

(No Model.)

8 Sheets—Sheet 1.

J. REUSE.
CIGAR MACHINE.

No. 554,606.

Patented Feb. 11, 1896.

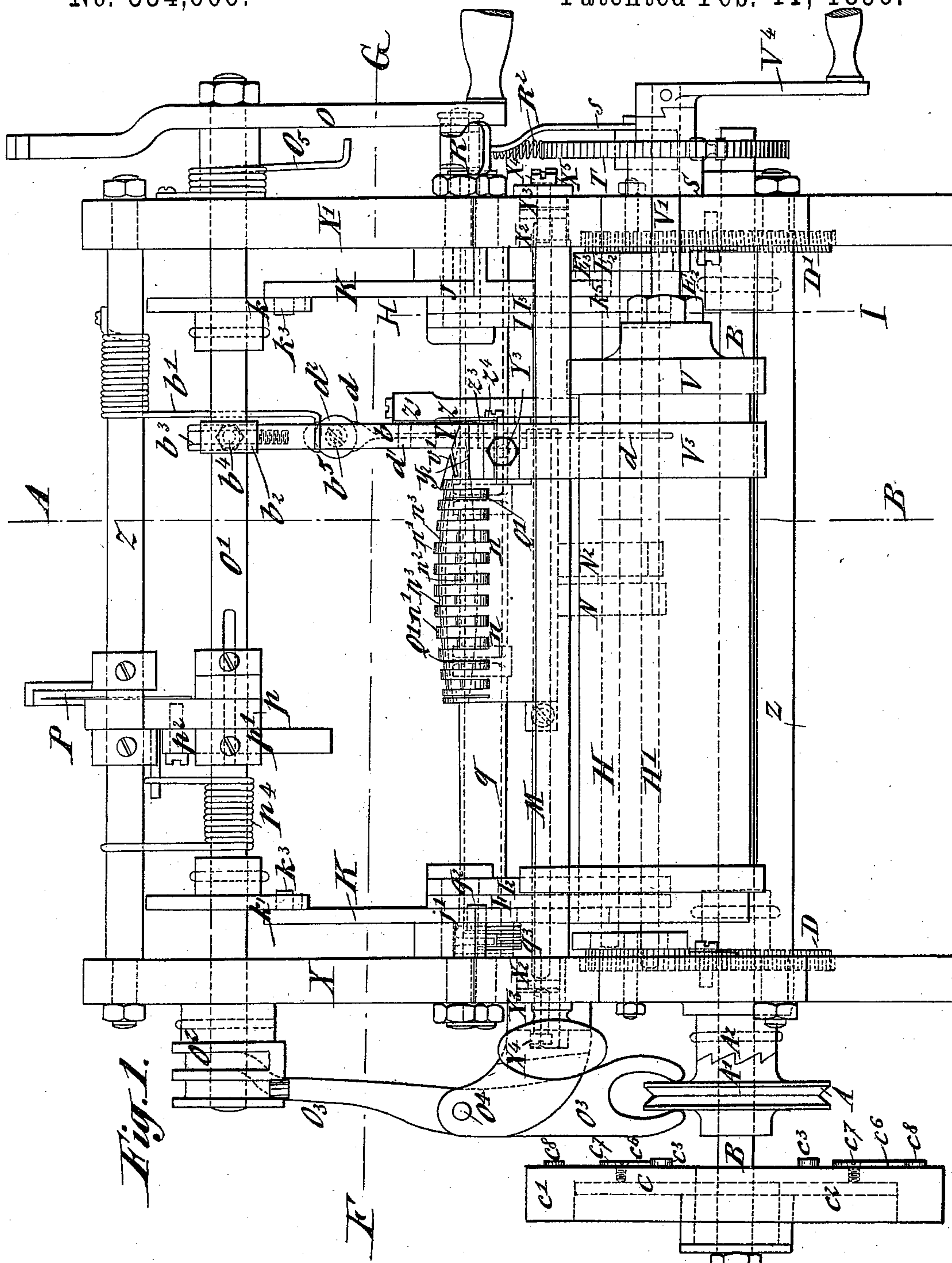


Fig. 1.

Witnesses.
G. W. Rea.

Robert Emmett.

Inventor.

Jean Reuse.

By

James L. Norrie.

Atty.

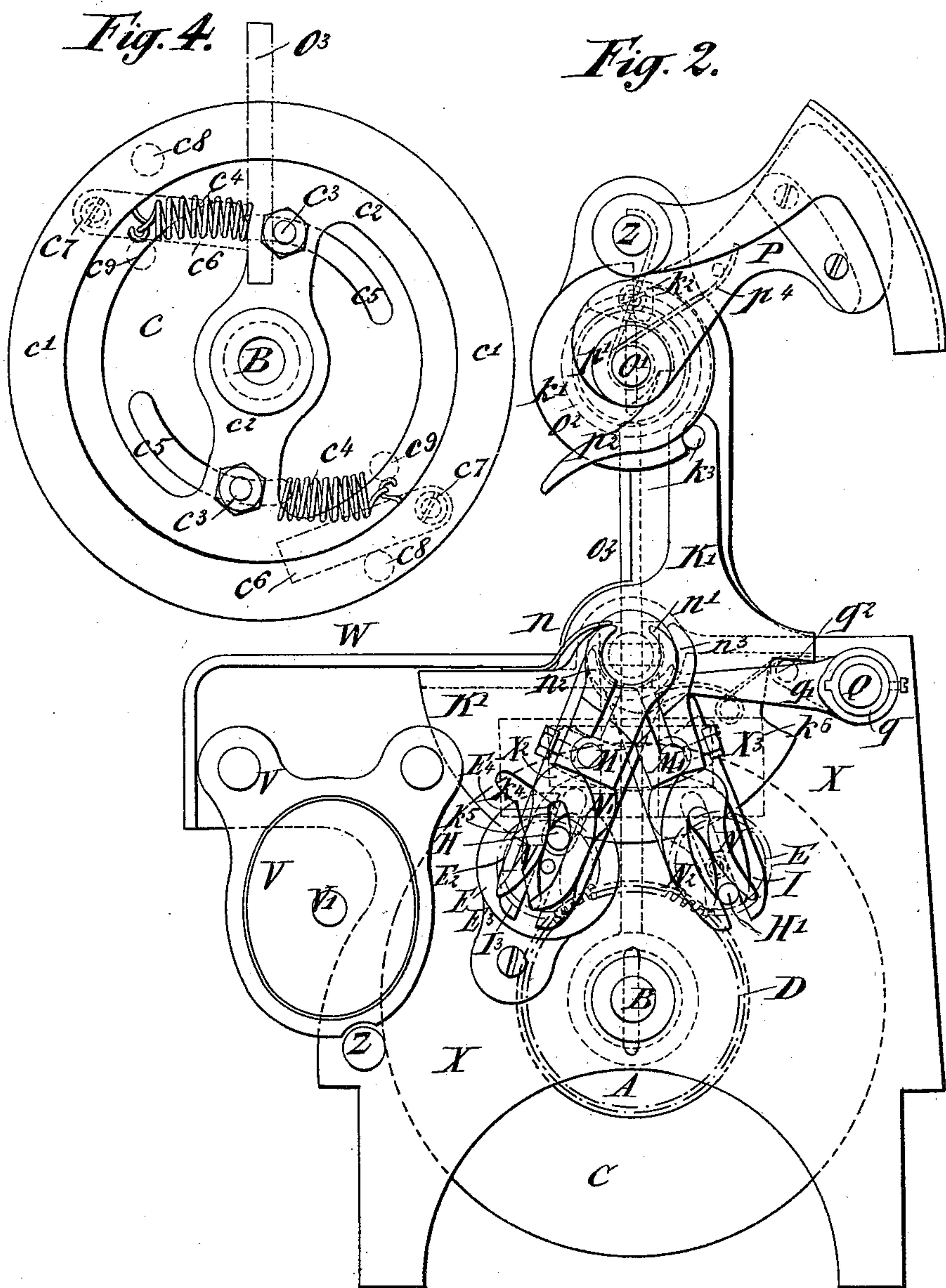
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8 Sheets—Sheet 2.

J. REUSE.
CIGAR MACHINE.

No. 554,606.

Patented Feb. 11, 1896.



