

No. 654,200.

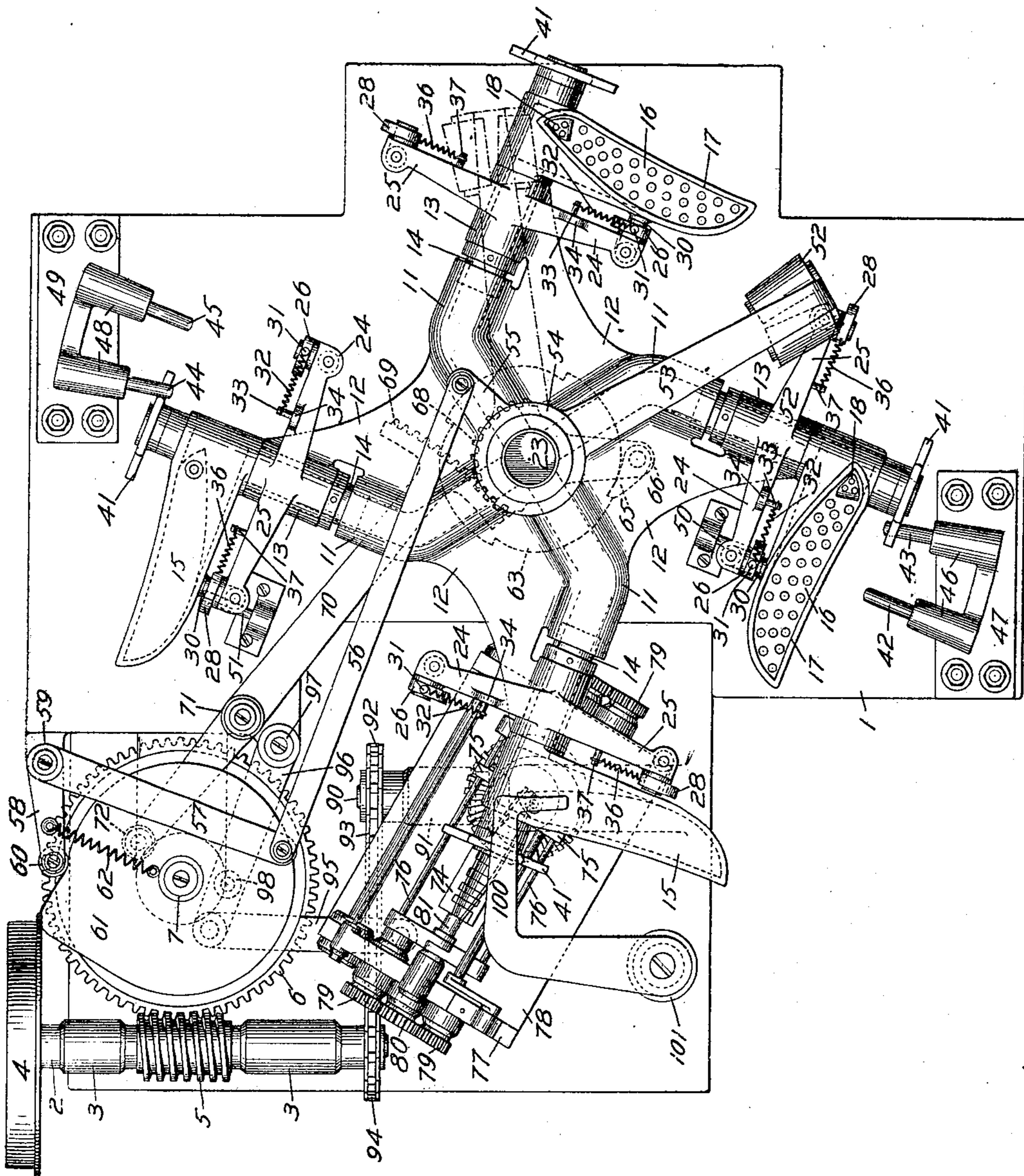
Patented July 24, 1900.

O. TYBERG.
CIGAR MACHINE.

(Application filed Feb. 5, 1900.)

(No Model.)

4 Sheets—Sheet 1.



WITNESSES:

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Fig. 1.

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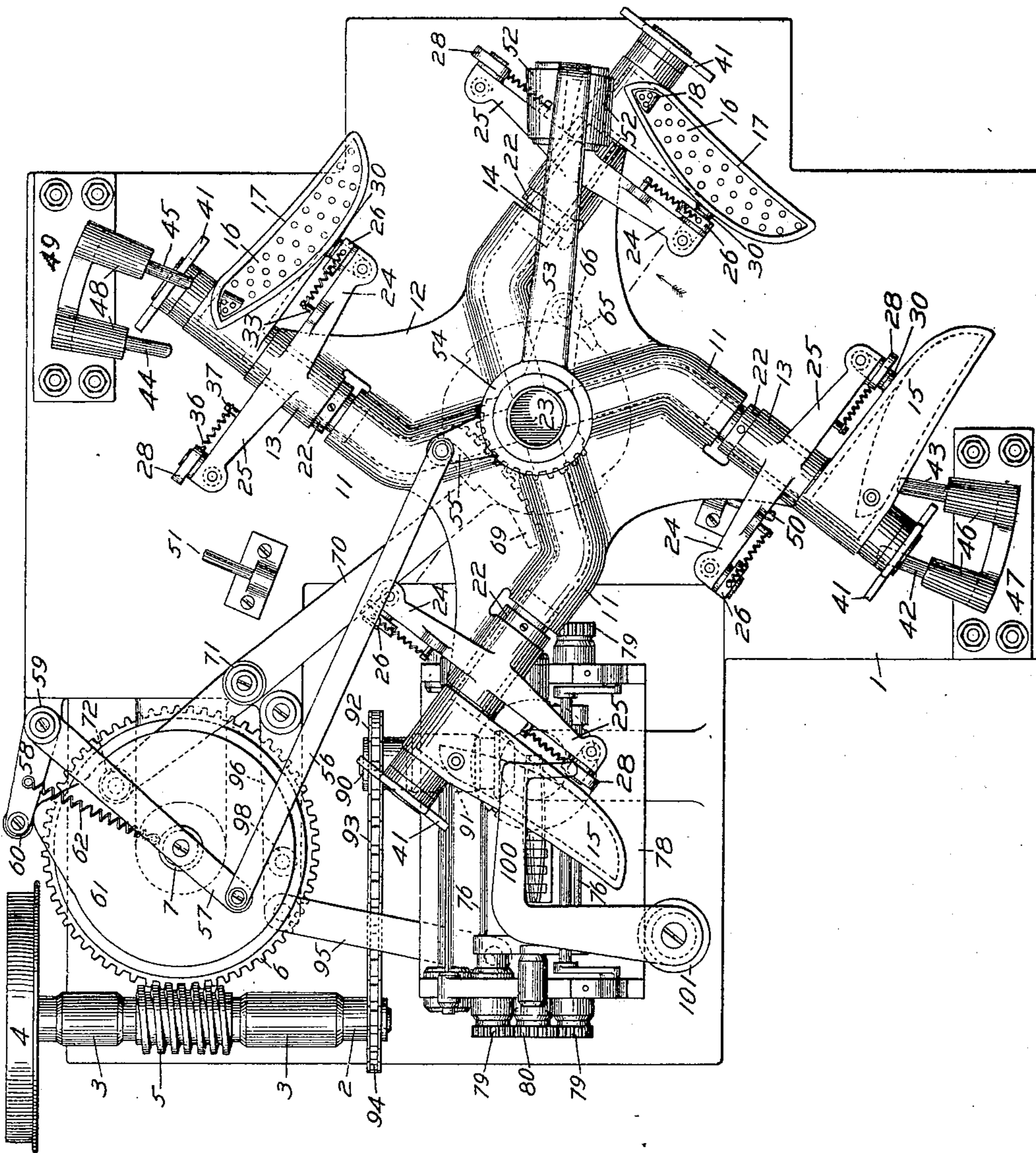
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4 Sheets—Sheet 2.



