

No. 654,201.

Patented July 24, 1900.

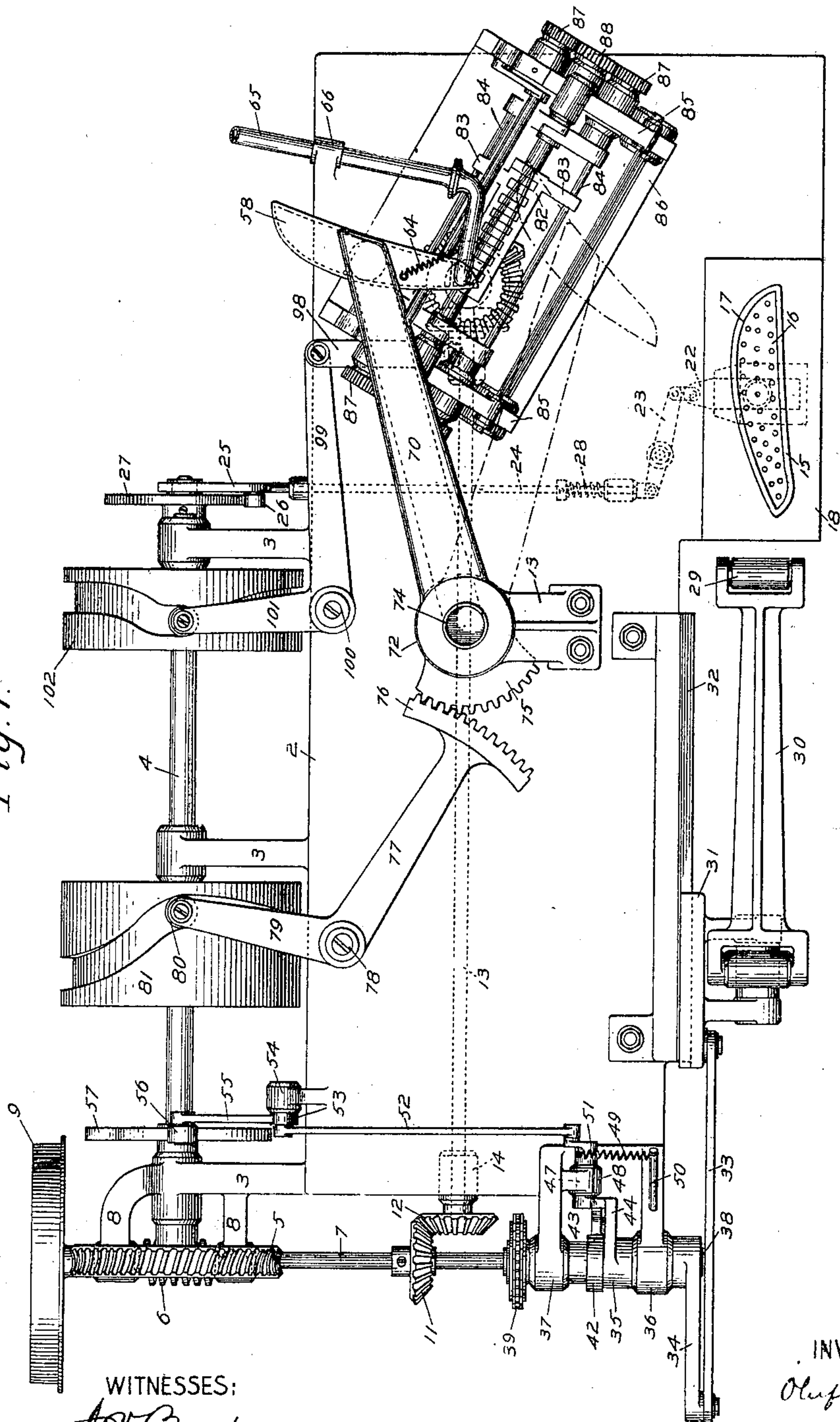
O. TYBERG.
CIGAR MACHINE.

(Application filed Feb. 5, 1900.)

(No Model.)

5 Sheets—Sheet 1.

Fig. 1.



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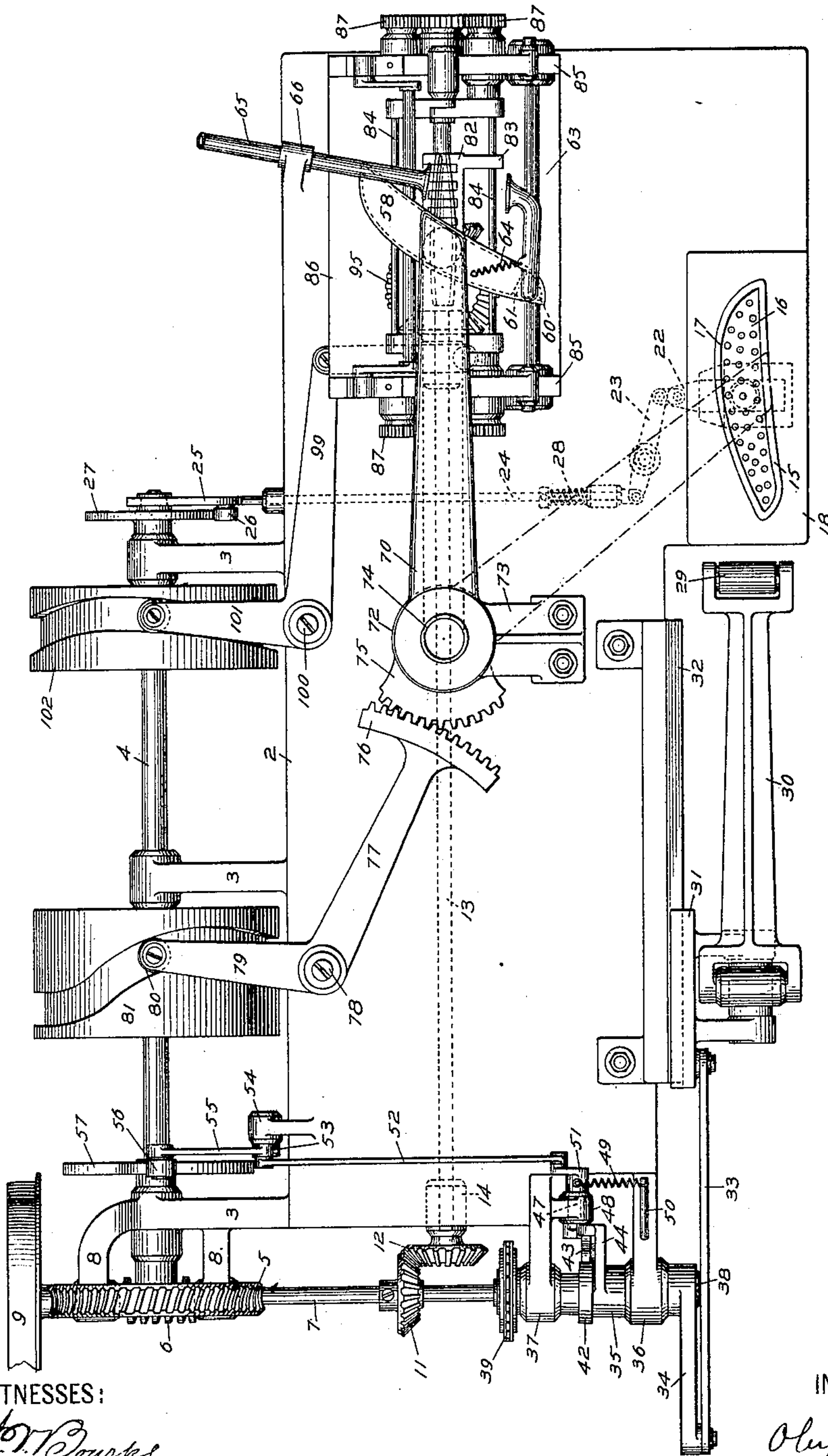
O. TYBERG.
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(Application filed Feb. 5, 1900.)

