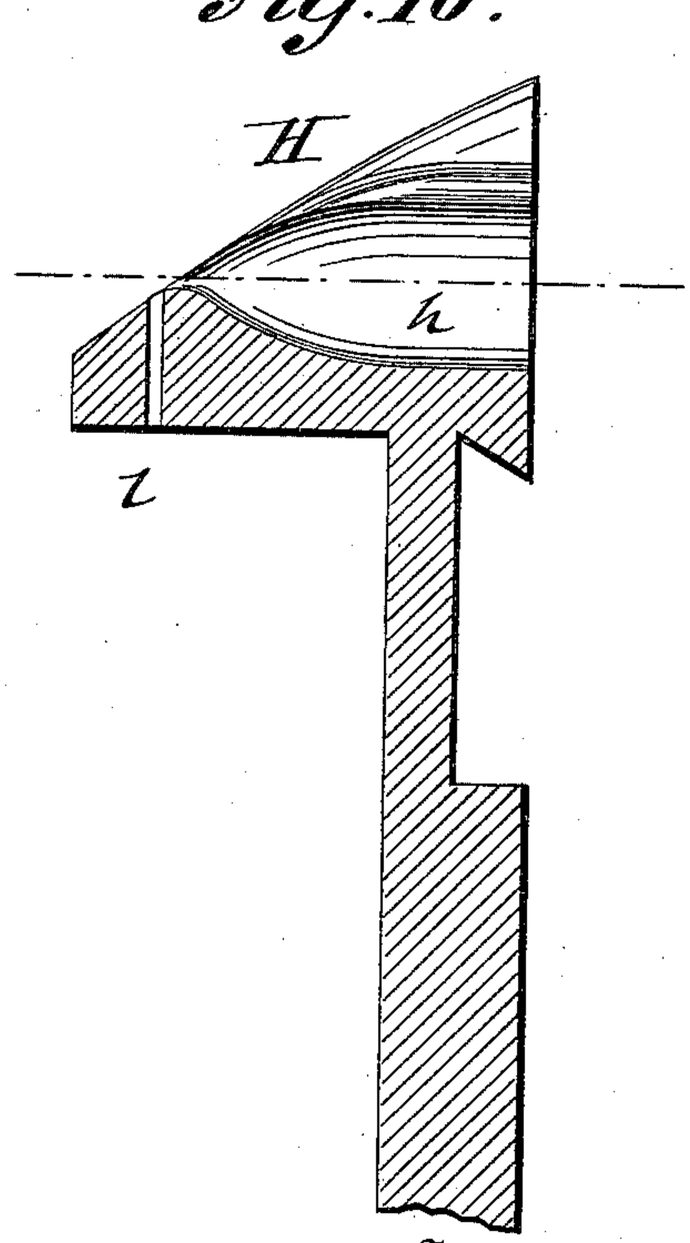


Fig: 16.



Witnesses
A. Schehl.
Carl Kark

Inventor
John E. Schmalz
By his Attorneys Goepel & Raegener

UNITED STATES PATENT OFFICE.

JOHN E. SCHMALZ, OF NEW YORK, N. Y., ASSIGNOR TO THE SCHMALZ CIGAR MACHINE COMPANY, OF NEW YORK.

CIGAR-BUNCH-WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 411,304, dated September 17, 1889.

Application filed July 27, 1888. Serial No. 281,186. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. SCHMALZ, of the city, county, and State of New York, have invented certain new and useful Improvements in Cigar-Bunch-Wrapping Machines, of which the following is a specification.

This invention relates to certain improvements in a cigar-bunch-wrapping machine for which Letters Patent were granted to me heretofore, numbered, respectively, 246,219 and 364,773, and dated August 23, 1881, and June 14, 1887, the improvements being designed with a view to make the operation of placing the wrapper around the bunch steady and reliable and of finishing the tip of the cigar immediately after the wrapper is wrapped around the bunch; and the invention consists, first, in the combination, with oscillating bunch-holders having guide-rollers and laterally-adjustable tension-rollers, of two independent endless aprons passing over said rollers, driving-rollers on said aprons, and spring tension-rollers applied to the same.