Witnesses,
G. W. Rea,

Robert Brett,

Inventor
Jean Reuse
By James L. Norrie.
Atty

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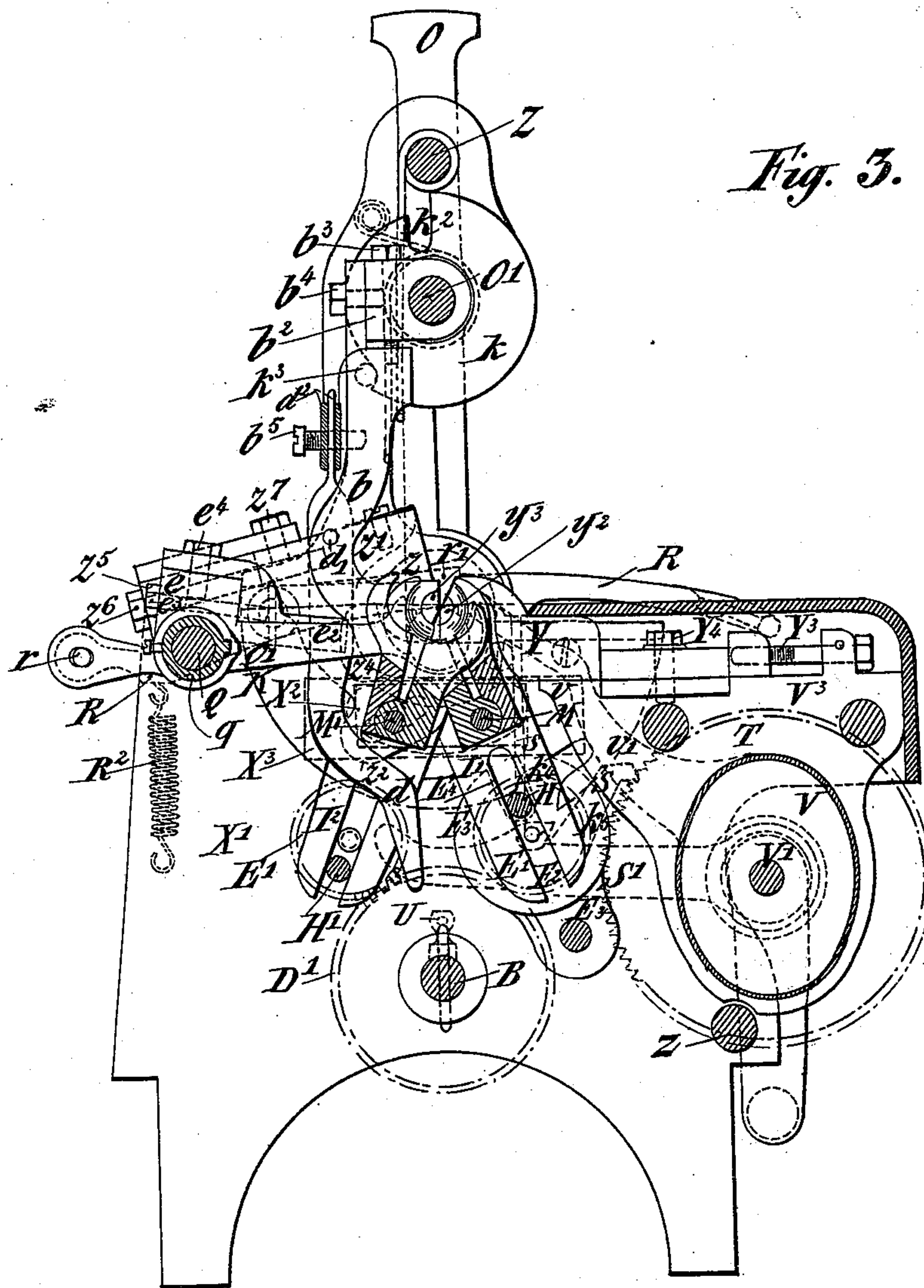


Fig. 3.

Witnesses.
G. W. Rea.

Robert Everett.

Inventor
Jean Reuse.
By
James L. Norris.
Atty.

(No Model.)

8 Sheets—Sheet 4.

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Patented Feb. 11, 1896.

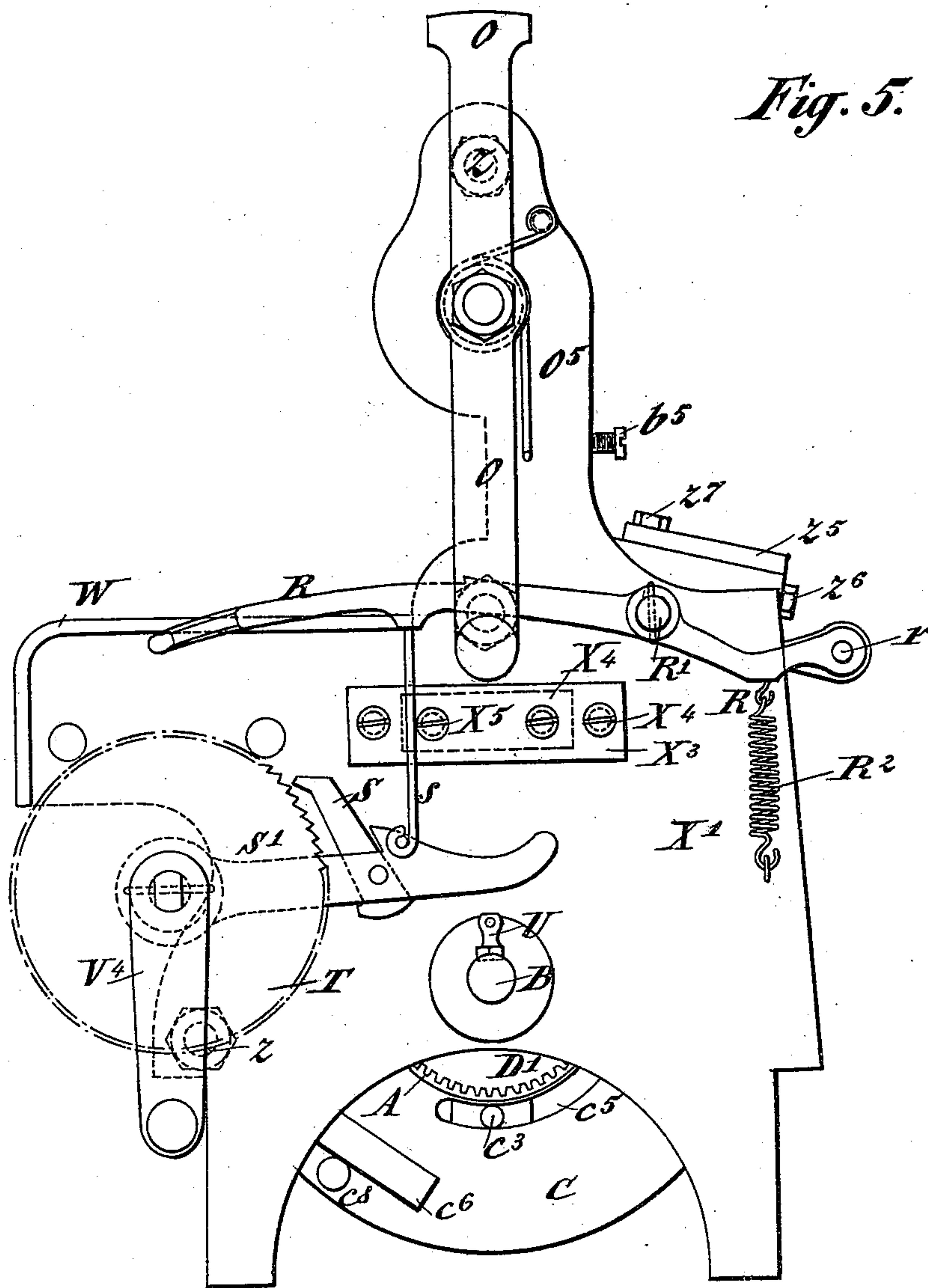


Fig. 5.