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5 Sheets—Sheet 2.

Fig. 2.



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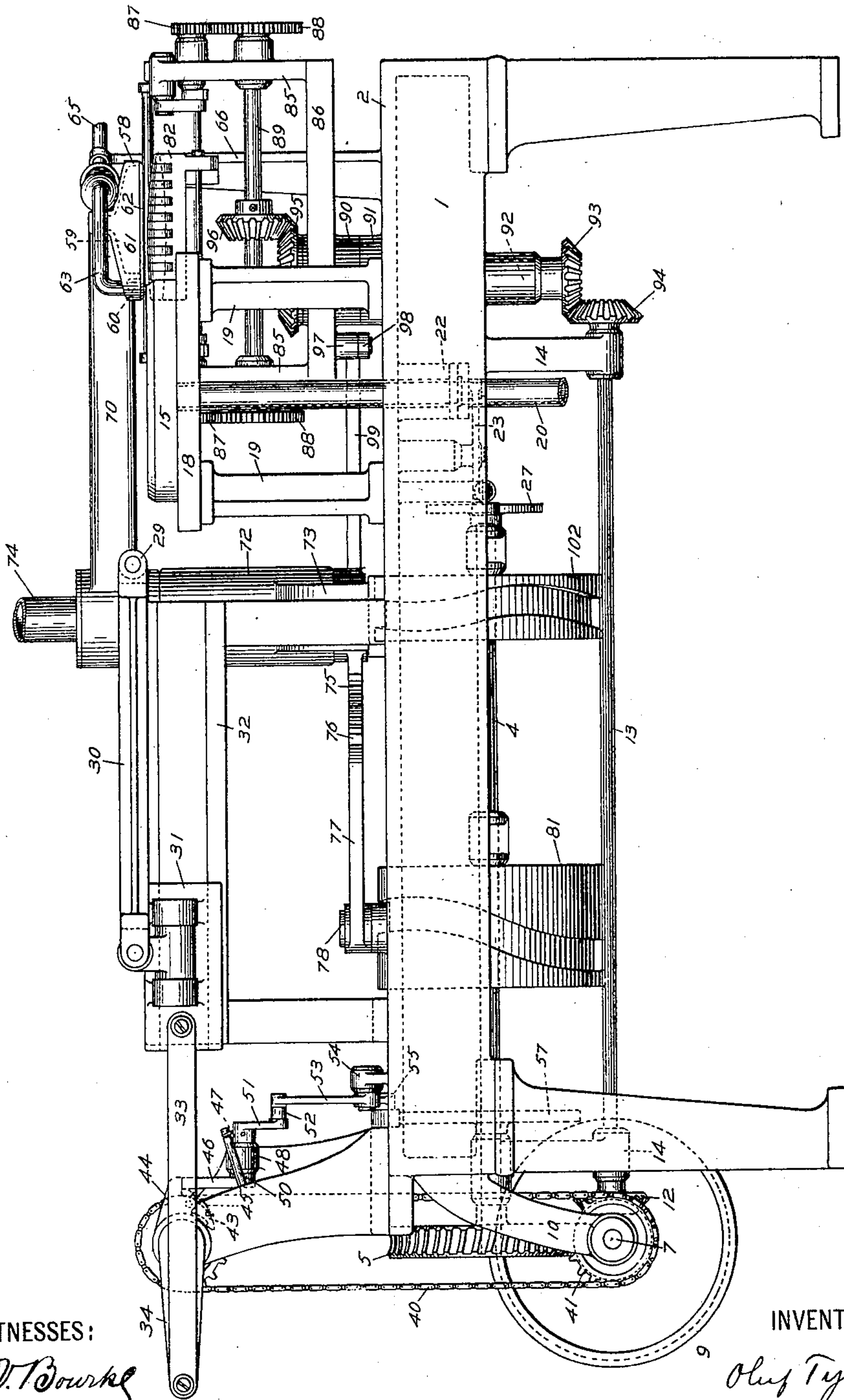
O. TYBERG.
CIGAR MACHINE.

(Application filed Feb. 5, 1900.)

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5 Sheets—Sheet 3.

Fig. 3.



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(No Model.)

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Fig. 4.