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Fig. 2

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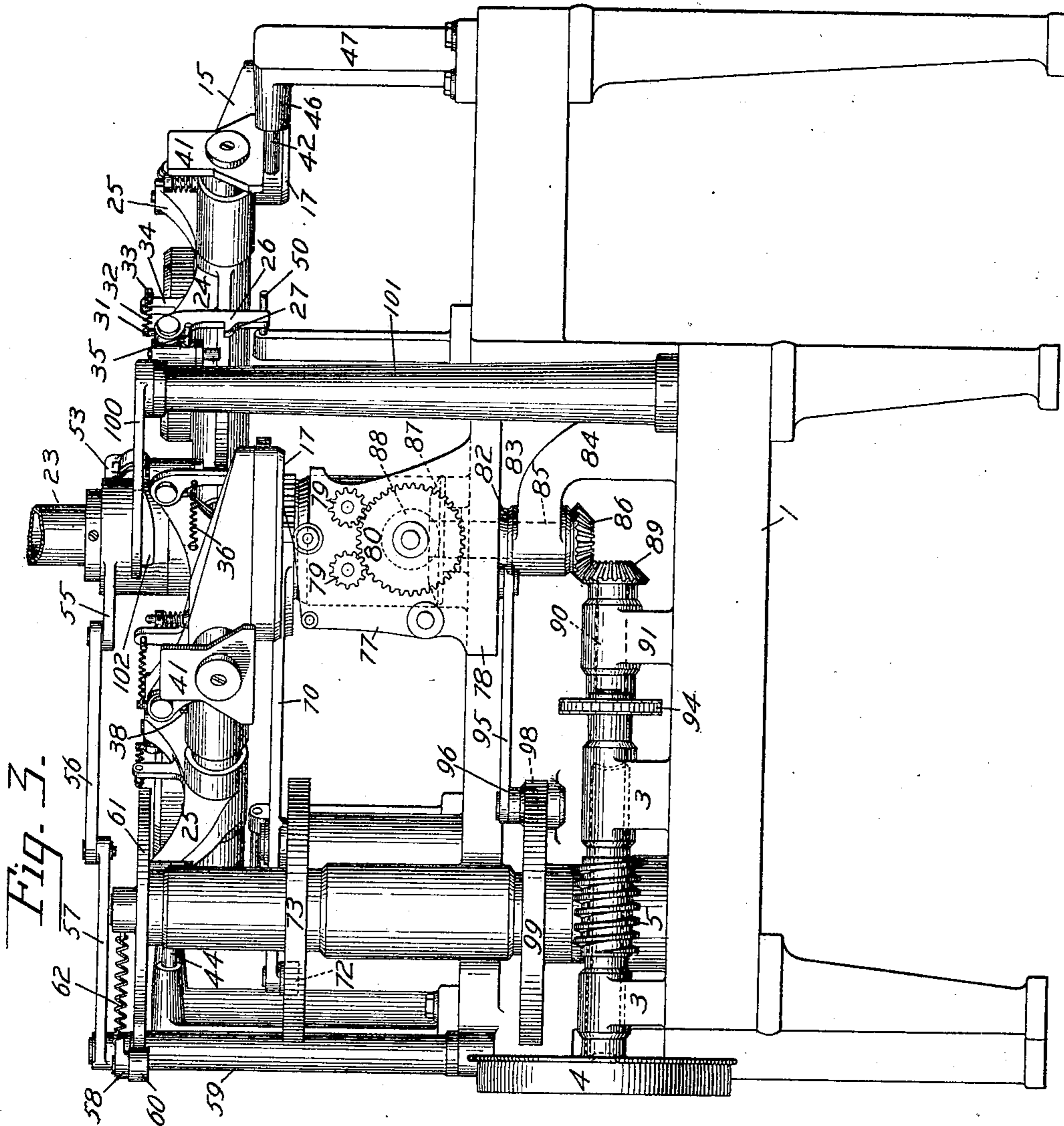
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(No Model.)

4 Sheets—Sheet 3.



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(Application filed Feb. 5, 1900.)

(No Model.)

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Fig. 9.

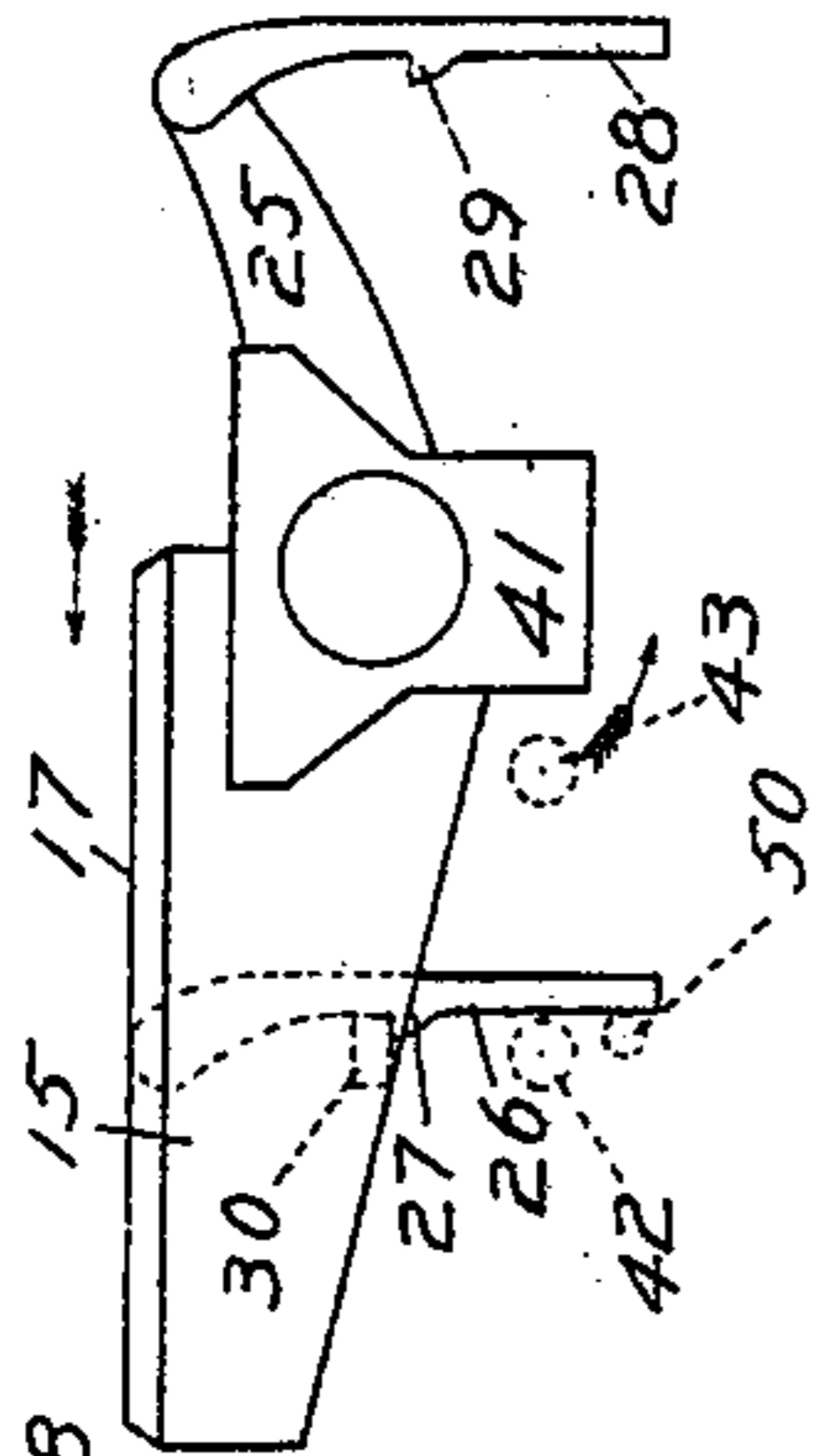


Fig. 10.