Witnesses.
G. W. Rea,

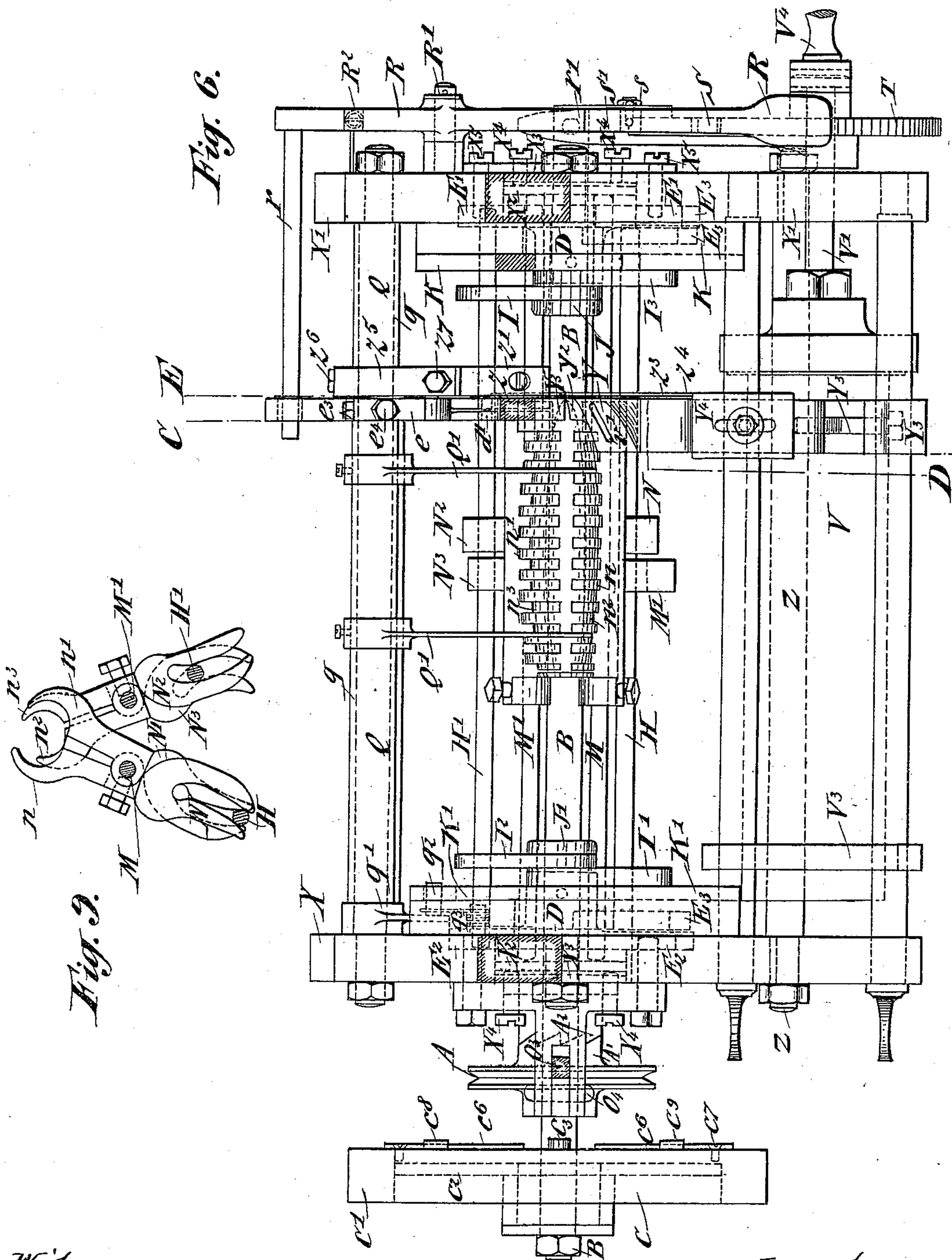
Robert Emmett,

Inventor
Jean Reuse.
By James L. Norris.
Atty.

J. REUSE.
CIGAR MACHINE.

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Witnesses.
G. W. Rea,
Robert Everett.

Inventor
Jean Reuse,
By
James L. Norris.
Atty.

(No Model.)

8 Sheets—Sheet 6.

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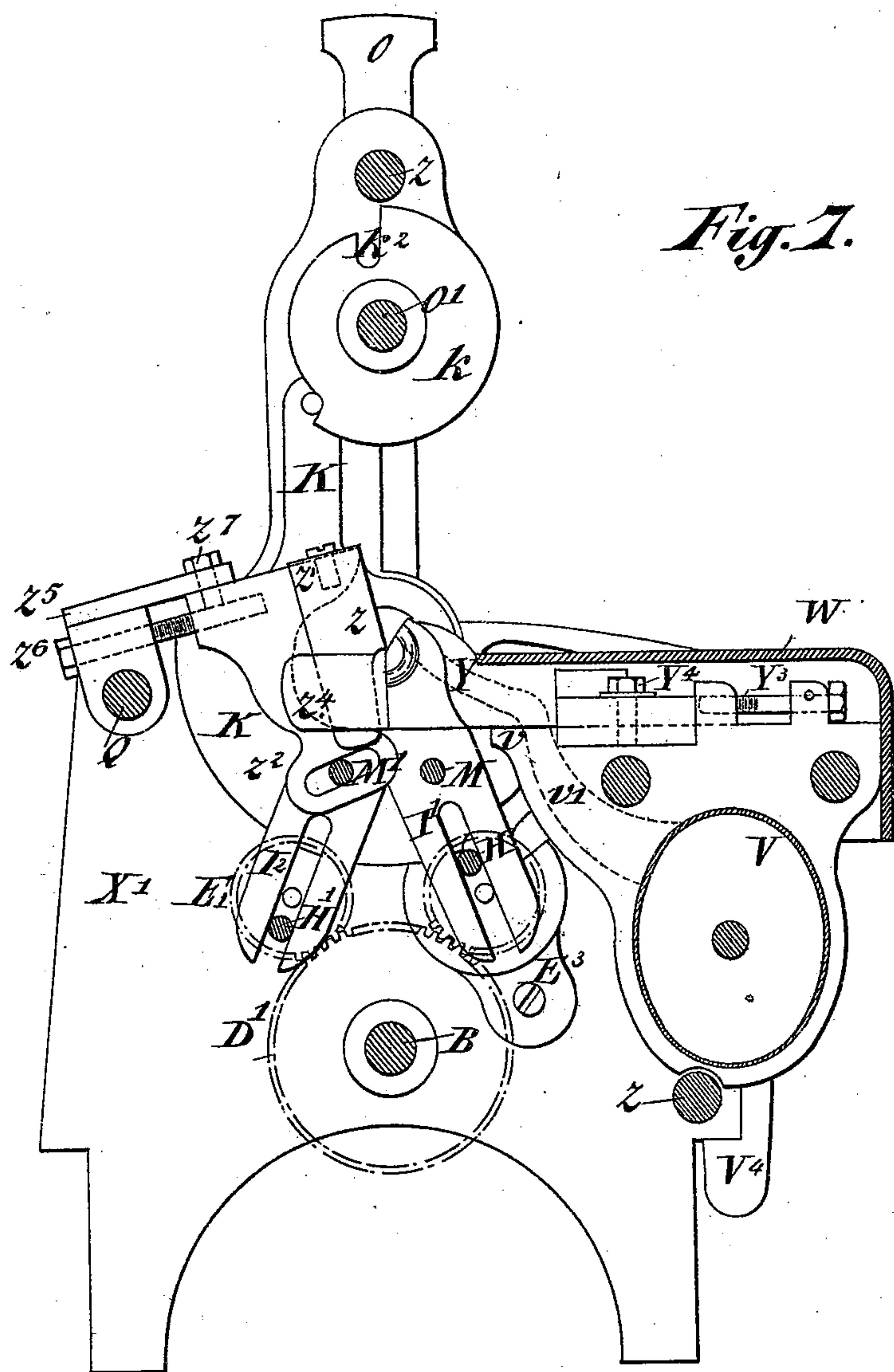


Fig. 7.

Witnesses.
G. W. Rea.

Albert Everett.

Inventor
Jean Reuse.
By
James L. Norris.
Atty.

(No Model.)

8 Sheets—Sheet 7.

J. REUSE.
CIGAR MACHINE.

No. 554,606.

Patented Feb. 11, 1896.

