

No. 621,349.

Patented Mar. 21, 1899.

M. KIRSHNER.
CIGARETTE MACHINE.

(Application filed Jan. 14, 1898.)

(No Model.)

5 Sheets—Sheet 1.

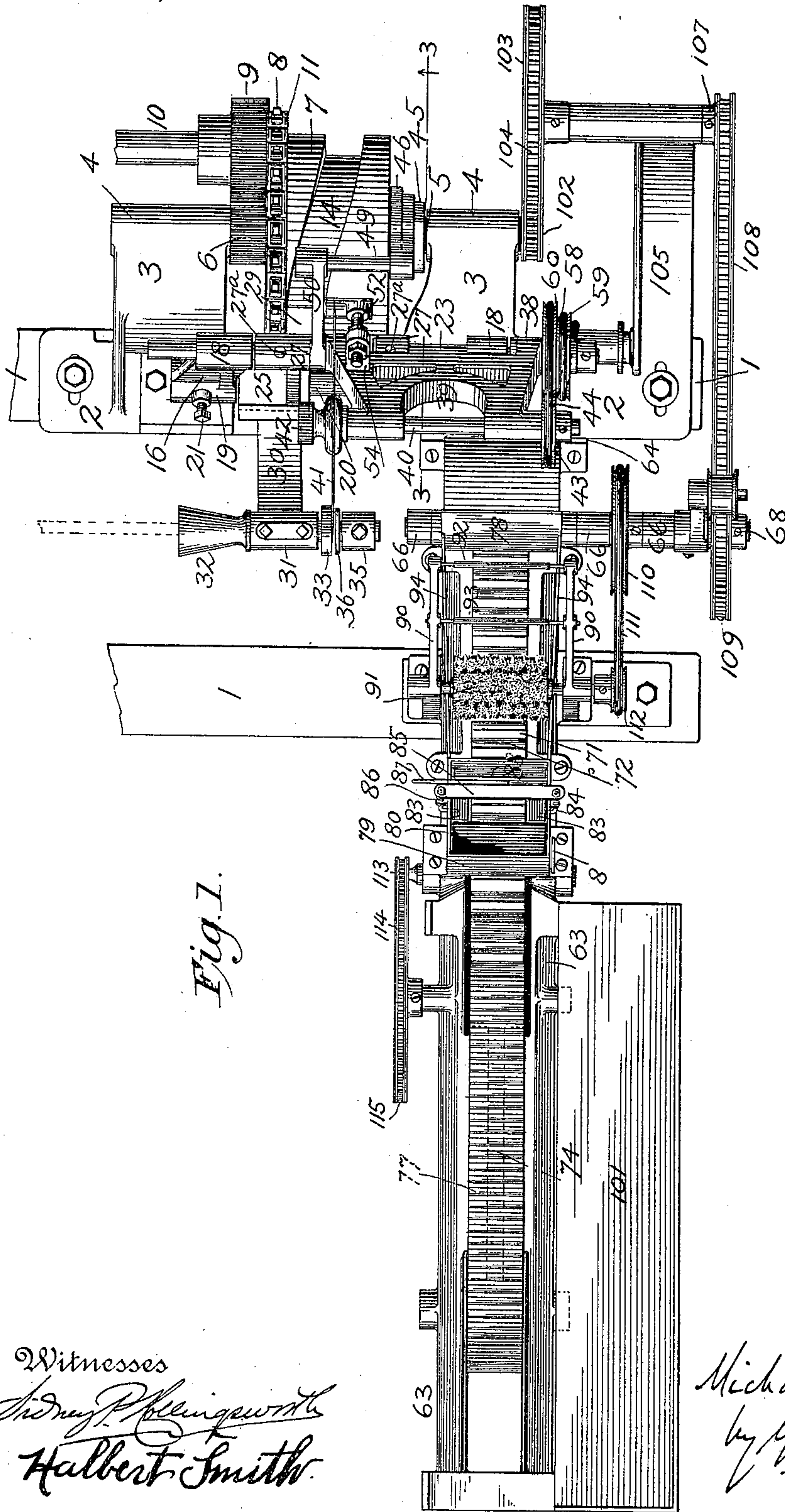


Fig. 1.

Witnesses
Sidney P. Klingworth
Halbert Smith

Inventor
Michael Kirshner
by *Att. W. J. Ward*
Attorneys.

No. 621,349.