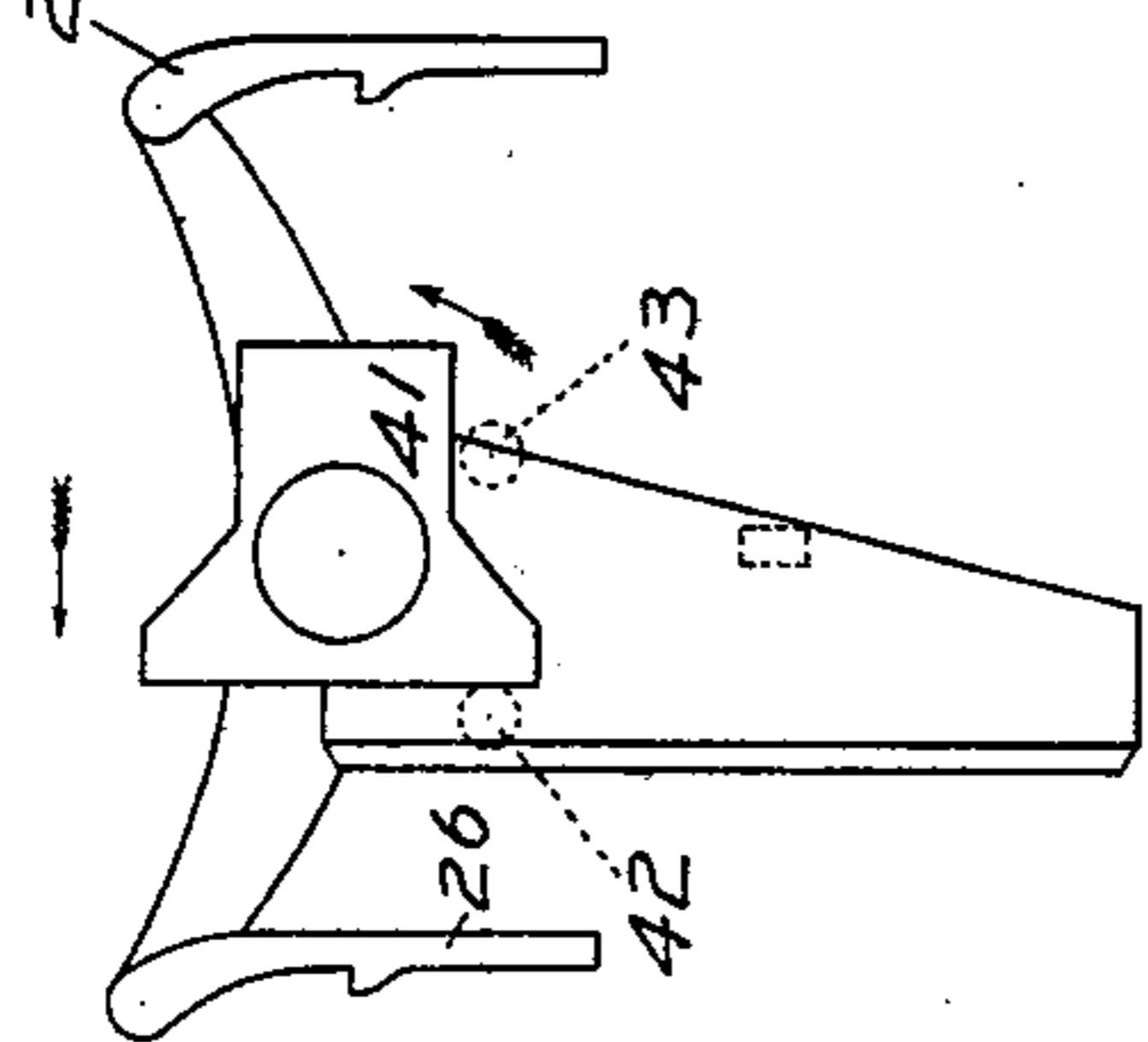


Fig. 11.

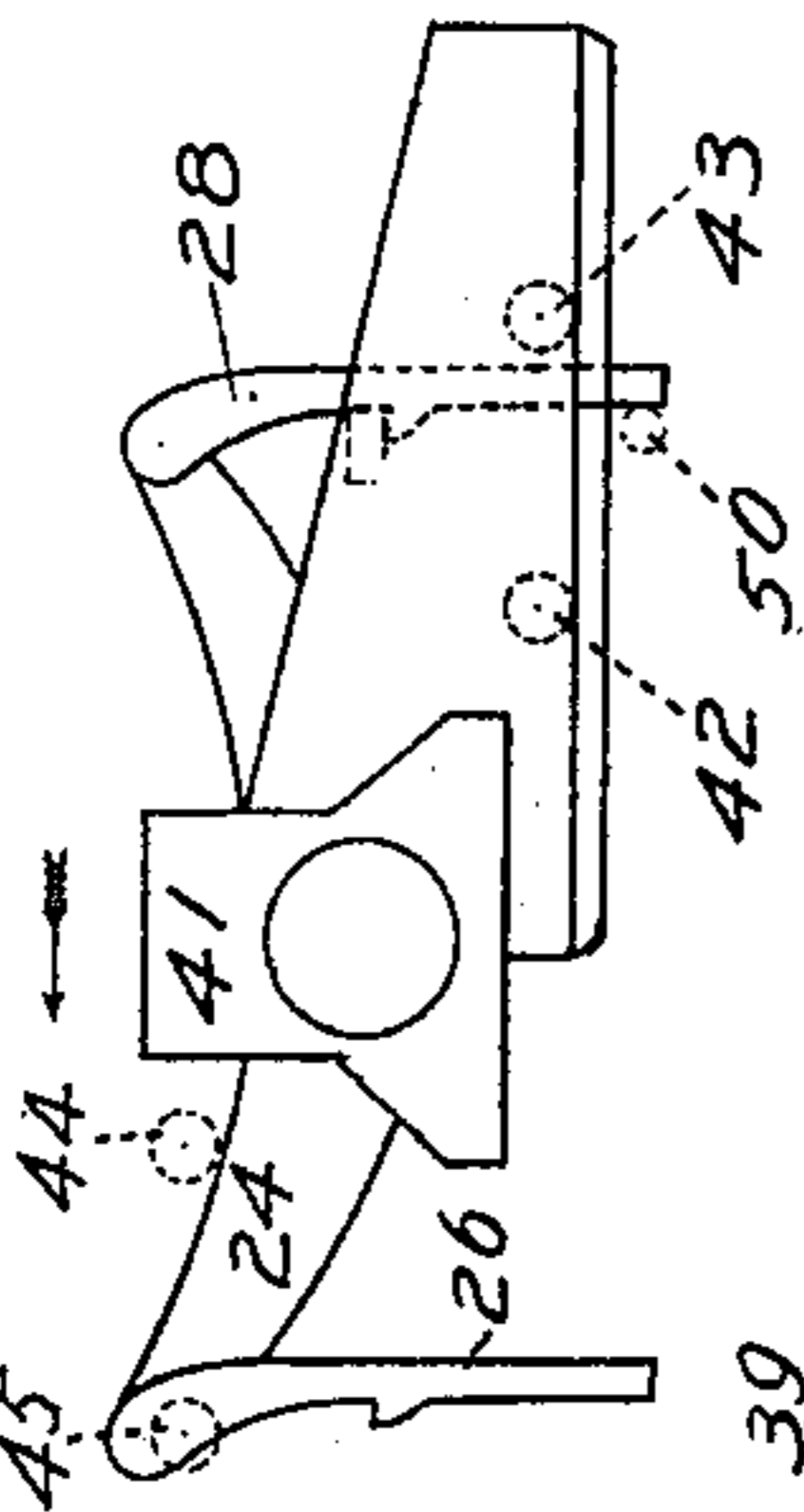
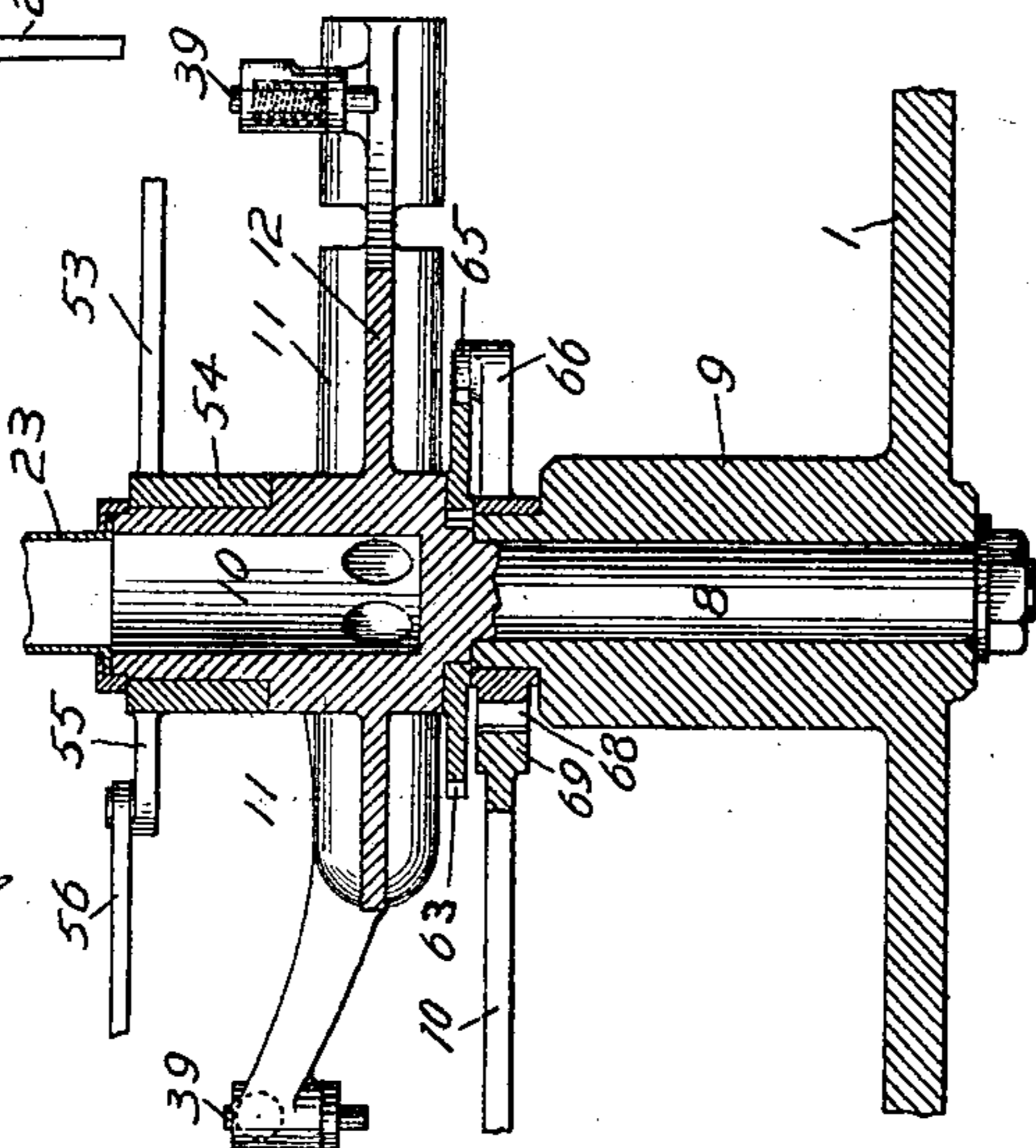