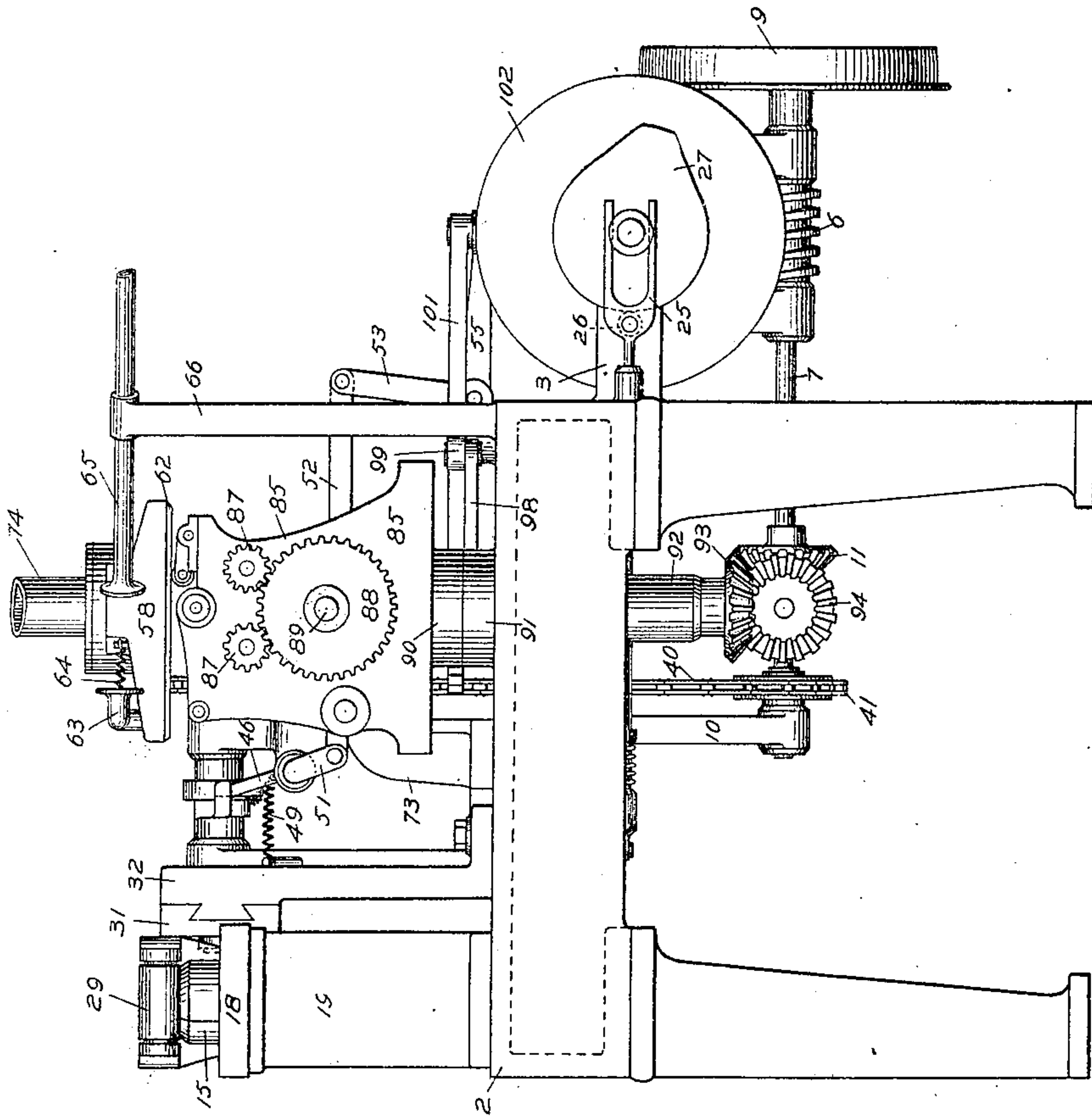
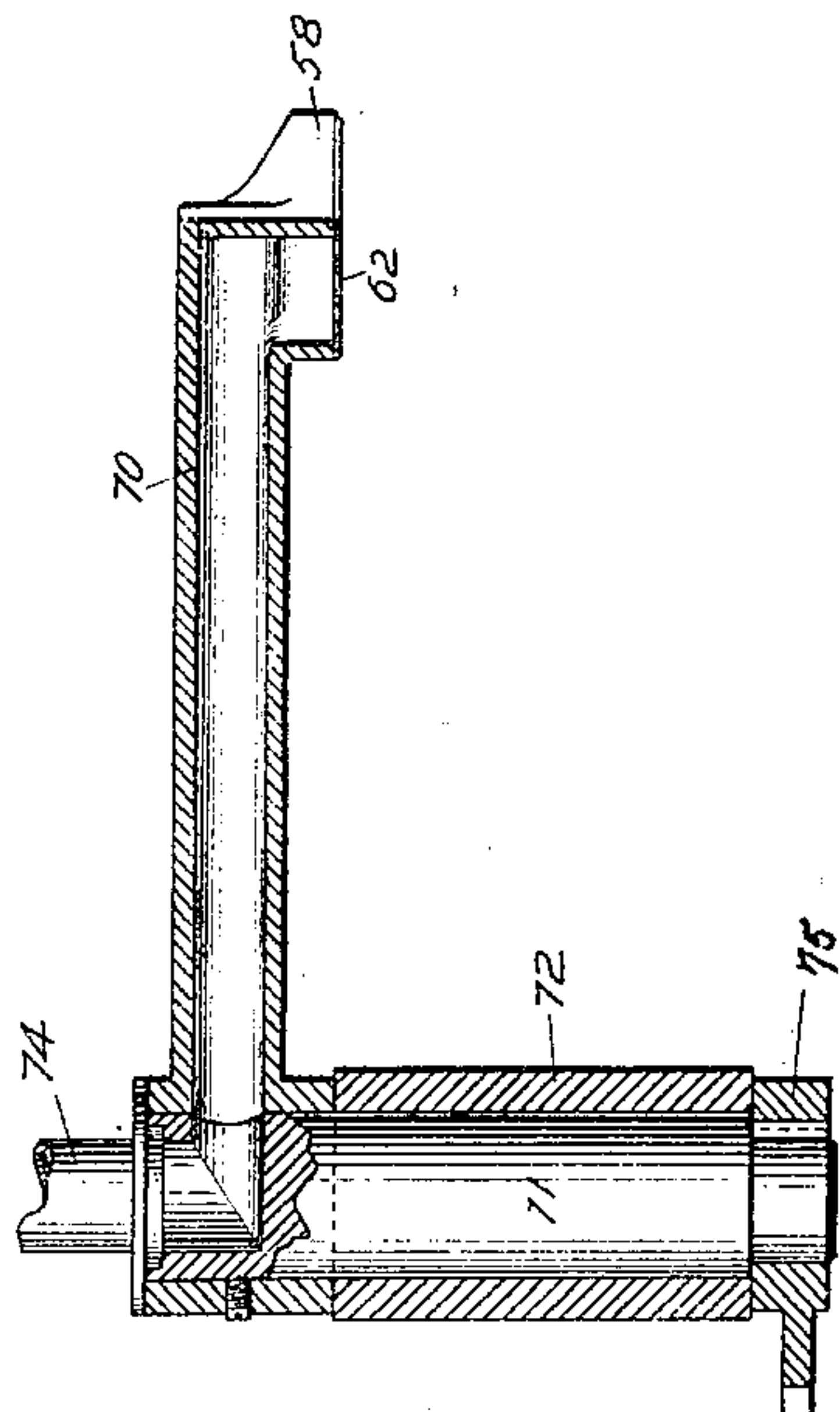


Fig. 5.



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(No Model.)

5 Sheets—Sheet 5.

Fig. 7.

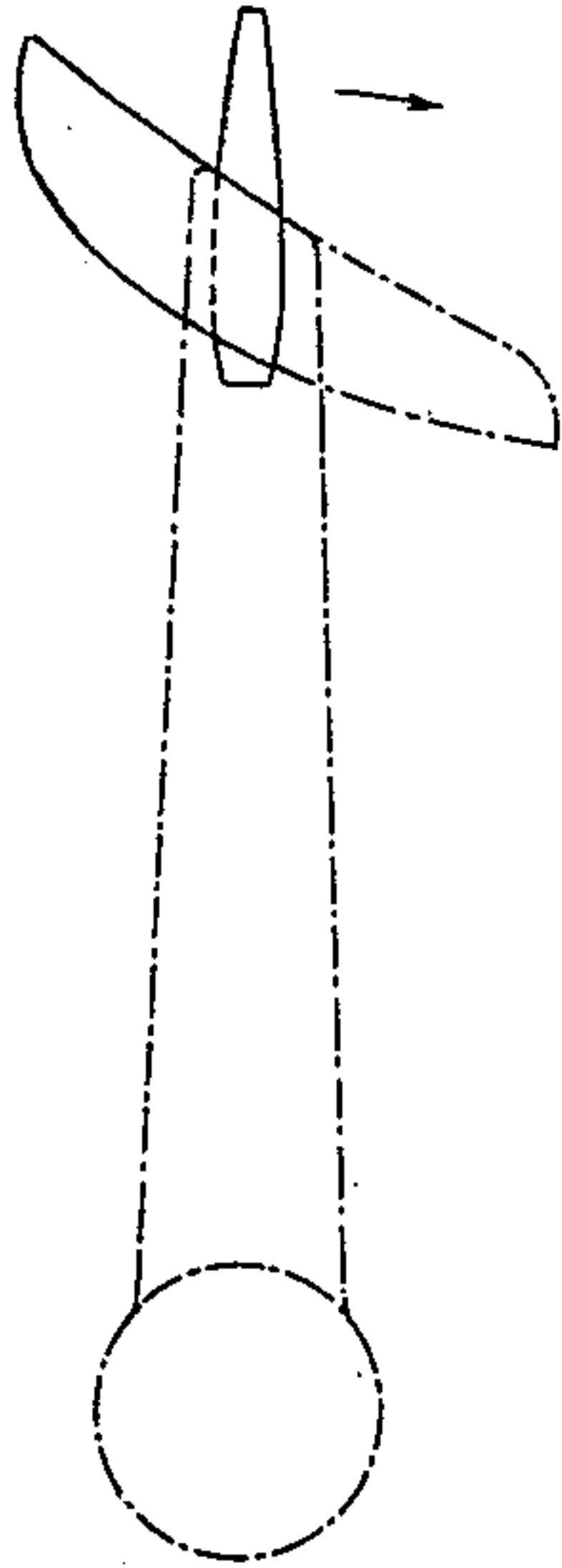


Fig. 6.