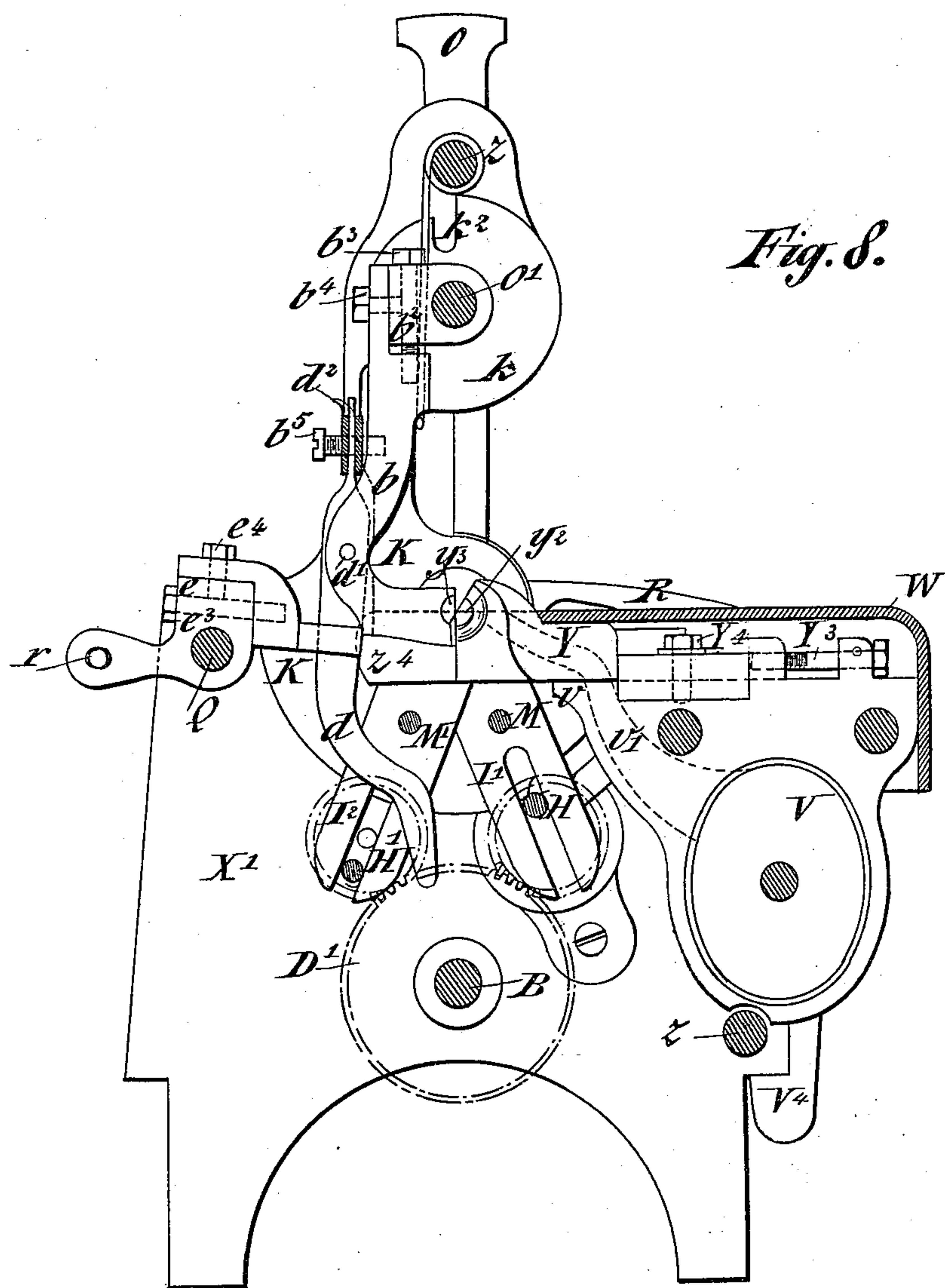


Fig. 8.

Witnesses.

L. W. Rea,

Robert Everett.

Inventor
Jean Reuse.

By

By
James L. Norris.

Atty.