Fig. 4.



WITNESSES:

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Fig. 12.

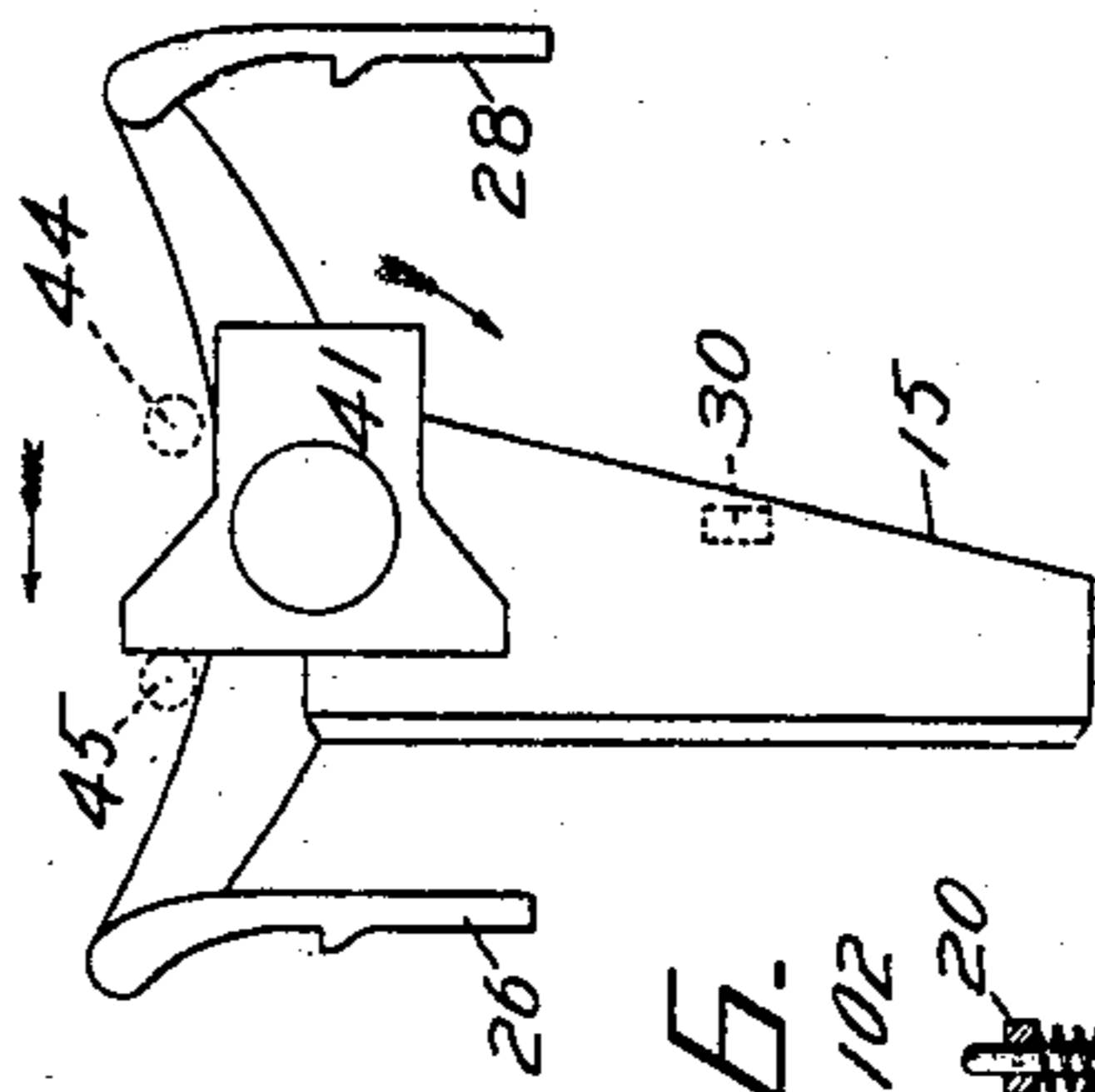


Fig. 13.