The invention consists, secondly, in the combination, with oscillating bunch-holders having guide-rollers and endless aprons guided on the same and on suitable driving-rollers, of a tip-forming block having a cavity open at the outer end, and a longitudinally-reciprocating and spring-actuated rotary tip-finishing thimble extending into the cavity of the tip-forming block, said thimble being arranged in line with the rotary and spring-actuated mandrel arranged at the opposite end of said bunch-holders.

The invention consists, further, of certain details of construction and combination of parts, as will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved cigar-bunch-wrapping machine, in which a part of the tip-forming block is broken away to show the tip-finishing thimble. Figs. 2 and 3 are vertical transverse sections through the bunch-former, respectively on line *x x* and *y y* of Fig. 1, said figures being drawn on a larger scale. Figs. 4 and 5 are respectively a detail vertical longitudinal section and a top view of one of the spring tension-rollers of the wrapping-aprons. Fig. 6 is a plan of the machine. Fig. 6ª is a detail view of a mandrel with a conical head and pointed end for bunches with tapered butts. Fig. 7 is a detail vertical longitudinal section of the tip-finishing thimble. Fig. 7ª is a detail side view of a hand-operated thimble, being partly in section. Figs. 8, 9, 10, 11, and 12 are details of different clutches, drawn on a large scale, for throwing the intermediate transmitting-shafts in or out of motion. Figs. 13, 14, 15, and 16 are respectively detail top views and vertical longitudinal sections of the different tip-forming blocks used in my wrapping-machine.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the supporting-frame of my improved cigar-bunch-wrapping machine, B the table of the same, and C C the bunch-holders, which are operated by treadles and suitable spring-actuated connecting-rods, so as to be oscillated and moved toward or away from each other. The bunch-holders C C are pivoted to guide-blocks C′ C′, supported on downwardly-extending hanger-plates D D, which are attached to the table B by means of lateral flanges and fastening-screws. The hanger-plates D D are provided with bearings for the driving-rollers of two endless aprons F F, while at the upper part of the holders are arranged guide-rollers *d′* and laterally-adjustable tension-rollers d^2, which latter are guided in slots in the bunch-holders. Below the adjustable tension-rollers d^2 are arranged spring tension-rollers E, the shanks of which are guided in sockets *e*, attached to brackets *e′*, the shanks of said rollers being acted upon by spiral springs e^3, located in said sockets *e*, as shown in Fig. 4. The spring tension-rollers E serve to impart a uniform tension to the endless aprons F F, which are stretched around the guide-rollers *d′*, adjustable tension-rollers d^2, spring tension-rollers E, and driving-rollers *d d*.

Two independent endless aprons are used for placing the wrapper around the bunch, said aprons being arranged symmetrical to

the vertical longitudinal center plane of the machine, as shown clearly in Figs. 2 and 3, and stretched by auxiliary rollers d^3 d^4, which are located intermediately between the aprons F F—one near the driving-rollers d d and the other near the guide-rollers d'. The spring tension-rollers E have the function of keeping up the uniform tension of the aprons and taking up the slack of the same produced by the lengthening when in use for some time, so as not to require the frequent readjustment or resewing of the aprons.

The aprons F are guided on the rollers d' by means of collars d^5, so as to be retained in the required position.

The general construction of the oscillating bunch-holders C C is the same as in my prior patent, No. 364,773, referred to, and does not require any further detailed description.