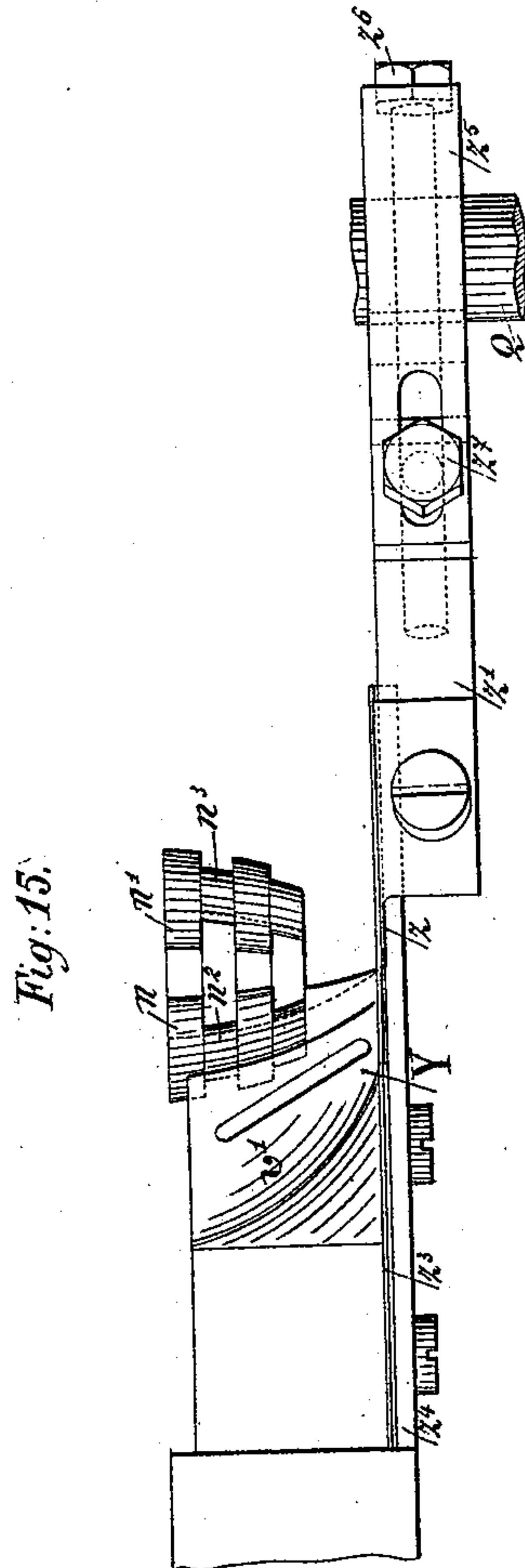
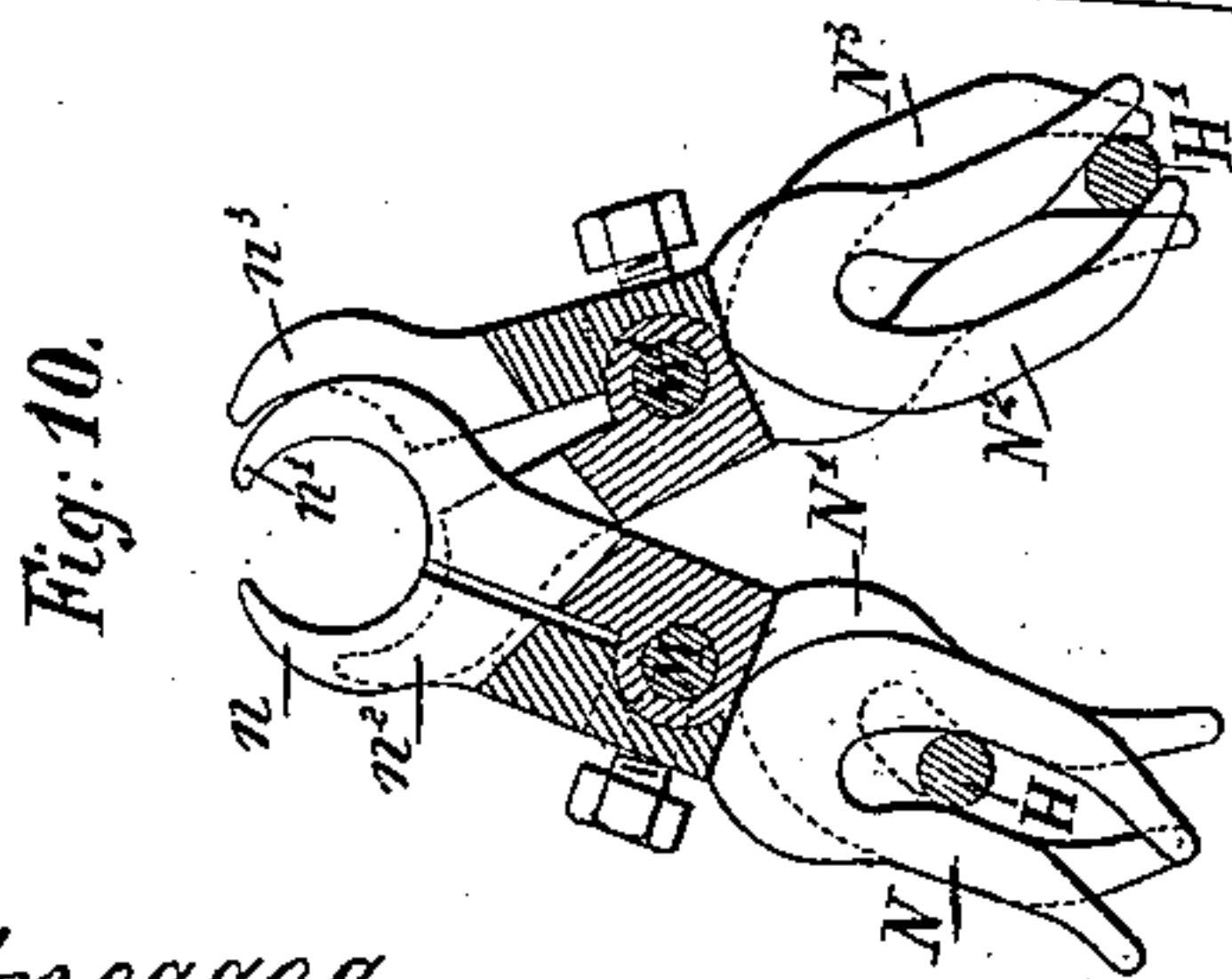
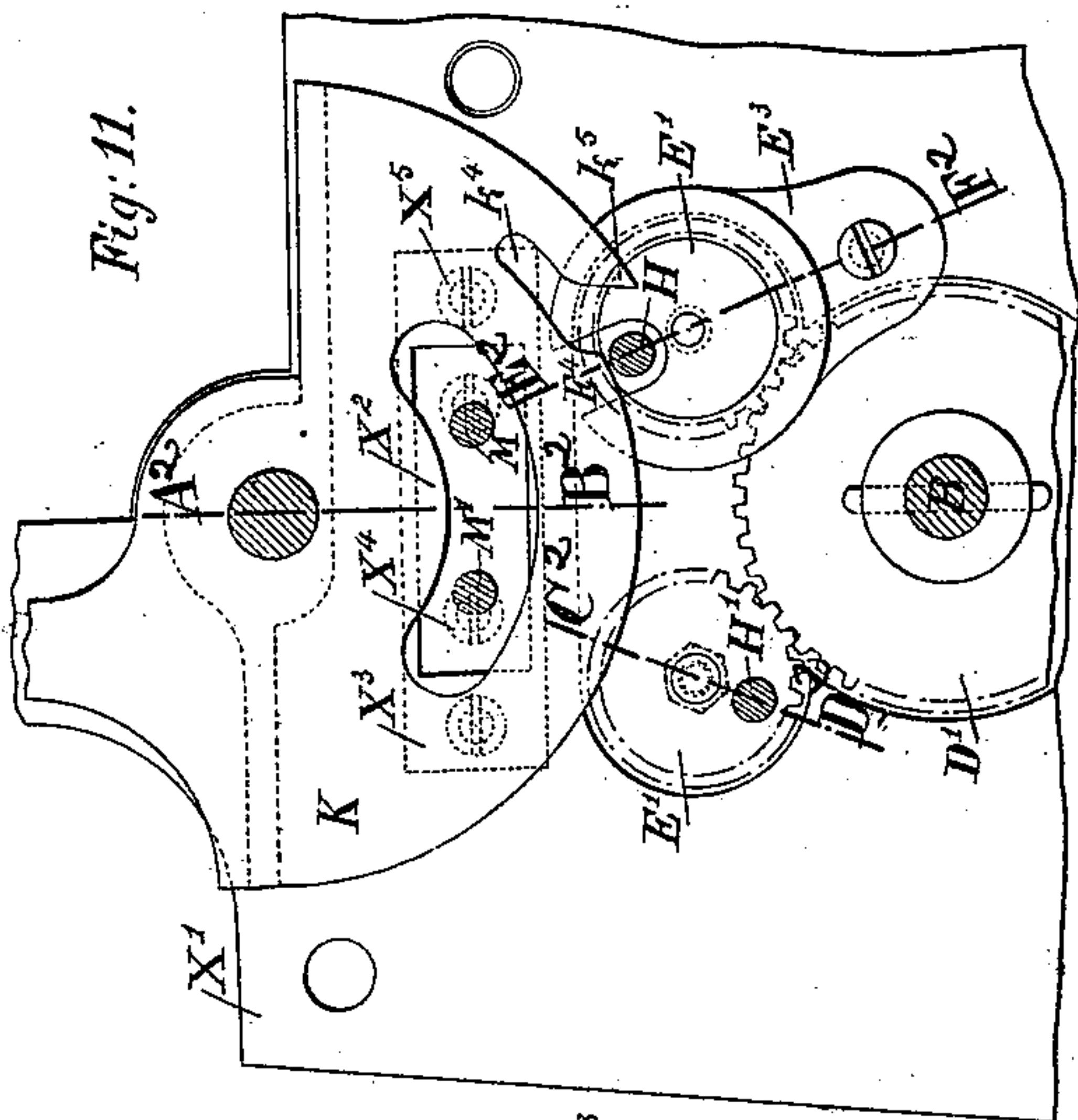
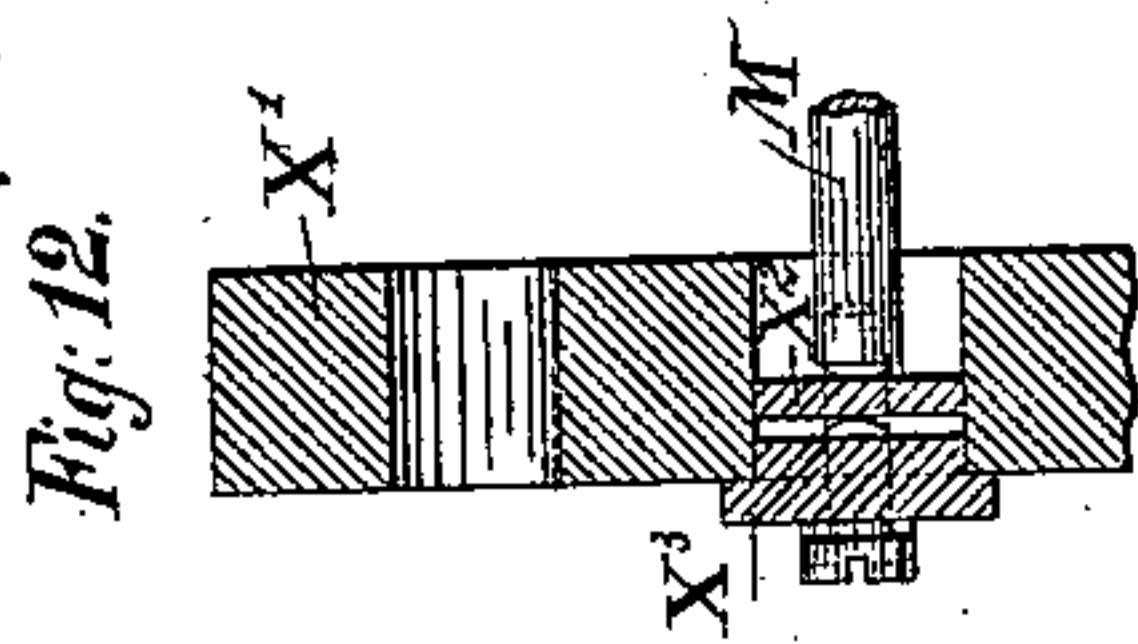
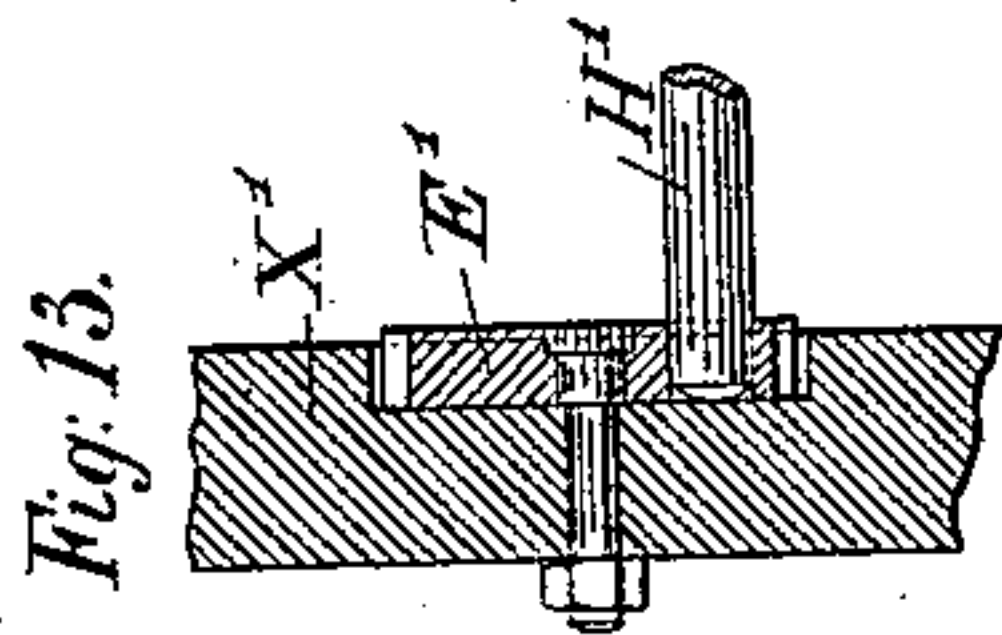
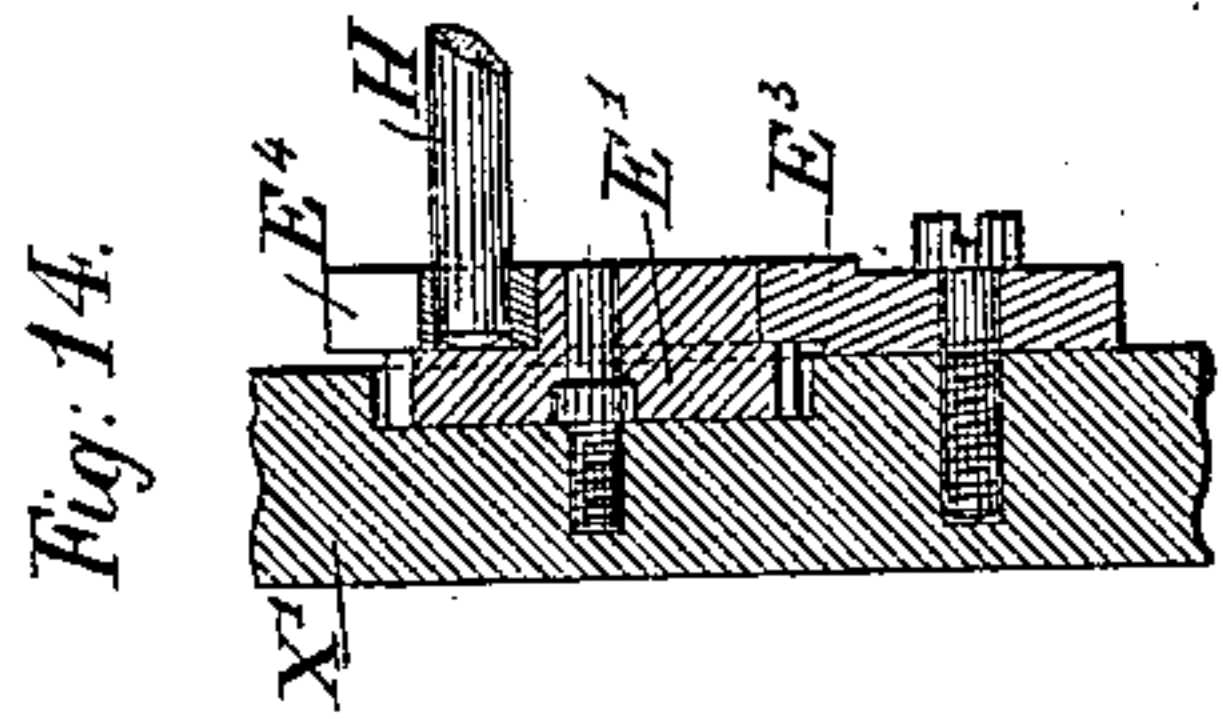
(No Model.)