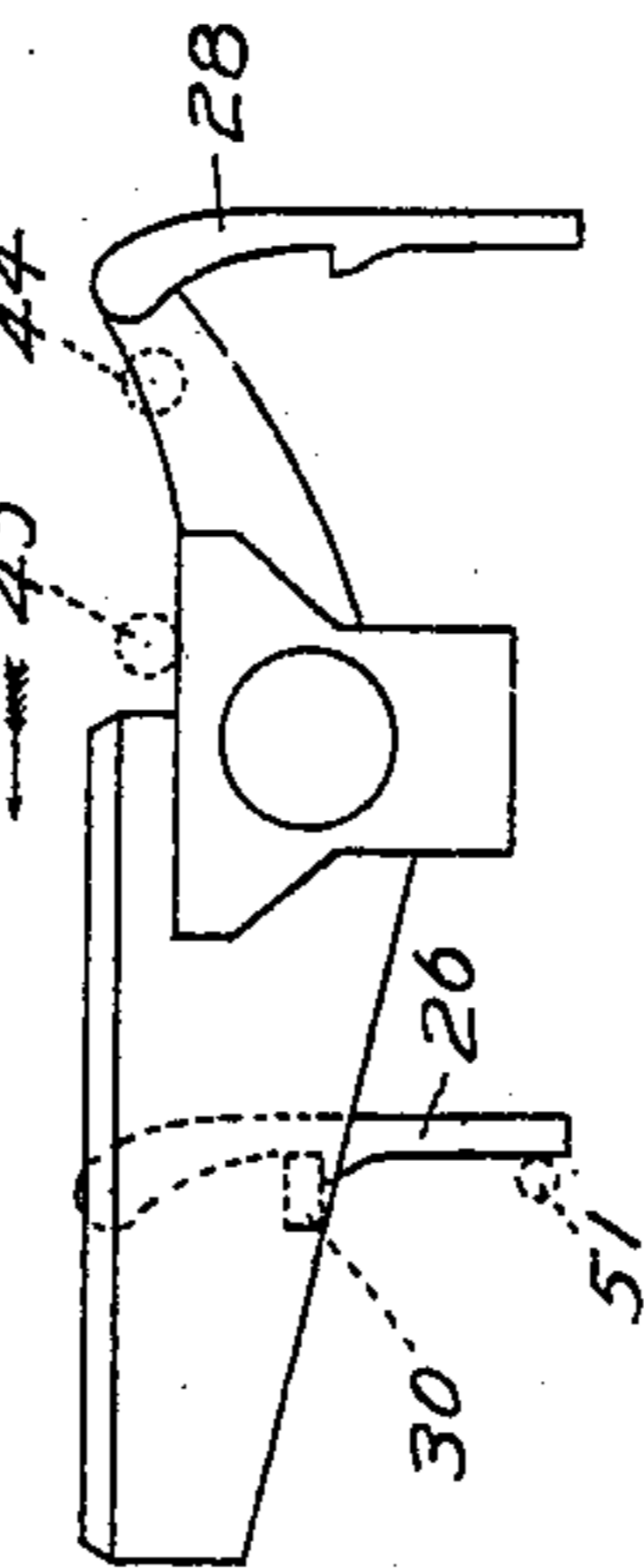


Fig. 6.



Fig. 7.

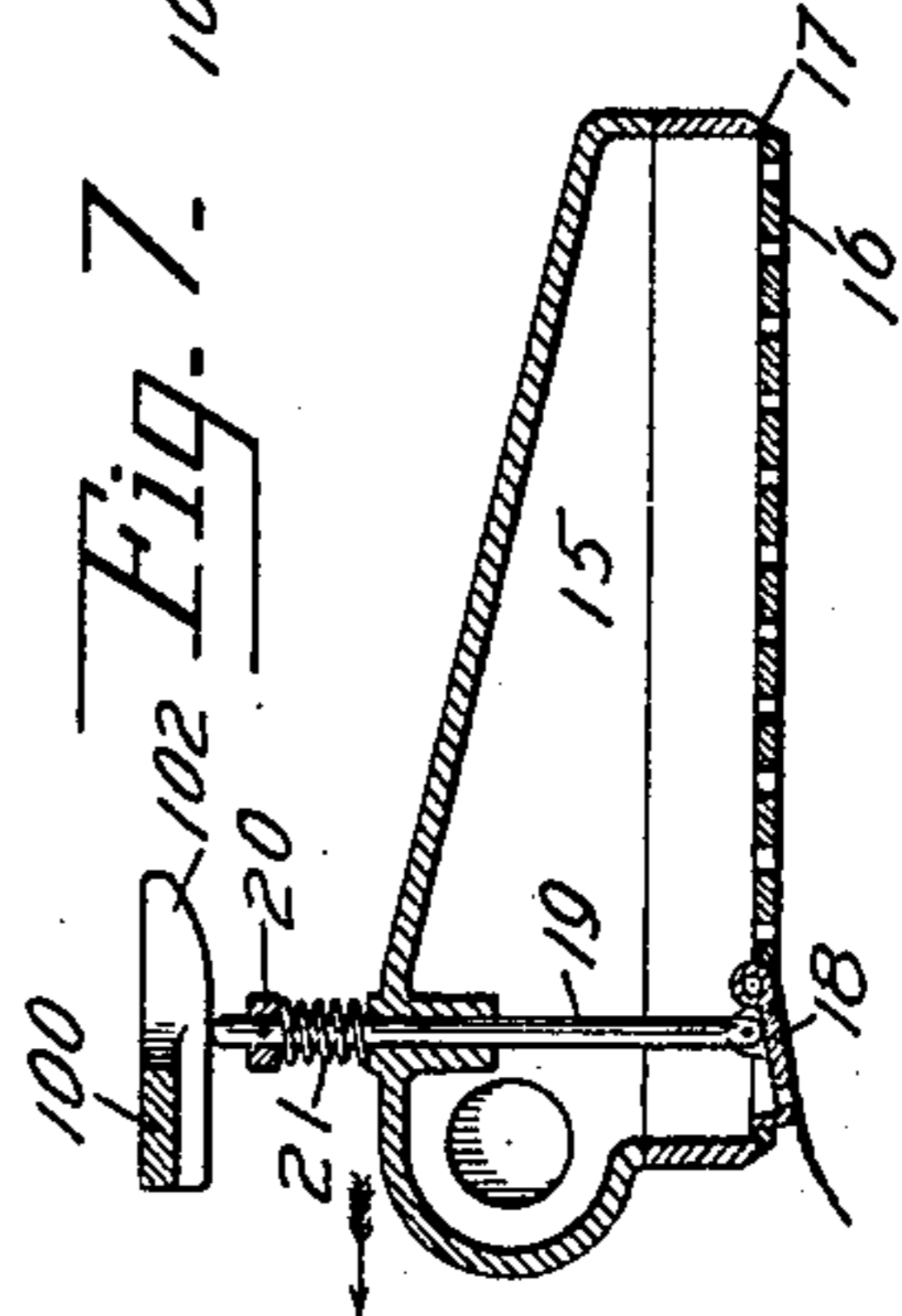
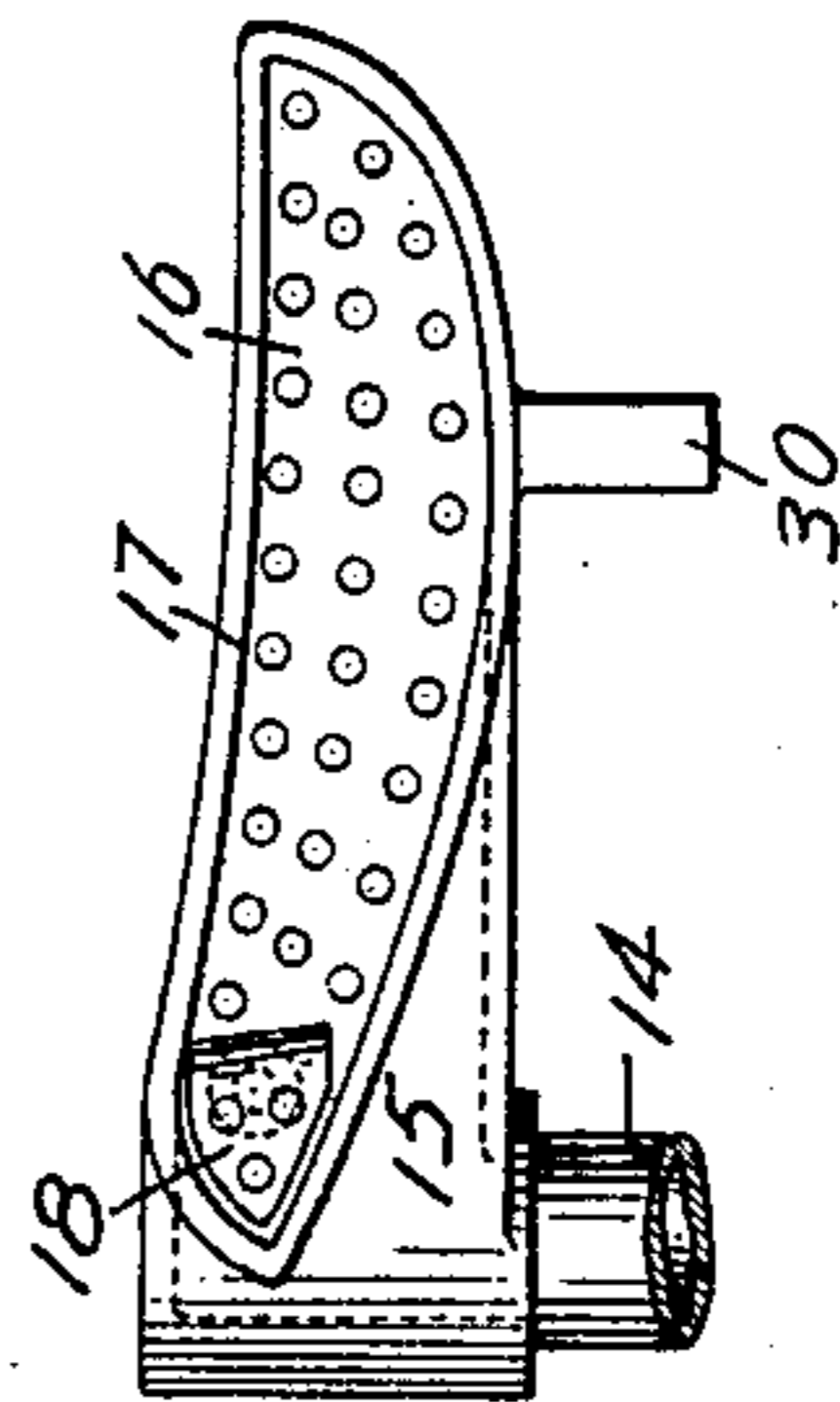