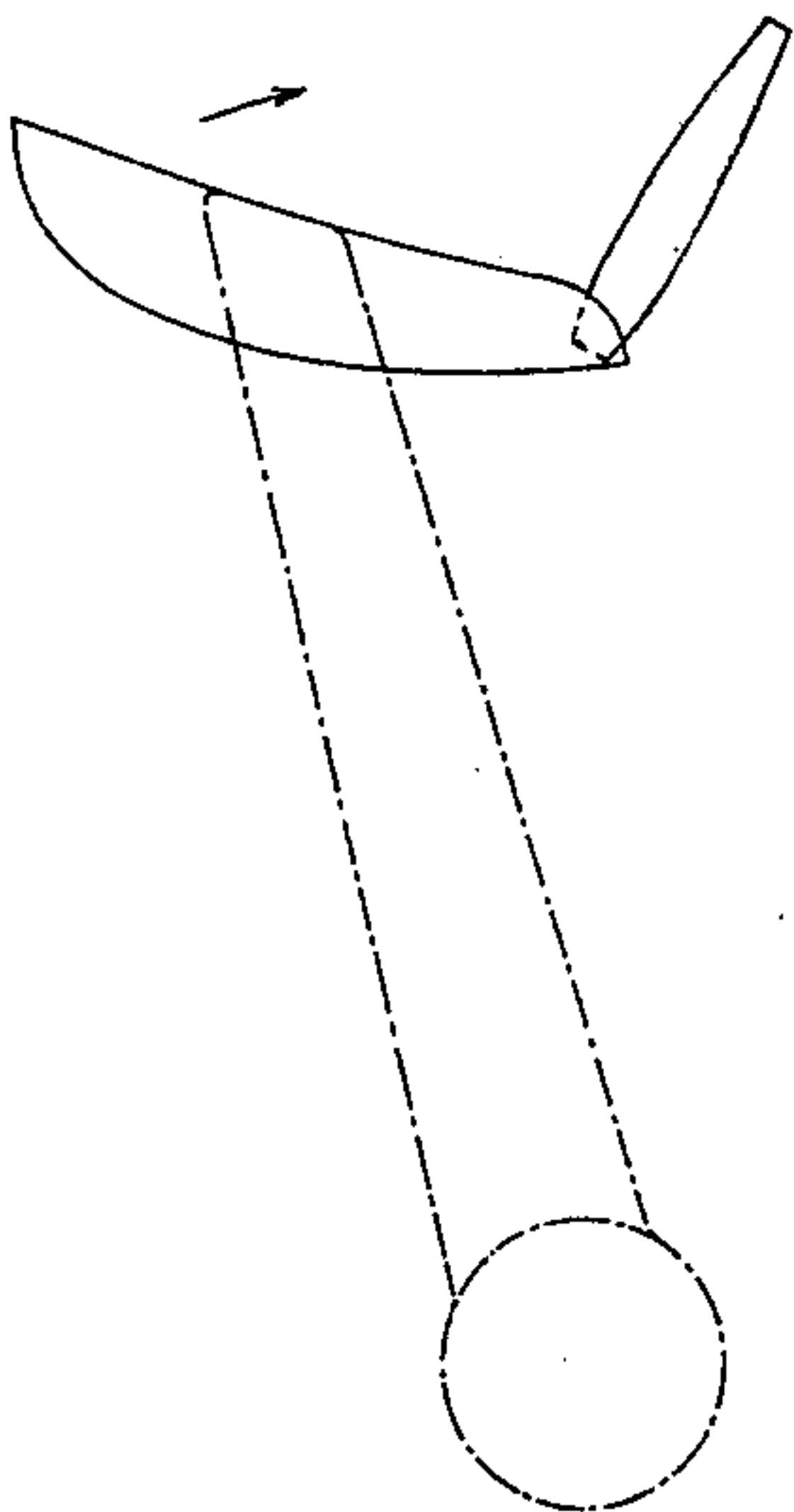
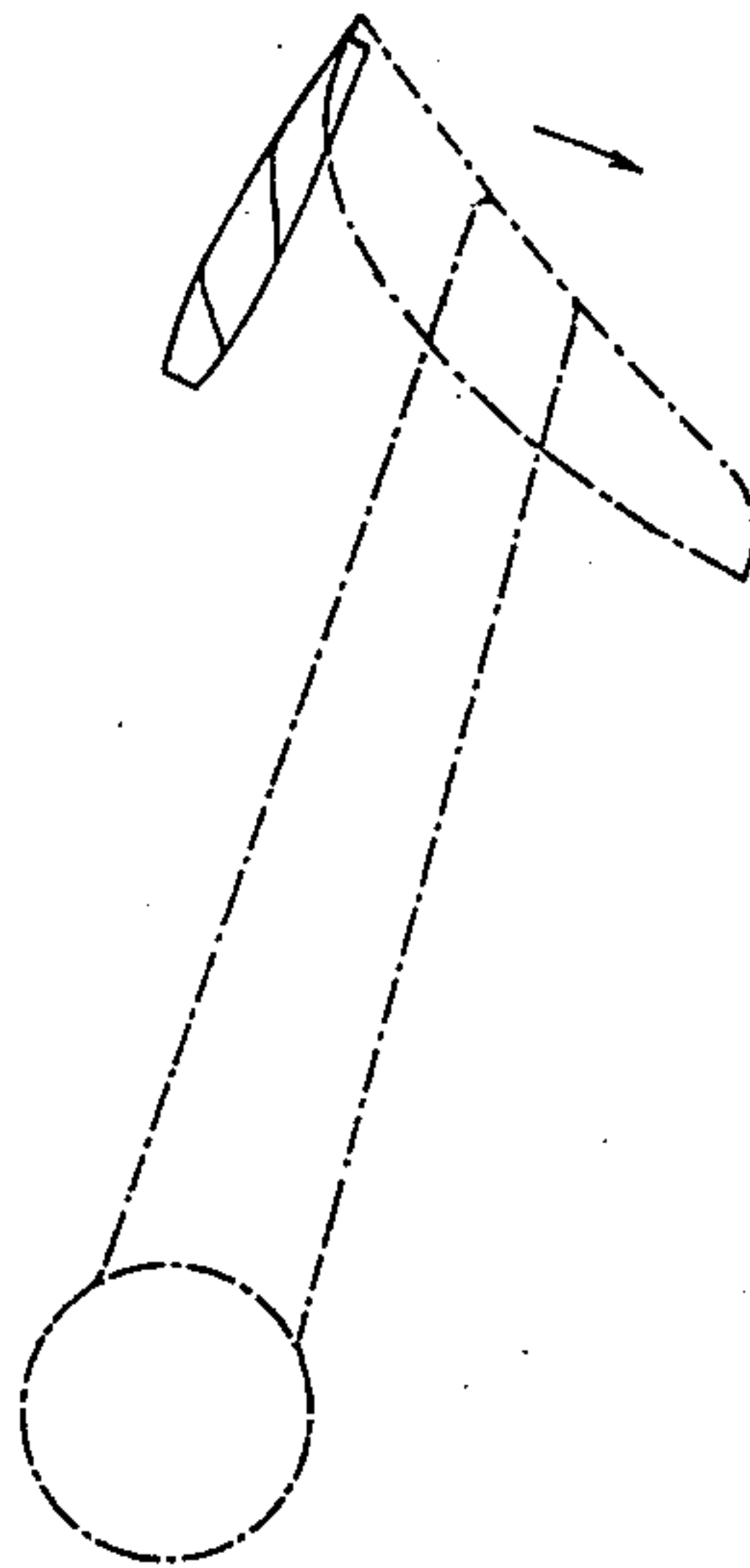