At one end of the bunch-holders C C, and axially in line with the longitudinal axis of the same, is arranged a rotary spring-balanced mandrel G, which is guided in a bracket-arm g, the function of said mandrel being the same as set forth in my patent, No. 364,773, before referred to. When bunches with tapering butts are to be wrapped, the mandrel G is provided with a conically-tapering head m, having a tapering pin m', which enters the butt and holds it in position on the mandrel while putting on the wrapper, said head and pin being shown in Fig. 6[a]. At the opposite side of the bunch-holders C C and in line with the longitudinal axis of the same and of the mandrel is arranged a tip-forming block H, the cavity h of which is enlarged at the outer end, so as to permit the introduction of a tip-finishing thimble I, which is likewise arranged in line with the axis of the bunch-holders, mandrel, and tip-forming block.

Rotary motion is imparted to the driving-rollers of the wrapping-aprons, the mandrel, and the tip-finishing thimble by treadles T at the lower part of the supporting-frame, which treadles are connected by pitmen t with intermediate shafts S, that transmit by suitable belt-and-pulley transmissions and clutch devices S', as shown in detail in Figs. 8 and 12, motion to a shaft S^2 and the driving-rollers of the endless aprons, and from the same by additional belt-and-pulley transmissions to the shafts of the mandrel G and thimble I, respectively. In place of a treadle motion the rotary parts referred to may be operated by power applied to the transmitting-shafts of the machine.

An automatically-operated device for supplying paste to the delivery-opening of the tip-forming block H is operated in connection with the oscillating bunch-holders, said paste-supplying device and the means for imparting rotary motion to the driving-rollers of the aprons, the mandrel, and tip-finishing thimble being fully described in my prior patents and form no part of this invention.

The tip-finishing thimble I is screwed to the threaded end of a tubular shaft i, which turns in bearings of the standard B' on the table B. An adjustable collar i' on said tubular shaft i regulates the tension of a spiral spring i^2, which is located in a socket of the driving-pulley i^3, by which rotary motion is imparted to the tubular shank i. The spring i^2 presses the thimble I on the tip of the wrapped bunch while the same is rotated, so as to smoothly finish the tip. Greater speed of rotation is imparted to the thimble than to the bunch, so that the tip is polished at the same time.

The action of the thimble on the tip of the cigar is accelerated by heating the thimble, which is accomplished by supplying steam into the cavity arranged around the same, the steam being conducted through a center tube i^4, which passes through the tubular shaft i into the cavity arranged around the thimble. A fixed supply-pipe i^5 is connected with a suitable steam-generator L, that is supported on a suitable bracket below the table B and heated by an alcohol or other lamp. The shaft i of the thimble is connected by a stuffing-box i^6 with the fixed supply-tube i^5, said shaft i being rotated in said stuffing-box so as to prevent the steam from escaping from the supply-tube i^5. The water of condensation is conducted through the tubular shaft i to a downwardly-extending drain-pipe i^7, which drain-pipe communicates with the fixed supply-tube i^5 near the stuffiing-box i^6, said supply-tube being provided with a fixed partition i^8, through which the center tube i^4 passes, so as to conduct the water of condensation to the drain-pipe i^7 and from the same to a suitable drip-collector. The tip-finishing thimble I may be moved out of the cavity h of the tip-forming block when it is not desired to use the same in finishing the tip. The thimble is locked in position outside of the tip-forming block H by means of a hook i^9, which is pivoted to the top of the standard B', said hook engaging a pin i^{10} on a screw-collar i^{11}, located on the threaded end of the tubular shaft i, as shown in Figs. 1 and 7. When it is desired to finish the tip immediately after the wrapper has been placed around the bunch, the thimble I is moved into the open end of the tip-forming block H, as shown in Figs. 1 and 6, which has the effect of finishing and polishing the tip of the cigar immediately after the wrapper has been placed around the bunch by the aprons of the bunch-holders.

In place of the rotary tip-finishing thimble may be used a detachable thimble l', provided with a handle l^2, as shown in Fig. 7[a]. This thimble is heated by a suitable heater and applied to the tips whenever required, though for most purposes the rotary thimble is to be preferred. When the tip is not to be finished directly after the wrapper is put on the bunch, the tip-forming block shown in Figs. 15 and 16 is used.