Fig. 8.



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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. 654,200, dated July 24, 1900.

Application filed February 5, 1900. Serial No. 4,078. (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 wrappers are automatically fed to the wrapping mechanism by a plurality of devices which hold or support them while they are being delivered to the wrapping mechanism it is desirable to produce a relative movement or movements between the wrapping mechanism and the devices by which the wrapper is held and delivered to the wrapping mechanism—namely, the wrapper-supports—which movement not only effects the delivery of the wrapper to the wrapping mechanism, but also causes it to be smoothly and evenly wound upon the cigar. The movement or movements referred to may be produced by varying the position of each of the wrapper-supports and the wrapping mechanism during the wrapping operation and the character of the movement according to the shape or 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 both ends—is to be wrapped, this movement may be the resultant of a movement by which the wrapper-supports and the wrapping mechanism 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 bunch in the wrapping mechanism, and an angular movement by which the angle at which the wrapper is delivered to the bunch is controlled, the amount of the angular movement varying according to the shape of the cigar to be wrapped. By arranging the plurality of wrapper-supports, however, so that they travel in a proper path with respect to the wrapping mechanism and each of them properly present the wrapper there-

to the necessity of causing either the wrapper-support or the wrapping mechanism to effect a distinct traversing movement may be avoided and the wrapper may be both fed to and traversed along the bunch in the wrapping mechanism by a relative approaching movement of that support which is delivering the wrapper to the wrapping mechanism.

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

A further object of the invention is to produce a cigar-machine in which a plurality of wrapper-supports operates to automatically feed wrappers to a wrapping mechanism, the wrappers being cut from material held on the supports by devices which are located in the path of travel of the supports.

A further object of the invention is to produce a cigar-machine in which a plurality of wrapper-supports shall be employed, the said supports coöperating with devices which are located in their path of travel to cut wrappers from material held on the supports and the supports being reversed in position between the cutting-point and the delivery-point for the wrappers.

A further object of the invention is to produce an improved means by which a wrapper-support may be caused to automatically place the end of the wrapper which is first fed to the wrapping mechanism in the bite of said mechanism.

A further object of the invention is to produce improved mechanical devices by which the various operations to be performed by the machine may be effected.

With these and other objects in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter fully described and then specifically 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 embodying the invention. Fig. 2 is a similar view showing the parts in different positions. Fig. 3 is an end view of the machine. Fig. 4 is a detail sectional view. Fig. 5 is a detail view illustrating the operation of the holding devices for the wrapper-support. Figs. 6 and 7 are detail sectional views illustrating the construction of the wrapper-support. Fig. 8 is a plan view of the supports. Figs. 9, 10, 11, 12, and 13 are diagrammatic views illustrating the operation of reversing the position of the wrapper-supports.

Referring to said drawings, which illustrate a concrete embodiment of the invention, 1 indicates the machine-bed. Located on said bed is a main driving-shaft 2, said shaft being supported in suitable bearings 3 and having any suitable driving device—as, for instance, a belt-pulley 4. This shaft is provided with a worm 5, which meshes with a worm-gear 6, said gear being mounted on a vertical cam-shaft 7, which is suitably supported in the machine-bed.

Each of the wrapper-supports, to be hereinafter described, may be mounted and operated in any suitable manner. Preferably, however, the bed 1 has mounted therein a vertical shaft 8, said shaft being shouldered, as shown, and located in a long bearing 9, which is or may be integral with the bed. The upper end of the shaft 8 is formed to provide a chamber 10, from which chamber radiate hollow arms 11, said arms being preferably connected by webs 12. As shown, the shaft 8, the chamber 10, the hollow arms 11, and the webs 12 are all cast in one piece, and this is the preferred form of the construction. Each of the webs 12 is further formed to provide a bearing 13, and in these bearings 13 are located sleeves 14, these sleeves having their ends socketed in the ends of the hollow arms 11. Connected with the sleeves 14 are chambers 15, these chambers being preferably formed by castings made integrally with the sleeves 14. Each of the castings has an opening on one side, which is closed by a perforated plate 16. The edges of the casting which surround the perforated plate are sharpened to form a knife 17. Each of the plates 16 is preferably formed with a movable section 18, said section being hinged to the main portion of the plate and having connected thereto a rod 19, which extends from a bearing formed in the opposite side of the casting. The rod 19 has a collar 20 at its end, and between this collar and the body of the casting is located a spring 21, which serves to hold the rod in such a position that the section 18 lies in the same plane with the plate 16. The purpose of this movable section will be hereinafter stated. Each of the castings which form the chambers 15 is preferably enlarged at the point where it joins the sleeve 14, so as to provide a shoulder, which shoulder rests snugly against the bearing 13, the several sleeves being held in position in the bearings 13 by collars 22 or in

any other suitable manner. By this construction it will be seen that the sleeves are rotatably mounted in the bearings 13. It will be further understood that each of the supports, constructed as herein described, forms a suction-support, a suitable pipe, as 23, being connected with the chamber 10 and to any suitable suction-producing device—such, for instance, as a fan. (Not shown.) It is to be understood, however, that the supports need not necessarily be suction-supports, as other forms of sheet-retaining devices might be substituted for the suction.

The machine is constructed so that each of the wrapper-supports is held with its perforated plate uppermost at the time when a leaf of tobacco is placed thereon and the wrapper cut therefrom, after which the support is reversed in position, so that it may deliver its wrapper to a suitable wrapping mechanism. Any suitable means may be provided for retaining the supports in each of the positions referred to. Preferably, however, the bearings 13 have formed integrally therewith supporting-arms 24 and 25. Each of the arms 24 is provided with a swinging latch 26, each of said latches having a supporting-shoulder 27. In the same way each of the arms 25 is provided with a swinging latch 28, said latches 28 also having supporting-shoulders 29. Each of the castings 15, which form the suction-chambers, is provided on its side with a lug 30, with which the supporting-shoulders 27 and 29 of the latches 26 and 28 alternately engage, as will be hereinafter described. The latches 26 are provided with upwardly-extending pins 31, to which are connected springs 32, the other ends of the springs being secured to pins 33, extending from bearings 34 on the arms 24. These bearings serve to hold the latches 26 over against stop-pins 35. Each of the latches 28 has connected to it a spring 36, said springs being connected at their other ends with pins 37, which extend from the arms 25. These springs hold the latches 28 over against stop-pins 38. In order to hold the supports firmly down against the shoulders 27 29 on the latches, each of the arms 24 25 is provided with a spring-pin 39, which pins are arranged to bear on the upper side of the lugs 30, before referred to. (See Fig. 5.) Inasmuch as each of the latches operates on the under side of these lugs, it will be seen that the lug of each casting is firmly held between the spring-seated pin 39 on one side and one of the shoulders 27 29 on the other side.