8 Sheets—Sheet 8.

J. REUSE.
CIGAR MACHINE.

No. 554,606.

Patented Feb. 11, 1896.



Witnesses:
Philip N. Tilden
Robert Everett.

Inventor.
Jean Reuse.
By James L. Norris
Atty.

UNITED STATES PATENT OFFICE.

JEAN REUSE, OF ENGHIEU, ASSIGNOR TO THE COMPAGNIE GÉNÉRALE POUR L'EXPLOITATION DES MACHINES À FABRIQUER LES CIGARES (BREVETS J. REUSE) SOCIÉTÉ ANONYME, OF BRUSSELS, BELGIUM.

CIGAR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 554,606, dated February 11, 1896.

Application filed January 10, 1895. Serial No. 534,483. (No model.) Patented in Belgium October 24, 1894, No. 112,413; in France October 24, 1894, No. 235,405; in England October 26, 1894, No. 20,529; in Luxemburg November 14, 1894, No. 2,166; in Italy November 28, 1894, XXIX, 37,611, LXXIII, 435; in Portugal November 30, 1894, No. 1,889, and in Spain December 17, 1894, No. 16,474.

To all whom it may concern:

Be it known that I, JEAN REUSE, a Belgian subject, residing at Enghien, Belgium, have invented new and useful Improvements in Machines for the Manufacture of Cigars, (for which I have obtained Letters Patent in Belgium, No. 112,413, dated October 24, 1894; in France, No. 235,405, dated October 24, 1894; in Spain, No. 16,474, dated December 17, 1894; in Great Britain, No. 20,529, dated October 26, 1894; in Portugal, No. 1,889, dated November 30, 1894; in Luxemburg, No. 2,166 dated November 14, 1894, and in Italy, No. 37,611, XXIX, No. 435, LXXIII, dated November 28, 1894,) of which the following is a specification.

My invention relates to cigar-making machines comprising a combination of mechanism the action of which somewhat resembles the manual operations of a cigar-maker and characterized by the use of manipulators formed of two pairs of jaws which give to the fillings or inside of the cigar usually formed of tobacco-leaves the shape desired for the reception of the covering-leaf and subsequently wrap the latter around the fillings.

The object of my improvements is to simplify and strengthen the machine and to facilitate regulation or adjustment thereof.

My said invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the machine, the plate upon which the workman places the covering-leaf for introducing it within the manipulators being removed. Fig. 2 is a transverse section taken on the line A B, Fig. 1, looking toward the fly-wheel. Fig. 3 is a corresponding section taken on the line A B, Fig. 1, looking toward the crank-handle. Fig. 4 is an elevation of the fly-wheel, showing the stop mechanisms with which it is furnished. Fig. 5 is a side elevation of the machine, taken from the crank-handle side. Fig. 6 is a plan view of the machine, partly in section, taken on the line F G, Fig. 1. Fig. 7 is a section taken on the line D E, Fig. 6, looking toward the crank-handle. Fig. 8 is

similar section taken on the line C D, Fig. 6. Figs. 9 and 10 are detached views of the manipulators, Fig. 10 showing their position at the moment of stoppage of the machine. Fig. 11 is a transverse section of part of the machine taken on the line H I, Fig. 1, looking toward the crank-handle. Fig. 12 is a detail sectional view taken on the line A² B², Fig. 11. Figs. 13 and 14 are similar views taken on the lines C² D² and E² F², Fig. 11, respectively. Fig. 15 is an enlarged plan view of the knife *z* and parts connected therewith.

In the said figures X X' are the side standards or uprights of the machine, connected together by tie-rods Z Z Z. B is the main shaft, carrying the fly-wheel C and driven by the pulley A through the clutch composed of members A' A². D D' are two toothed wheels mounted on the shaft B contiguously to the inner side of the uprights X X'. E E are two toothed wheels gearing with the wheel D, and E' E' are two corresponding toothed wheels gearing with the wheel D'. H H' are two spindles or rods parallel to the shaft B. The ends of the spindle H' rest in cavities formed in the rear wheels E E', and the ends of the spindle H, which are furnished with bearings, rest in cavities formed in trunnions or journals E² E² on the front wheels E E'. The trunnions or journals E² E² of the front wheels E E' turn within circular collars E³ E³ fixed to the standards X X'. In the upper part of each of the collars E³ E³ is cut a slot or opening E⁴, which forms a prolongation of the cavity in the trunnion or journal E² when the motion of the shaft B and parts actuated thereby is stopped, as hereinafter described.