The paste-supply orifices l are arranged sidewise of the cavity h of the tip-forming

block H, the edges of which are rounded off, as shown clearly in detail in Figs. 13 and 14, so as not to injure the wrapper when the same is rolled around the bunch. The tip is formed first by the finger, which is placed on the tip-forming block, and which brings the paste over on the wrapper, said finger pressing on the tip and laying the wrapper around the tip while the bunch is being rotated. The tip-forming block H is supported on the upper part of the hanger-plate D in such a manner that it can be readily detached for applying another shape of tip-forming block. When the rotary heated tip-finishing thimble is operated in connection with the tip-forming block, the cigar is not required to be removed from the bunch-wrapping machine to a separate tip-finishing machine, but can be finished directly while in the wrapping-machine immediately after the wrapper has been rolled around the bunch, whereby the cigar is finished in a quicker manner and at a considerable saving of time and labor.

The use of two aprons the tension of which is properly adjusted has the advantage of rolling the wrapper uniformly around the bunch without tearing the same and of wrapping the bunch in a quick and uniform manner. The driving-rollers *d d* are operated by a pinion on the shaft S^2, which pinion meshes with gear-wheels on the driving-rollers, as shown clearly in Fig. 2. By the employment of the two wrapping-aprons the strain on the wrapper while it is being rolled around the bunch is considerably decreased, as the independent aprons hug the bunch and wrapper and exert a uniform pressure on the wrapper at both sides, so that the same is less liable to be torn or injured than by the use of one endless apron, which is conducted over both bunch-holders of the machine, as shown in my prior patent, and in which sometimes unequal strains are produced on the wrapper at opposite sides of the apron, whereby the wrapper is liable to be damaged and the appearance of the cigars injured.

The work performed on my machine is more uniform and of higher finish, owing, mainly, to the employment of two independent properly-adjusted and spring-tensioned aprons, owing to the use of the tip-finishing thimble in connection with the tip-forming block.

By using aprons of greater width my machine can also be used for making bunches in imitation of hand-made bunches, producing thereby cigars having a close resemblance to hand-made cigars.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with oscillating bunch-holders having guide-rollers and laterally-adjustable tension-rollers, of two independent endless aprons passing over said rollers, driving-rollers for said aprons, and spring tension-rollers applied to the same, substantially as set forth.

2. The combination, with oscillating bunch-holders having guide-rollers and adjustable tension-rollers, of two independent endless aprons passing over said rollers, driving-rollers for the said aprons, spring tension-rollers pressing on said aprons, and intermediate stretching-rollers between said aprons, substantially as set forth.

3. The combination, with oscillating bunch-holders having guide-rollers and endless aprons guided on the same, and suitable driving-rollers, of a tip-forming block having a cavity open at the outer end, and a longitudinally-reciprocating and spring-actuated rotary tip-finishing thimble extending into the cavity of the tip-forming block, substantially as set forth.

4. The combination, with oscillating bunch-holders having guide-rollers, endless aprons guided on the same, and suitable driving-rollers, of a rotary spring-actuated mandrel arranged at one end of said holders, a tip-forming block having a longitudinally-open cavity at the other end of the holders, and a rotary tip-finishing thimble located in the open end of the tip-forming block and in line with the same and the mandrel, substantially as set forth.

5. The combination, with oscillating bunch-holders having guide-rollers and endless aprons guided on the same, and suitable driving-rollers, of a rotary spring-actuated mandrel at one end of said holders, a tip-forming block at the other end of the holders, said block having a cavity open at the outer end, a rotary and spring-actuated tip-finishing thimble adapted to operate in said cavity, and means for locking said thimble in position so as to clear the cavity of the tip-forming block, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN E. SCHMALZ.

Witnesses:
PAUL GOEPEL,
MARTIN PETRY.