While the devices for reversing the position of the suction-supports may be variously constructed in the machine shown, the ends of the sleeves 14 are preferably provided with tumbler-blocks 41, secured to the sleeves in any suitable manner. These tumbler-blocks 41 are constructed and operated at suitable times by pins 42 43 44 45. The pins 42 43 are mounted in a double-socketed supporting-bracket 46, which is mounted on a standard

47, suitably secured to the bed-plate of the machine. In the same manner the pins 44 45 are mounted in a double-socketed supporting-bracket 48, which is mounted on a stand-
 5 ard 49, also secured to the bed-plate of the machine. The bracket 47 is so located in the path of the series of supports that the tumbler-blocks 41 will strike the pins 42 43 just after the cutting device, to be hereinafter de-
 10 scribed, has operated and the pins 44 45 are located so as to be struck by the tumbler-blocks 41 just prior to the time when the cutting device operates. Releasing-pins 50 and 51 are also provided for the latches. The op-
 15 eration of these devices will be hereinafter described.

Any suitable devices may be employed to coöperate with the knives 17 to cut wrappers from leaves of tobacco or other material held
 20 on the perforated plates 16. In the machine shown a pair of cutting-rollers 52 are shown as mounted on an arm 53, said arm projecting over a hub 54, which is journaled on the upper end of the shaft 8. The hub 54 has an
 25 arm 55 projecting therefrom, the said arm being connected by a link 56 to one of the arms 57 of a bell-crank lever 57 58, which is pivoted to a standard 59, rising from the bed-plate of the machine. The arm 58 is provided
 30 with a friction-roller 60, which runs on the circumference of a cam 61, which is mounted on the vertical cam-shaft 7, the arm 58 being held forward against the cam by means of a suitable spring 62. As the cam rotates it will
 35 be seen that the bell-crank 57 58 will cause a rotary reciprocating motion of the arm 53 and cause the rollers 52 to run over the knife 17 of each of the supports as it comes under the rollers, thus cutting a wrapper from the leaf
 40 of tobacco or other material held thereon.

Any suitable devices may be used for rotating the shaft 8, which operates the suction-supports. In the machine shown the said shaft is provided with a ratchet-wheel 63,
 45 (see Fig. 4 and dotted lines in Figs. 1 and 2,) said ratchet-wheel being engaged by a pawl 65, mounted on a pawl-carrying arm 66. This pawl-carrying arm 66 extends from a hub 67, which surrounds the upper reduced end of
 50 the bearing 9 and is provided with rack-teeth 68 on its periphery, said rack-teeth extending part of the way around the collar. The rack-teeth 68 are engaged by a segment-rack 69, said segment-rack being formed on the
 55 end of a lever 70, which is pivoted on a standard 71, rising from the bed-plate of the machine. The other end of the arm 70 carries a cam-roll 72, which engages with a cam 73, also mounted on the vertical cam-shaft 7, before referred to.
 60

The wrapper-supports are so arranged with respect to their carrier-arms that that end of each of the supports which carries the end of the wrapper which is to be applied to the
 65 tuck end of the cigar-bunch is at the beginning of the wrapping operation in alinement with that end of the wrapping mechanism

which operates upon the tuck end of the bunch. As the wrapping operation proceeds and as the relative approaching movement takes place
 70 between the support and the wrapping mechanism successive parts of the support come into alinement with successive parts of the wrapping mechanism, and at the end of the
 75 wrapping operation the end of the support which carries the tip end of the wrapper is in alinement with the end of the wrapping mechanism which operates upon the tip end of the bunch. In the machine shown, therefore,
 80 the two ends of the wrapper-support travel in concentric arcs, that end of the support which carries the end of the wrapper which is applied to the tuck end of the bunch traveling in an arc which is nearer the center of
 85 rotation than the other arc. This arrangement of the path of travel of the wrapper-support with relation to the wrapping mechanism obviates the necessity of a distinct traversing movement of either the support or the wrapping mechanism.
 90

Any suitable form of wrapping mechanism may be used in this machine. Preferably, however, the wrapping mechanism will be of the type disclosed in United States patent to J. Reuse, No. 552,447, dated December 31,
 95 1895, reference being made to said patent for a full disclosure of the construction of said mechanism. For the purpose of this application it is sufficient to say that the wrapping mechanism consists of two pairs of opening
 100 and closing jaws 74, said jaws being provided with projections 75, in which work operating-rods 76. These operating-rods are driven from short shafts located in the end frame-
 105 pieces 77 of the wrapping mechanism, these end frame-pieces being connected in the machine shown to a base-plate 78. These short shafts referred to are provided with gears 79 at each end of the machine. These gears
 110 mesh with larger gears 80, one of which is located at each end of the machine. The gears 80 are mounted on a shaft 81, which is also journaled in the end frame-pieces 77.

In this machine the wrapping mechanism is to be given an angular movement during
 115 the wrapping operation with respect to the wrapper support or carrier. The wrapping mechanism as a whole must, therefore, be so mounted as to permit this angular movement, and at the same time the shaft 81 must be so
 120 connected to its driving means as to permit the movement to take place without disconnecting it therefrom.

The wrapping mechanism may be mounted in various ways, so as to permit the angular
 125 movement referred to be given to it. Preferably, however, it will be pivotally mounted, and to this end the base-plate 78 is provided with a downwardly-projecting hollow boss 82, which is journaled in a bearing 83, formed
 130 on a bracket 84, which is suitably secured to the bed-plate of the machine. Extending through the boss 82 is a shaft 85, having on its lower end a bevel-gear 86 and on its up-

per end another bevel-gear 87. The bevel-gear 87 meshes with a bevel-gear 88, mounted on the shaft 81. The bevel-gear 86 meshes with a bevel-gear 89, which is mounted on a short counter-shaft 90, said shaft being journaled in a bearing 91, suitably mounted on the bed-plate of the machine. The other end of the shaft 90 is provided with a sprocket-wheel 92, said wheel being engaged by a sprocket-chain 93, which runs over another sprocket-wheel 94 on the main shaft 2.

Suitable clutch mechanism will be provided for disconnecting the wrapping-jaws from the driving mechanism, but as it forms no part of this invention it is omitted from the description and illustration.

It will be seen that the wrapping mechanism when mounted and driven as before described is free to turn about the shaft 85 as a center and that the gear 87 will drive the wrapping mechanism no matter what its angular position may be.

Any suitable means may be employed for turning the wrapping mechanism on its pivot to produce the angular movement by which the angle of presentation of the wrapper is varied. In the machine shown a link 95 is connected to the bed-plate of the machine, said link being connected to a lever 96, which is pivoted at 97 to the bed-plate of the machine. The lever 96 is provided between its ends with a cam-roll 98, which engages a suitable cam 99, mounted on the vertical cam-shaft 7, before referred to.

The operation of the machine as a whole is as follows: A leaf of tobacco or other material from which a wrapper is to be cut is placed on one of the supports when the said support is standing with the side carrying the perforated plate uppermost, as shown in Fig. 1, the leaf being immediately secured to the plate by the suction which in this machine is constantly operating on all the supports. Through the operation of the proper cam the arm 53 is actuated to cause the rollers 52 to run over the knives 17, and at the same time the cam which operates the segmental rack 69 throws the segment-carrying lever into operation and starts the rotation of the shaft 8. As the rotation of the shaft 8 proceeds the latch 26 strikes the pin 50 (see Fig. 9) and is thrown backward against the tension of its spring, thus releasing the casting 15, which forms the suction-chamber. When the casting 15 is released by the latch 25, it may either swing down by gravity into the position shown in Fig. 10 or if there is considerable friction between the sleeve 14, which carries the casting and its bearings, it will be forced down by the pressure of the tumbler-block 41 against the pin 43. The further advancing movement of the suction-support brings the other side of the tumbler-block against the pin 42, this position of the parts being shown in Fig. 10. As the suction-support advances it will be swung about its pivot, (see Fig. 10,) and this movement will continue until the

shoulder 29 of the latch 28 catches under the lug 30, this position of the parts being shown in Fig. 11. As the suction-support advances it comes into position over the wrapping mechanism. Just as this occurs the top of the spring-rod 19 strikes the under side of an arm 100, which is mounted on a standard 101, secured to the bed-plate. This arm 100 has an inclined side 102, so that the spring-rod is forced downward, bending the section 18 down into the position shown in Fig. 7 and forcing the end of the wrapper held on the suction-plate 16 into position to be seized by the jaws of the wrapping mechanism. The parts reach this position just at the end of a stroke of the pawl, so that there is a short dwell in the operation of the machine, and it is at this time that the operator places a fresh leaf on the support which is then in front of her. The supports are again advanced, the wrapping mechanism being thrown into operation by its clutch mechanism (not shown) coincidentally with or just prior to the time when the pawl begins another stroke.