I I³ and I' I² are two pairs of guides oscillating, respectively, upon the pivots J J', carried by the uprights X X', each of which guides has a slot at its lower part. Before entering the cavities of the trunnions E² E² the spindle H passes through the slots of the guides I' I³, and in like manner the spindle H' passes through the slots of the guides I I². Consequently when the spindles H H' are carried

around by the wheels $E E'$ they cause the guides $I I' I^2 I^3$ to oscillate upon their pivots $J J'$.

K is a cam-plate carried by the pivot J , and K' is a similar plate carried by the pivot J' . These plates are formed with a large opening, into which freely pass the ends of two spindles or rods $M M'$, parallel to the rods $H H'$, which pass through and rest in the guides $I I' I^2 I^3$, from which they receive oscillatory motion.

The spindles $M M'$ serve as pivots for the levers $N N' N^2 N^3$, the short upper arms of which carry the manipulators $n n' n^2 n^3$, respectively, while their lower ends are of the form of bent forks, between the branches of which forks the rods $H H'$ slide. These levers and manipulators are arranged in two pairs, one comprising the levers N and N' , mounted on the spindle M and engaged with the rod H , and the other comprising the levers N^2 and N^3 , mounted on the spindle M' and engaged with the rod H' .

Each manipulator consists of a plate, the acting upper part of which is cut into a series of tongues hollowed on the inner side more or less deeply in such a manner that their combination forms a mold for the cigar. The spaces between the manipulator-tongues are so formed and disposed that the tongues of one pair of manipulators enter the spaces of the other pair, and vice versa.

The lower arms of the levers carrying the manipulators and the slots therein are of such form that the combination of the continuous circular motion of the rods $H H'$ in the slots of the said arms with the alternate curvilinear motion of the spindles $M M'$ constituting the fulcrum of the said levers produces alternate opening and closing of each pair of jaws or manipulators. Moreover the closing motion of each pair coincides with the upward motion of one of the manipulators and the downward motion of the other. Hence, when one of the pairs of manipulators opens the other closes and clasps the fillings, causing them to turn slightly upon their own axis while they are being held, the open pair then closing gradually in order in its turn to clasp the fillings as the first pair is opening and continue the rotation. The fillings are thus continually rotated upon their own axis until the cigar is finished.

The spindles $M M'$ extend beyond their supports $I I' I^2 I^3$ as far as an opening in the standards $X X'$, (see Fig. 12,) into which a plate X^2 is inserted from the outside, the said plate being loosely lodged in the thickness of the standards between the ends of the spindles $M M'$ and a plate X^3 which covers the outer end of the opening in the standards. Through each of these plates X^2 and X^3 are screwed two adjustable screws $X^4 X^5$, each of which can be screwed against one of the lateral extremities of the plate X^2 . This permits of accurate adjustment of the longitudinal position of the spindles $M M'$ and of the ma-

nipulators which they carry. For instance, if the screw X^5 of the standard X be turned in the direction necessary to cause it to advance the plate X^2 in the said standard will be pushed against the spindle M' , which it will push in its turn so as to bring the other end of the said spindle M' close to the standard X' . If on the contrary the screw X^5 of the standard X be turned in the direction necessary to withdraw it, and the screw X^5 of the standard X' be advanced, the spindle M' will be pushed toward the opposite standard X . By acting on the screws $X^4 X^5$ the other spindle M and the manipulators which it carries may in like manner be brought close to one or other of the standards. The openings in the standards $X X'$ serve moreover to admit of the spindles $M M'$ and the manipulators being removed.

O is a crank-handle secured to one end of a shaft O' , carrying at the other end an eccentric O^2 , with which is engaged one end of a lever O^3 oscillating upon a pivot O^4 , the other end of which lever has the shape of a fork between the branches, of which the upper part of the driving-pulley A turns. The said pulley is mounted on a sleeve A' provided with teeth forming one-half of a clutch, the other half, A^2 , of which is keyed on the driving-shaft B .

When the crank-handle O is turned one-quarter of a revolution by pulling it and raising it toward the front of the machine, the eccentric O^2 follows the same motion and the top of the lever O^3 by sliding in the helicoidal groove formed in the periphery of the said eccentric is brought sufficiently near to the upright X of the machine for the fork at its other end to draw back the pulley A while receding from the upright X , thus throwing the machine out of gear.

At the moment of disconnection of the pulley and stoppage of the machine, the rear pair of manipulators, $N^2 N^3$, is open and the front pair, $N N'$, is closed. The following is a description of the mechanism by which the manipulators $N N'$ may be also opened for removing the finished cigar.

Upon the shaft O' are keyed two cams $k k'$ a portion of the periphery of each of which is eccentrically cut away and each of which has a notch k^2 formed in it at one end of the cut-away part of its periphery while the other end forms a shoulder, which, when the machine is working, bears against a stud k^3 at the top of the inner side of the plates $K K'$. When the crank-handle O is turned in order to disconnect the pulley A and to stop the machine, the cams $K K'$ turn likewise, and when the uncut-away part of their periphery which forms a shoulder beyond the notch k^2 meets the studs k^3 on the plates $K K'$, motion is imparted thereto by the said cams and the said plates are caused to oscillate, their upper ends moving toward the front of the machine. In the front of the lower part of the plates $K K'$ is formed a slot k^4 , the lower part of which slants upward and the upper part is con-

centric to the axis of the said plates. The opening of this slot at the moment of stoppage of the machine is exactly in front of the rod H, the front side of the same slot forming a projection k^5 toward the bottom of the machine. When the plates K K' oscillate toward the front of the machine, these projecting parts at the front of the slots k^4 strike against the rod H and cause it to enter the said slots and lift it out of the cavities in the trunnions $E^2 E^2$ within the openings $E^4 E^4$ of the collars $E^3 E^3$ until the said rod arrives at the top of the lower part of the said slots. As the rod H is raised, it ascends within the slots of the lower arms of the levers N N' of the pair of manipulators $n n'$, the opening of which to the full extent is thus effected as soon as the spindle arrives at the top of the said slots. In that part of the periphery of the plate K' which is at the rear of the machine, is formed a large notch K^6 , the lower side of which, when the rod H arrives at the top of the lower part of the slots k^4 , is brought against a stud q^2 , fixed to the side of a lever q' , secured to a sleeve q , carrying a pair of levers $Q' Q'$, which extend forward under the cigar between the tongues of the manipulators and serve to remove therefrom the finished cigar. If the turning of the handle O be continued until the rod or spindle H reaches the extremity of the upper part of the slots k^4 , the plate K', continuing its oscillatory motion, raises the stud q^2 and the lever q' and causes backward turning of the sleeve q , which lifts the levers $Q' Q'$ out of the manipulators.

The sleeve q has a longitudinal rib formed on it which permits of variation of the opening between the removing-levers $Q' Q'$. One or both of these is or are so mounted upon the sleeve q as to be able to slide thereon, and is or are secured in position by means of a tightening-screw. When the plate K' is brought back by the return motion of the crank-handle, a small spring q^3 carried by a stud on the inner side of the standard X lowers the stud q^2 , the lever q' and the extractor-levers $Q' Q'$ at the same time the rod H is brought back to the top of the lower part of the slots $k^4 k^4$, and afterward it is lowered to the bottom of the said part, and when the plates K K' return to their original position the ends of the said rod H rest again in the trunnions $E^2 E^2$ of the wheels E E, being entirely freed from the plates K K'.