Fig. 8.



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UNITED STATES PATENT OFFICE.

OLUF TYBERG, OF NEW YORK, N. Y., ASSIGNOR TO RUFUS L. PATTERSON
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CIGAR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 654,201, dated July 24, 1900.

Application filed February 5, 1900. Serial No. 4,079. (No model.)

To all whom it may concern:

Be it known that I, OLUF TYBERG, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Cigar-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to certain improvements in cigar-machines.

In cigar-machines in which the wrapper is automatically fed to the wrapping mechanism it is desirable to produce a movement between the wrapping mechanism and the device by which the wrapper is held and delivered to the wrapping mechanism—viz., the wrapper-support—by which movement the wrapper is not only fed to the wrapping mechanism, but is so fed that it is smoothly and evenly wound upon the cigar. This movement may be produced by varying the position of the wrapper-support and the wrapping mechanism during the wrapping operation, and the character of the movement varies according to the shape and style of cigar which is to be wrapped. When a cigar of what is known in the art as a “perfecto” shape—i. e., a cigar the greatest diameter of which is at its center and which tapers toward the ends—is to be wrapped, this movement may be the resultant of a movement by which the wrapper and cigar to be wrapped are caused to approach each other, this being what may be termed the “approaching” movement, a relative traversing movement by which the wrapper is caused to advance along the cigar, and an angular movement by which the angle at which the wrapper is delivered to the cigar is controlled, the amount of the angular movement varying according to the shape of the cigar to be wrapped. By arranging the wrapper-support so that it travels in a proper path with respect to the wrapping mechanism and properly presents the wrapper thereto the necessity of causing either the wrapper-support or the wrapping mechanism to effect a distinct traversing movement may, however, be avoided and the wrapper may be both fed to and traversed along the wrapping mechanism by a

relative approaching movement of the support and the wrapping mechanism.

One of the objects of this invention is to produce an improved cigar-machine in which the wrapper shall be automatically fed from a wrapper-support to a wrapping mechanism and smoothly and evenly wound on the bunch by a relative approaching and angular movement of the wrapping mechanism and the support.

A further object of the invention is to produce a cigar-machine having an improved form of wrapper-support, and also embodying a simple and effective mechanism for giving the wrapper-support its desired movement.

A further object of the invention is to produce an improved cigar-machine in which the wrapping mechanism shall be capable of an angular movement.

With these and other objects in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter described, and more fully pointed out in the claims hereunto appended.

In the accompanying drawings, which form a part of this specification, and in which like characters of reference indicate the same parts, Figure 1 is a plan view of a cigar-machine constructed in accordance with the invention. Fig. 2 is a plan view similar to Fig. 1, but with some of the parts in a different position. Fig. 3 is a front view of the machine shown in Fig. 1. Fig. 4 is an end view looking at the machine from the right of the observer in Fig. 1. Fig. 5 is a sectional elevation of the wrapper-support. Figs. 6, 7, and 8 are diagrams illustrating the relative position of the wrapper-support with respect to the cigar during different parts of the wrapping operation.

In the machine which has been selected to illustrate the invention, 1 indicates a frame supporting a bed-plate 2. Extending from the bed-plate 2 are suitable bracket-arms 3, which serve to support a cam-shaft 4. The cam-shaft 4 may be driven in any suitable manner. It is shown as provided with a worm-gear 5, said gear meshing with a worm 6 on the main shaft 7. The main shaft is

supported near one of its ends in brackets 8, extending from one of the brackets 3, and is provided with a pulley 9 or any other suitable driving means. At its other end the shaft 7 is supported in a bracket or hanger 10, extending from the machine-frame. Between its ends the shaft 7 is provided with a bevel-gear 11, which meshes with another bevel-gear 12 on a longitudinal driving-shaft 13, this shaft lying beneath the bed-plate of the machine and being supported in suitable hangers 14 extending therefrom. The purpose of the shaft 13 will be hereinafter described.

The cutting mechanism, which is designed to cut a wrapper from a leaf of tobacco, may be of any suitable or desired form. In the machine shown a hollow cutting-bed 15, having its operating-face formed by a perforated plate 16 and carrying a knife 17, having the form of the wrapper, is shown as supported on a table 18, said table standing on suitable legs or braces 19, which in turn rest upon the bed-plate. The hollow cutting-bed 15 forms a suction-chamber, and to that end a pipe 20 is shown secured to the under side thereof, said pipe being connected to any suitable suction mechanism, such as a fan or blower. (Not shown.)

The suction may be turned on and off from the cutting mechanism by means which are either automatically or hand operated. In the machine shown a suitably-supported cutting-off valve 22 is provided for opening and closing the pipe 20, said valve being operated by means of a pivoted lever 23. The lever 23 has connected thereto a spring-rod 24, said rod having a fork 25, which embraces the cam-shaft 4 before referred to. The rod 24 carries a friction-roller 26, which runs upon a cam 27, mounted on the shaft 4, the roller being held against the cam by the operation of the spring 28, which surrounds the spring-rod 24. It is obvious that as the shaft 4 rotates the cam 27 and the spring 28 are operated to open and close the valve 22, and consequently shut off the suction or turn it onto the suction-chamber 15.

Any suitable form of cooperating cutting device may be used in connection with the knife 17. In the machine shown this cooperating device consists of a roller 29, mounted in an arm 30, said arm being connected to and carried by a reciprocating carriage 31. The carriage 31 reciprocates on suitable guides 32 and by its movement causes the roller 29 to move over the knife.