It will be observed from a comparison of Figs. 1 and 2 that as the supports execute what may be termed the "approaching" movement the wrapping mechanism is swung by its cam and lever, so that the wrapper is not only delivered to the wrapping mechanism, but is fed along the bunch contained in the wrapping-jaws, and at the same time this swinging or angular movement of the wrapping mechanism causes the wrapper to be presented at the proper angle to all parts of the bunch, notwithstanding the variation in diameter of the bunch.

By the term "approaching," as herein used, it is not meant that all parts of the support approach the wrapping mechanism during the wrapping operation, since in the machine shown that part of the support from which the wrapper has been delivered moves away from the wrapping mechanism. That part of the support, however, which still retains the wrapper continues to approach the wrapping mechanism during the wrapping operation, and hence the term "approaching" is deemed a proper one to apply to this movement of the support.

After the support has delivered the wrapper to the bunch in the wrapping mechanism it moves onward until the latch 28, which is holding the support in position, strikes the pin 51. When the latch strikes the pin 51, it is moved backward and the suction-chamber is either swung down by gravity into the position shown in Fig. 12 or is forced down by the tumbler-block 41 coming in contact with the pin 44. As the support continues its movement the tumbler-block strikes the pin 45 and the continued movement of the support acting against the tumbler-block throws the support up into the position where the lug 30 is engaged by the latch 26, which is the position of the parts shown in Fig. 13.

In an application, Serial No. 4,079, filed of

even date herewith, I have shown and described a construction in which a single wrapper-support coöperates with a wrapping mechanism, the machine being provided with means for producing a relative approaching movement between the support and the wrapping mechanism, the support and the wrapping mechanism being so arranged that the approaching movement brings the end of the support carrying the tuck end of the wrapper into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation and the other end of the support into alinement with the other end of the wrapping mechanism at the end of said operation. I do not, therefore, claim such construction in this application.

It will be understood that the several mechanisms by which the various operations are performed may be widely varied. The invention is not, therefore, to be limited to the specific mechanisms which have been herein shown and described.

What is claimed is—

1. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

2. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, means for reversing the position of each support after a wrapper has been placed thereon, and means for giving the wrapping mechanism an angular movement, substantially as described.

3. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a sheet of material is held on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, means for reversing the position of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the supports, substantially as described.

4. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement, substantially as described.

5. The combination with a wrapping mechanism, of a plurality of wrapper-supports,

suction mechanism for holding a wrapper on each of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, means for reversing the position of the supports after a wrapper has been placed thereon, and means for giving the wrapping mechanism an angular movement, substantially as described.

6. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a sheet of material on each of the supports, cutting devices operating to cut a wrapper from the sheet of material while it is held on the support, means for reversing the position of the supports, means for giving the supports a rotating approaching movement with respect to the wrapping mechanism, and means for giving the wrapping mechanism an angular movement with respect to the supports, substantially as described.

7. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, and means for producing a relative approaching movement between the supports and the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, substantially as described.

8. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for producing a relative approaching movement between the supports and the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

9. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, and means for producing a relative approaching movement between the supports and the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrap-

pers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, substantially as described.

10. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for producing a relative approaching movement between the supports and the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

11. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, and means for causing the wrapper-supports to execute an approaching movement with respect to the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, substantially as described.

12. The combination with a wrapping mechanism, of a plurality of wrapper-supports, means whereby a wrapper is held on each of the supports, means for causing the wrapper-supports to execute an approaching movement with respect to the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

13. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, and means for causing the wrapper-supports to execute an approaching movement with respect to the wrapping

mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, substantially as described.

14. The combination with a wrapping mechanism, of a plurality of wrapper-supports, suction mechanism for holding a wrapper on each of the supports, means for causing the wrapper-supports to execute an approaching movement with respect to the wrapping mechanism, the supports and the wrapping mechanism being so arranged that the approaching movement brings the ends of the supports carrying the tuck ends of the wrappers into alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation, and the other ends of the supports into alinement with the other end of the wrapping mechanism at the end of said operation, and means for giving the wrapping mechanism an angular movement, substantially as described.

15. The combination with a carrier-arm, of means for moving said arm, a wrapper-support mounted on the arm, means whereby a wrapper is held on the support, means for maintaining the support in either of two positions with respect to the arm, a tumbler-block connected with the support, and means located in the path of travel of the arms and cooperating with the tumbler-block to shift the wrapper-support from one position to the other, substantially as described.

16. The combination with a wrapping mechanism, of a carrier-arm, means for moving said arm, a suction wrapper-support mounted on the arm, means for maintaining the support in either of two positions with respect to the arm, a tumbler-block connected with the support, means located in the path of travel of the arms and cooperating with the tumbler-block to shift the wrapper-support from one position to the other, and means for giving the wrapping mechanism an angular movement, substantially as described.

17. The combination with a carrier-arm, of means for moving said arm, a wrapper-support carried by the arm, means whereby a wrapper is held on the support, latch devices operating to hold the support in either of two positions with respect to the arm, releasing devices located in the path of travel of the arm for operating on the latch devices, a tumbler-block connected with the support, and means also located in the path of travel of the arm for operating on the tumbler-block and shifting the support from one position to the other, substantially as described.

18. The combination with a wrapping mech-

anism, of a carrier-arm, means for moving said arm, a suction wrapper-support carried by the arm, latch devices operating to hold the support in either of two positions with respect to the arm, releasing devices located in the path of travel of the arm for operating on the latch devices, a tumbler-block connected with the support, means also located in the path of travel of the arm for operating on the tumbler-block and shifting the support from one position to the other, and means for giving the wrapping mechanism an angular movement, substantially as described.

19. The combination with a wrapping mechanism, of a carrier-arm, means for moving said arm, a suction wrapper-support carried by the arm, said support being so arranged with respect to the wrapping mechanism that the end of the support which carries the tuck end of the wrapper is in alinement with the end of the wrapping mechanism operating upon the tuck end of the bunch at the beginning of the wrapping operation and the other end of the support being in alinement with the other end of the wrapping mechanism at the end of the operation, latch devices operating to hold the support in either of two positions with respect to the arm, releasing devices located in the path of travel of the arm for operating on the latch devices, a tumbler-block connected with the support, means also located in the path of travel of the arm for operating on the tumbler-block and shifting the support from one position to the other, and means for giving the wrapping mechanism an angular movement, substantially as described.

20. The combination with a wrapper-support, the operating-face of which has a movable section, of a spring-rod for moving the

section, and means for actuating the rod, substantially as described.

21. The combination with a wrapper-support, the operating-face of which is formed by a perforated plate, said plate having a movable section, of a spring-rod for moving the section, and means for actuating the rod, substantially as described.

22. The combination with a wrapping mechanism, of a carrier-arm, a wrapper-support mounted on the arm, the operating-face of said support having a movable section, a spring-rod for moving the section, means for moving the arm, and a cam located near the wrapping mechanism with which the spring-rod comes in contact and by which it is actuated to move the movable section, substantially as described.

23. The combination with a wrapping mechanism, of a plurality of carrier-arms, means for moving said arms, a suction wrapper-support carried by each of the arms, latch devices operating to hold the supports in either of two positions with respect to the arms, pins located in the path of travel of the arms for releasing each of the latch devices, a tumbler-block connected with each support, and pins also located in the path of travel of the arms for operating on the tumbler-blocks and shifting the supports from one position to the other, substantially as 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.