When the pulley A is disconnected it is important that the fly-wheel C and shaft B be instantaneously stopped. For this purpose in the circular recess formed on the outer face of the fly-wheel C by the rim c' is placed a disk c^2 loosely mounted on the shaft B. In two diametrically-opposite points of the face of this disk are fixed two pins c^3 . These pins c^3 each project at one end from the outer face of the disk c^2 , and their projecting ends are connected to the ends of spiral springs c^4 , the other ends of which springs are connected to the inner face of the rim c' . The other ends

of the said pins c^3 pass through curved slots c^5 formed in the fly-wheel and project from the inner side of the latter. In front of each of the pins c^3 is a tumbler c^6 turning on a pin c^7 between two stops $c^8 c^9$ on the inner side of the fly-wheel C. When the pulley A is disconnected the outer edge of the fork o^3 engages with one or other of the tumblers c^6 and lifts it as far as the stop-piece c^9 . It then comes into contact with the projecting part of the pin c^3 , which it pushes along the slot c^5 , extending the spring c^4 until the fly-wheel stops. When pushing the pin c^3 the edge of the fork o^3 frees the tumbler c^6 , which in falling upon the stop c^8 comes behind the said fork and thus prevents the fly-wheel from turning back under the action of the spring. When the clutch of the pulley A is connected the fork o^3 as it moves toward the standard X passes from between the tumbler c^6 and the pin c^3 , and the latter is brought to its normal position by the spring c^4 .

z is a small knife which removes the excess of tobacco from the tip of the fillings. The said knife is secured to one arm of a lever z turning on the shaft Q. In the other arm z^2 of this lever a slot is formed, into which passes the spindle M' of the manipulators, which travels in the said slot and communicates an upward and downward reciprocatory motion to the lever z' and to its knife z . In order that this knife may cleanly cut off the tobacco issuing from the tip-former I fix against the outer end of the fixed half of the said tip-former Y two plates $z^3 z^4$, one of which, z^3 , interposed between the plate z^4 and the wall of the tip-former Y, extends only to the front of the knife, while the other, z^4 , extends as far as the rear end of the said knife. The plate z^3 has the same thickness as the knife, so that when the latter is lowered between the plate z^4 and the wall of the tip-former it has a shearing action and cuts off the excess of tobacco neatly. The lever carrying the knife z is formed of two parts z' and z^5 , which parts may be either brought together or separated by means of a screw z^6 in order to accurately regulate the position of the knife, which is fixed by a screw z^7 passed through a slot in the part z^5 and screwed into the part z' .

The tip-former is formed of a fixed part y^2 and a movable part y^3 , which are both hollowed. The fixed hollowed part y^2 rests on one of the supports V^3 of the gum-pump V. Its position may be accurately regulated by means of a screw Y^3 , which permits of its being advanced and withdrawn, and it is secured in position by means of a screw Y^4 passed through a slot in the part y^2 and screwed into the support V^3 . The hollowed part of the fixed part y^2 of the tip-former is about one centimeter in length. The front of the fixed part y^2 extends beyond the front manipulators in order to allow sufficient width for the mouth of the conduit v' , which feeds the gum to the tip of the cigar.

The movable hollowed part y^3 of the tip-

former is fixed to a lever b oscillating upon the shaft O' and pressed toward the rear of the machine by a spring b' fixed to the tie-rod Z . The said lever b is formed of two
 5 pieces, b and b^2 , connected together by a screw b^3 , which allows of vertical adjustment of the movable part y^3 of the tip-former, and the vertical position thereof may be fixed by means of a screw b^4 .

10 R is a lever working on a pivot R' fixed in the upright X' , and the rear end of which carries one end of a small rod r , the other end of which is fixed in the end of the rear arm of a lever e oscillating upon the shaft Q .
 15 The front arm of the said lever extends as far as under the movable part y^3 and serves to secure the said movable part, as shown in Fig. 8. The said lever is made of two pieces connected together by a screw e^3 , and the po-
 20 sition of the front arm e^2 may be adjusted relatively to the movable half of the tip-former by means of a screw e^4 passed through a groove formed in the front arm and screwed into the rear arm.

25 By pressing on the front end of the lever R its rear arm is raised and the front arm of the lever e descends sufficiently to disengage from the back of the movable part of the tip-former. The spring b' then pushes the
 30 lever b , piece y^3 , and the guide d toward the back of the machine until the guide d meets the rod H' , against which it is held by the spring b' . The guide d is pivoted at d' to the piece b , and its upper extremity has a ver-
 35 tical slot formed in it, by which it engages freely over a small screw b^5 screwed in the piece b . The rod H' in rotating slides against the tail of the guide d , and the latter is alter-
 40 nately pushed forward by the rod H' and brought back by the spring b' , thus communicating to the lever b and movable part y^3 an oscillatory motion on the shaft O' . The
 45 position of the guide d relatively to the pin H' which causes its forward stroke is regulated by means of milled nuts $d^2 d^2$ on the screw b^5 .

V is the gum-pump, V^2 is the piston and V' the rod thereof. A small crank-handle V^4 secured to the end of the rod V' allows the piston
 50 V^2 to be moved back when it is required to recharge the pump with gum.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cigar-making machine in which two
 55 crossed pairs of jaws are used for shaping the fillings and wrapping the outer leaf thereon, the mechanism for opening one pair of jaws while the other is open and the machine is at rest characterized by the combination with
 60 the pair of jaws NN' which is closed at the time of stoppage, of a spindle H passing through slots in the lower part of the said jaws, toothed wheels EE' driven by the motor-shaft and carrying trunnions $E^2 E^2$ having recesses formed
 65 in them for receiving the ends of the spindle H , collars or rings $E^3 E^3$ fixed to the standards of the machine and in which the said trun-

nions turn, the said collars or rings having an opening corresponding to or coinciding with the recesses in the trunnions when the ma-
 70 chine is stopped and oscillating plates KK' each having an eccentric slot formed in the lower part of its periphery into which engages the spindle H substantially as hereinbefore described and illustrated in the accompanying
 75 drawings.

2. The mechanism for throwing out of gear and stopping the machine characterized by the combination of a wheel O^2 having a heli-
 80 coidal groove in its periphery mounted on a shaft actuated by a crank-handle, a lever O^3 oscillating on a pivot O^4 the upper arm of which lever is engaged in the said helicoidal groove and the lower arm of which lever is
 85 furnished with a fork between the branches of which turns the upper part of the driving-pulley, a clutch one half of which is carried by the said driving-pulley and the other half
 90 of which is keyed on the driving-shaft of the machine, a fly-wheel having curved slots c^5 formed in it, a disk c^2 loosely mounted upon the driving-shaft and located in the outer side
 95 of the said fly-wheel, pins c^3 fixed across the said disk and passing through the curved slots in the fly-wheel and projecting from the inner face thereof, springs c^4 one end of which
 100 is attached to the outer extremity of the said pins and the other end of which is fixed to the flange of the fly-wheel and tumblers c^6 turning against the inner face of the fly-wheel between
 105 stops c^8, c^9 substantially as described and illustrated in the accompanying drawings.

3. In a cigar-making machine in which a tip-former is used having a movable part b and a
 105 fixed part Y , means for adjusting vertically the said movable part of the tip-former characterized by the combination with the said
 110 movable part b of a piece b^2 turning upon the shaft O' , an adjusting-screw b^3 passing through the piece b^2 and the end of which is screwed into the part b and a tightening-screw
 115 b^4 passing through an extension of the part b and the end of which is screwed into the piece b^2 upon the screw b^3 substantially as hereinbefore described and illustrated in the accom-
 120 panying drawings.

4. In a cigar-making machine in which a tip-former is used having a movable part b and a
 120 fixed part Y , means for adjusting horizontally the position of the said fixed part of the tip-former characterized by the combination with
 125 the said fixed part Y of a support V^3 on which it rests, an adjusting-screw Y^3 passing through an upward extension of the said support V^3 and the end of which is screwed into the back
 130 of the fixed part Y and a tightening-screw Y^4 passing downward through the said part Y and the end of which is screwed into the said support V^3 substantially as hereinbefore described and illustrated in the accompanying
 135 drawings.

5. In a cigar-making machine in which a tip-former is used having a movable part b and a
 140 fixed part Y , the combination with the said

movable part b of a guide d pivoted thereto at d' and having a vertical slot formed in its upper extremity, a screw b^5 passing freely through the said slot and screwed in the piece 5 b , and milled nuts d^2 d^2 on the said screw b^5 substantially as hereinbefore described and illustrated in the accompanying drawings for the purpose specified.

10 6. In a cigar-making machine in which a tip-former is used having a movable part b and a fixed part Y , the combination with the said movable part b of a lever e made of two pieces,

a screw e^3 connecting together the said two pieces, an extension of the front piece of the said lever overlapping the back piece thereof 15 and a screw e^4 passed through a groove in said extension and screwed into the back piece of the said lever substantially as hereinbefore described and illustrated in the accompanying drawings for the purpose specified.

JEAN REUSE.

Witnesses:

H. T. E. KIRKPATRICK,
J. S. KIRKPATRICK.