Any suitable mechanism may be provided for giving to the carriage the intermittent reciprocation necessary to enable it to properly perform its functions. In the machine shown the carriage is connected by a link 33 to a crank-arm 34, which is cast in one piece with a sleeve 35, said sleeve being supported by a bearing 36, extending from the machine-frame. Extending from a similar bearing 37 is a short shaft 38, said shaft extending into

the sleeve 35. The shaft 38 carries a sprocket-wheel 39, which wheel is rotated by a sprocket-chain 40, which passes around a sprocket-wheel 41 on the main shaft 7. The shaft 38 carries a notched collar 42, which collar is in the path of a pawl 43, which is pivoted on an arm 44, secured to the sleeve 35. A spring 45 engages a projection on the side of the pawl 43, and when free to do so forces it into position to engage the notch in the collar 42. The tail of the pawl lies in the path of an arm 46, mounted on a short shaft 47, which is journaled in a bearing 48 in the machine-frame. The shaft 48 has secured to it a spring 49, which at its other end is secured to a pin 50 on the frame, the tendency of the spring being to hold the shaft in such position that the arm 46 will be in the path of the tail of the pawl and so hold it disengaged from the collar on the shaft. The shaft 47 has an arm 51 extending therefrom, the said arm being connected by a link 52 to one arm 53 of a bell-crank lever pivoted in a bracket 54, extending from the frame. The other arm 55 of the bell-crank lever carries a cam-roller 56, which engages with a cam 57, mounted on the shaft 4. It is obvious that when the configuration of the cam permits it the spring 49 will operate the shaft 47 and throw the arm 46 forward into the path of the tail of the pawl, thus holding the pawl disengaged from the notch in the collar 42 on the shaft 38 and permitting said shaft to rotate without rotating the sleeve 35 and the arm 34. When, however, through the operation of the cam and the connections named the arm 46 is rocked out of the path of the tail of the pawl, the pawl will engage the notched collar on the shaft 38, thus locking the shaft and the sleeve 35 together, causing the sleeve to rotate with the shaft and the carriage and the cutting-roll to be reciprocated.

Any suitable form of clutch mechanism may be substituted for the one which has just been described.

After the wrapper has been cut by the mechanism before described it must be transferred from the cutting-bed to the wrapping mechanism. This transferring operation will preferably be accomplished by means of a wrapper-support, which may be constructed, mounted, and operated in various ways. In the machine shown, however, the suction-support consists of a casting 58, which is divided into two chambers 59 60 by means of a partition 61, located near one end thereof. (See Fig. 3.) The under side of the chamber is closed by means of a perforated plate 62. The part 58 is secured to a hollow arm 70, preferably by being cast in one piece therewith. The part 58 does not stand at a right angle to the arm 70, but it makes an acute angle with one side of the arm and an obtuse angle with the other side. The purpose of this arrangement of the part 58 in this machine will be hereinafter stated. The chamber 59 is connected to the opening in the hol-

low arm 70. The chamber 60 has connected thereto a movable funnel 63, said funnel being held in position by means of a spring 64, connected to it and to the part 58. This movable funnel is arranged to register in certain positions of the hollow arm and the part 58 with a blast-pipe 65, mounted in a bracket 66 on the frame of the machine. The purpose of this blast-pipe and funnel 63 is to introduce a blast of air into the chamber 60, and thus blow down the end of the wrapper into the jaws of the wrapping mechanism, to be hereinafter described, when the part or support 58 is in the proper position to deliver the wrapper to the wrapping mechanism.

The hollow arm 70 is a movable arm, and its movement may be effected in various ways. In the machine shown, however, the arm is attached in any suitable manner, as by a set-screw, to a vertical shaft 71, which is mounted in a suitable bearing 72, formed in a bracket 73, attached to the bed-plate of the machine. The upper end of the shaft 71 has an opening therein which communicates with the opening in the hollow arm 70, and in this opening in the shaft is located a pipe 74, which communicates with any suitable form of suction mechanism, such as a fan or blower. (Not shown.) The lower end of the shaft 71 has attached thereto in any suitable manner, as by a set-screw, a toothed segment 75, which meshes with a toothed segment 76, carried on one arm 77 of a bell-crank, which is pivoted in the machine-frame at 78. The other arm 79 of the bell-crank is provided with a roller 80, which engages a cam-groove in a cam 81, carried on the shaft 4. It will be obvious that through the medium of the cam and connections which have just been described the shaft 71 will be rotated about its vertical axis and the arm 70 will be given a rotary reciprocating movement from the cutting-bed to the wrapping mechanism to be hereinafter described.

Any suitable form of wrapping mechanism may be used in the machine. Preferably, however, the wrapping mechanism will be of the type shown and described in the patent to Reuse, No. 552,447, granted December 31, 1895, to which reference is made for a full disclosure of the construction. For the purposes of this application it is sufficient to say that the wrapping mechanism consists of two pairs of opening and closing jaws 82, said jaws being provided with projections 83, in which work operating-rods 84. These operating-rods are driven from short shafts located in the end frame-pieces 85 of the wrapping mechanism, these end frame-pieces being connected in the machine shown to a base-plate 86. The short shafts before referred to are provided with gears 87 at each end of the machine, these gears meshing with larger gears 88, one of which is located at each end of the machine, these gears being mounted on a shaft 89, journaled in the end frame-pieces 85.

Since in this machine the wrapping mechanism is to be given an angular movement during the wrapping operation with respect to the wrapper support or carrier, the wrapping mechanism as a whole must be so mounted as to permit this angular movement, and at the same time the shaft 89 must be so connected to its driving means as to permit the movement to take place without disconnecting the driving means. The wrapping mechanism may be mounted in various ways, so as to permit the angular movement referred to to be given to it. Preferably, however, it will be pivotally mounted, and to this end the base-plate 86 is provided with a downwardly-extending boss 90, which rests on a boss 91, extending up from the machine-bed. The bosses 90 and 91 have a perforation through them, and in this perforation is located an intermediate shaft 92, said shaft having at its lower end a bevel-gear 93, which meshes with a similar gear 94, mounted on the shaft 13, before referred to. Thus mounted, the wrapping mechanism is free to turn about the shaft 92 as a center. The upper end of the shaft 92 is provided with a bevel-gear 95, which meshes with a bevel-gear 96, carried on the shaft 89 of the wrapping mechanism. As the intermediate shaft 92 is driven from the shaft 13, therefore it is obvious that it will transmit power through the bevel-gearing referred to from the shaft 7 and will so transmit power, no matter what the angular position of the wrapping mechanism may be. While the construction by which power is transmitted to the wrapping mechanism is a convenient and effective one, other constructions may be used for this purpose.

Any suitable means may be used for giving the wrapping mechanism the angular movement about its pivot. In the machine shown, however, the bed-plate 86 is provided with a depending stud 97, to which is connected a link 98. This link 98 is connected to one arm 99 of a bell-crank lever which is pivoted at 100 on the bed, its other arm 101 engaging a suitable cam-groove in a cam 102, mounted on the main shaft before referred to.

In the machine shown the wrapper-support is located over the wrapping mechanism and therefore moves in a plane above it. While this is a convenient and effective arrangement, it is not an absolutely necessary one, as the parts might be differently disposed. Preferably, however, the support will be arranged to move in a plane which does not intersect the wrapping mechanism, as the parts are enabled to have a cross movement during the wrapping operation, and the support is thus positioned so that it can deliver the wrapper very effectively and at the same time control it as the wrapping operation proceeds.

The construction being as before described, the operation of the machine is as follows: The operator places a leaf of tobacco on the plate 16 of the cutting-bed. At the time when this is done the cam 27, acting on the roller

26, the rod 24, and the lever 23, has drawn back the valve 22, so that the suction is acting on the chamber 15. As soon as this is accomplished the cutting-roller 29 is caused to move over the bed by its operating mechanism, and a wrapper is cut from the leaf of tobacco. As soon as the roller 29 has retreated the arm 70 is swung by its operating connections into such position that the support 58 is squarely over the cutting-bed. It may be here remarked that the suction mechanism will preferably be arranged so as to act continuously on the chamber 59 of the support 53. As soon as the support is fairly in position over the cutting-bed the cam 27 permits the spring 28 to close the valve 22, shutting off the suction from the chamber 15. The leaf of tobacco is then immediately transferred from the cutting-bed to the plate 62 of the support 58. The support now swings back over the wrapping mechanism and into the position indicated in the diagram Fig. 6 and in the plan view, Fig. 1. As the support comes into this position the funnel 63 registers with the blast-pipe 65, and the forward part of the wrapper is blown down into the jaws of the wrapping mechanism, in which a bunch has previously been placed. The wrapping mechanism now begins the wrapping operation, being started by a clutch which has not been herein shown and described, as it forms no part of this invention, and at the same time the arm 70 and the support 58 begin what is termed the "approaching" movement. By the term "approaching" in this connection is not meant that all parts of the support at all times approach the wrapping mechanism, for since the support moves across the wrapping mechanism that part of it which has delivered its wrapper will necessarily move away from said mechanism. Inasmuch, however, as that part of the support which is carrying the wrapper and which is to deliver it to the wrapping mechanism always moves toward the wrapping mechanism the term "approaching" has been used to define this movement. As the wrapping operation proceeds and the wrapper is delivered to the wrapping mechanism the wrapping mechanism begins to execute the angular movement under the influence of the bell-crank 99 100 and the cam 102. It will be observed that as the movable arm 70 swings about its center the two ends of the support travel in concentric arcs and the wrapping mechanism is so arranged and moved that at the time the wrapping operation begins the forward end of the wrapper-support, or the end which carries that part of the wrapper which is wrapped on the tuck end of the cigar-bunch, comes into alinement with that end of the wrapping mechanism which operates on the tuck end of the bunch, and at the end of the wrapping operation the other end of the support comes into alinement with the other end of the wrapping mechanism. As the wrapping operation proceeds, therefore, the support and wrapping mechanism pass from

the position indicated in the diagram Fig. 7 into the position shown in Fig. 8, at which time the wrapping operation is being completed. Thus by giving the arm 70 a swinging movement and by giving the wrapping mechanism an angular movement the wrapper is wound upon the bunch from one end to the other and the angle at which it is presented to the bunch is changed as the wrapping operation proceeds, the amount of variation being controlled by the amount of angular movement given to the wrapping mechanism, which is in turn controlled by the shape of the cigar to be wrapped. During the wrapping operation the operator has placed a fresh leaf of tobacco on the cutting-bed and another wrapper has been cut therefrom. The arm 70, through its connections, is moved over the wrapper, and the cycle of operations which has just been described is repeated.

It is to be understood that the constructions by means of which the various operations which have been described are performed may be varied within wide limits. Thus, for instance, though in the form of the invention shown the wrapper-support is given the approaching movement with respect to the wrapping mechanism, it is evident that mechanisms by which the relative approaching movement between these two parts is effected by giving the wrapping mechanism the approaching and the angular movements are within the invention. The invention is not therefore to be limited to the specific constructions shown and described.

What I claim is—

1. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

2. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying above the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

3. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between the wrapper-support and the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

4. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying above the wrapping mechanism, means for producing a relative approaching movement between the wrapper-support and the wrapping mechanism, and means for giving

the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

5 5. In a cigar-machine, the combination with
a wrapping mechanism, of a wrapper-support
lying in a plane which does not intersect the
wrapping mechanism, means for giving the
wrapper-support a movement with respect
10 to the wrapping mechanism, and means for
giving the wrapping mechanism an angular
movement with respect to the wrapper-sup-
port during the wrapping operation, substan-
tially as described.

15 6. In a cigar-machine, the combination with
a wrapping mechanism, of a wrapper-support
lying in a plane which does not intersect the
wrapping mechanism, means for giving the
wrapper-support an approaching movement
20 with respect to the wrapping mechanism, and
means for giving the wrapping mechanism an
angular movement with respect to the wrap-
per-support during the wrapping operation,
substantially as described.

25 7. In a cigar-machine, the combination with
a wrapping mechanism, of a wrapper-support
lying above the wrapping mechanism, means
for giving the wrapper-support a movement
with respect to the wrapping mechanism, and
30 means for giving the wrapping mechanism an
angular movement with respect to the wrap-
per-support during the wrapping operation,
substantially as described.

8. In a cigar-machine, the combination with
35 a wrapping mechanism, of a wrapper-support
lying above the wrapping mechanism, means
for giving the wrapper-support an approach-
ing movement with respect to the wrapping
mechanism, and means for giving the wrap-
40 ping mechanism an angular movement with
respect to the wrapper-support during the
wrapping operation, substantially as de-
scribed.

9. In a cigar-machine, the combination with
45 a wrapping mechanism, of a suction-support
for the wrapper, and means for giving the
wrapping mechanism an angular movement
with respect to the support during the wrap-
ping operation, substantially as described.

10. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying in a plane which does not intersect the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

11. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying above the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

12. In a cigar-machine, the combination with a wrapping mechanism, of a suction-sup-

port for the wrapper lying in a plane which does not intersect the wrapping mechanism, means for producing a relative approaching movement between the support and the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

13. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying above the wrapping mechanism, means for producing a relative approaching movement between the support and the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the support during the wrapping operation, substantially as described.

14. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

15. In a cigar-machine, the combination 95
with a wrapping mechanism, of a suction-sup-
port for the wrapper lying in a plane which
does not intersect the wrapping mechanism,
means for giving the wrapper-support an ap-
proaching movement with respect to the 100
wrapping mechanism, and means for giving
the wrapping mechanism an angular move-
ment with respect to the wrapper-support dur-
ing the wrapping operation, substantially as
described. 105

16. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper lying above the wrapping mechanism, means for giving the wrapper-support an approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support during the wrapping operation, substantially as described.

17. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for giving one of said parts an angular movement, and means for giving the other of said parts an approaching movement during the wrapping operation, substantially as described.

18. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper, means for giving one of said parts an angular movement, and means for giving the other of said parts an approaching movement during the wrapping operation, substantially as described.

19. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, and means for giving

ing the wrapper-support a movement with respect to the wrapping mechanism, the movement being such that one end of the wrapper-support is in alinement with one end of the wrapping mechanism at the beginning of the wrapping operation, and the other end of the wrapper-support is in alinement with the other end of the wrapping mechanism at the completion of the wrapping operation, substantially as described.

20. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper located above the wrapping mechanism, and means for giving the wrapper-support a movement with respect to the wrapping mechanism, the movement being such that one end of the wrapper-support is in alinement with one end of the wrapping mechanism at the beginning of the wrapping operation, and the other end of the wrapper-support is in alinement with the other end of the wrapping mechanism at the completion of the wrapping operation, substantially as described.

21. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for giving the wrapper-support a movement with respect to the wrapping mechanism, the movement being such that one end of the wrapper-support is in alinement with one end of the wrapping mechanism at the beginning of the wrapping operation, and the other end of the wrapper-support is in alinement with the other end of the wrapping mechanism at the completion of the wrapping operation, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support, substantially as described.

22. In a cigar-machine, the combination with a wrapping mechanism, of a suction-support for the wrapper located above the wrapping mechanism, means for giving the wrapper-support a movement with respect to the wrapping mechanism, the movement being such that one end of the wrapper-support is in alinement with one end of the wrapping mechanism at the beginning of the wrapping operation, and the other end of the wrapper-support is in alinement with the other end of the wrapping mechanism at the completion of the wrapping operation, and means for giving the wrapping mechanism an angular movement with respect to the wrapper-support, substantially as described.

23. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm swinging in a plane which does not intersect the wrapping mechanism and carrying a wrapper-support, means for turning the arm about its center, and means for turning the wrapping mechanism about its center, substantially as described.

24. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm swinging in a plane

which does not intersect the wrapping mechanism and having a wrapper-support rigidly fixed thereto, means for turning the arm about its center, and means for turning the wrapping mechanism about its center, substantially as described.

25. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm over the wrapping mechanism and having a wrapper-support rigidly fixed thereto, means for turning the arm about its center, and means for turning the wrapping mechanism about its center, substantially as described.

26. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm carrying a suction-support for the wrapper, means for swinging the arm about a center, and means for turning the wrapping mechanism about its center, substantially as described.

27. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm carrying a suction-support for the wrapper rigidly fixed thereto, means for swinging the arm about a center, and means for turning the wrapping mechanism about its center, substantially as described.

28. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm swinging about a center, a wrapper-support rigidly fixed thereto and standing at an angle to the arm which is other than a right angle, means for swinging the arm, and means for turning the wrapping mechanism about its center, substantially as described.

29. In a cigar-machine, the combination with a wrapping mechanism mounted to turn about a center, of an arm swinging about a center, a suction-support for the wrapper rigidly fixed thereto and standing at an angle to the arm which is other than a right angle, means for swinging the arm, and means for turning the wrapping mechanism about its center, substantially as described.

30. The combination with a wrapping mechanism mounted to swing about a center, of a shaft passing through said center, driving connections between the shaft and the wrapping mechanism, means for driving the shaft, and means for moving the wrapping mechanism, substantially as described.

31. The combination with a wrapping mechanism mounted to turn about a center, of a driving-shaft, an intermediate shaft passing through the center about which the wrapping mechanism turns, driving connections between the two shafts, driving connections between the wrapping mechanism and the intermediate shaft, and means for turning the wrapping mechanism about its center, substantially as described.

32. In a cigar-machine, the combination with a pivotally-mounted wrapping mechanism, of a pivotally-mounted arm carrying a

suction-support for the wrapper, a suction cutting-bed, suction-controlling devices for the bed, means coöperating with the bed to cut a wrapper, and operating mechanism for the suction-controlling devices for the cutting-bed, for swinging the arm about its center, and for swinging the wrapping mechanism about its center, substantially as described.

33. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, and means for producing a relative approaching movement between the support and the wrapping mechanism, the support being so arranged with respect to the wrapping mechanism that at the beginning of the wrapping operation that end of the support which carries the tuck end of the wrapper will be in substantially-vertical alinement with that end of the wrapping mechanism which operates upon the tuck end of the bunch and at the end of the wrapping operation the other end of the support will be in substantially-vertical alinement with the other end of the wrapping mechanism, substantially as described.

34. In a cigar-machine, the combination with a wrapping mechanism, of a suction wrapper-support, and means for producing a relative approaching movement between the support and the wrapping mechanism, the support being so arranged with respect to the wrapping mechanism that at the beginning of the wrapping operation that end of the support which carries the tuck end of the wrapper will be in substantially-vertical alinement with that end of the wrapping mechanism which operates upon the tuck end of the bunch and at the end of the wrapping operation the other end of the support will be in substantially-vertical alinement with the other end of the wrapping mechanism, substantially as described.

35. In a cigar-machine, the combination with a wrapping mechanism, of a wrapper-support, means for producing a relative approaching movement between the support and the wrapping mechanism, the support being so arranged with respect to the wrapping mechanism that at the beginning of the wrapping operation that end of the support which carries the tuck end of the wrapper will be in substantially-vertical alinement with that end of the wrapping mechanism which operates upon the tuck end of the bunch and at the end of the wrapping operation the other end of the support will be in substantially-vertical alinement with the other end of the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

36. In a cigar-machine, the combination with a wrapping mechanism, of a suction wrapper-support, means for producing a relative approaching movement between the support and the wrapping mechanism, the sup-

port being so arranged with respect to the wrapping mechanism that at the beginning of the wrapping operation that end of the support which carries the tuck end of the wrapper will be in substantially-vertical alinement with that end of the wrapping mechanism which operates upon the tuck end of the bunch and at the end of the wrapping operation the other end of the support will be in substantially-vertical alinement with the other end of the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

37. In a cigar-machine, the combination with a swinging arm carrying a wrapper-support rigidly fixed thereto, so that its ends travel in parallel arcs, of a wrapping mechanism, and means for giving the wrapping mechanism an angular movement, the movement of the two being such that one end of the wrapper-support and one end of the wrapping mechanism are in substantially-vertical alinement at the beginning of the wrapping operation and the other end of the support and the other end of the wrapping mechanism are in substantially-vertical alinement at the end of said operation, substantially as described.

38. In a cigar-machine, the combination with a wrapping mechanism, of an arm, means for swinging the arm in a plane which does not intersect the wrapping mechanism, a wrapper-support fixed to the arm in such a position that its ends travel in parallel arcs, and means for giving the wrapping mechanism an angular movement, the movement of the two being such that one end of the wrapper-support and one end of the wrapping mechanism are in substantially-vertical alinement at the beginning of the wrapping operation and the other end of the support and the other end of the wrapping mechanism are in substantially-vertical alinement at the end of said operation, substantially as described.

39. In a cigar-machine, the combination with a vertical shaft, of a wrapping mechanism mounted to swing about the shaft as a center, gear connections between said shaft and the driving-shaft of the cigar-machine, and means for driving the vertical shaft, substantially as described.

40. In a cigar-machine, the combination with a vertical shaft, of a wrapping mechanism mounted to swing about the shaft as a center, a cam and suitable connections for swinging the wrapping mechanism, gear connections between said vertical shaft and the driving-shaft of the cigar-machine, and means for driving the vertical shaft, substantially as described.

41. In a cigar-machine, the combination with a pivotally-mounted wrapping mechanism, of an arm, means for swinging the arm with respect to the wrapping mechanism, a suction wrapper-support rigidly fixed to the

arm in such position that its ends travel in parallel arcs, a shaft, a cam on said shaft, connections between the cam and the arm, whereby the cam is caused to swing the arm, a
5 second cam on the shaft, and connections between said second cam and the wrapping mechanism, whereby said cam is caused to turn said wrapping mechanism on its pivot, and means for driving the wrapping mechan-

ism in any of its positions, substantially as is described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

OLUF TYBERG.

Witnesses:

A. L. KENT,

A. A. V. BOURKE.