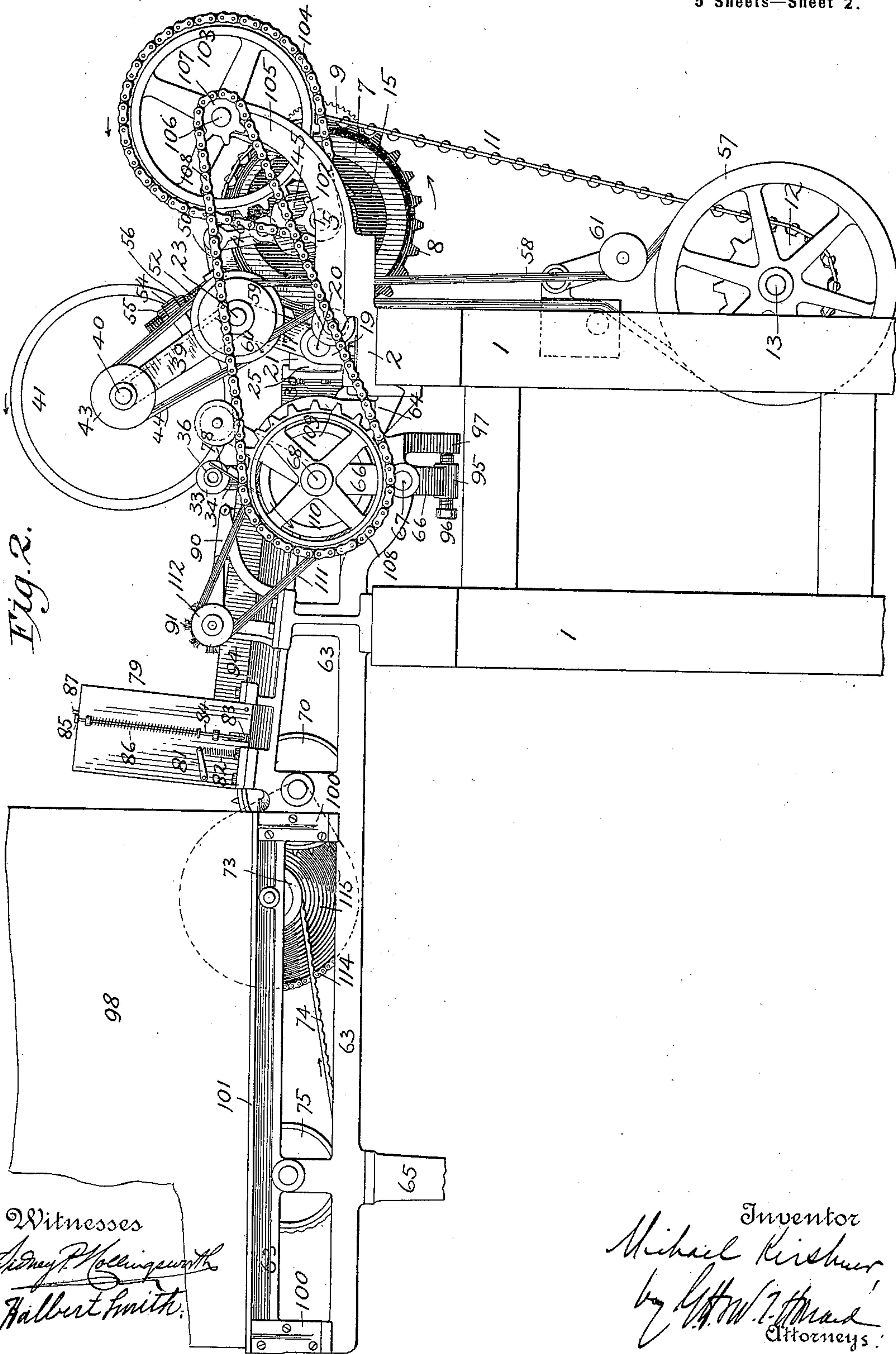
Patented Mar. 21, 1899.

M. KIRSHNER.
CIGARETTE MACHINE.

(Application filed Jan. 14, 1898.)

(No Model.)

5 Sheets—Sheet 2.



Witnesses
Samuel P. Hollingsworth
Halbert Smith.

Inventor
Michael Kirshner
by *W. J. Thomas*
Attorneys.

No. 621,349.

Patented Mar. 21, 1899.

M. KIRSHNER.
CIGARETTE MACHINE.

(Application filed Jan. 14, 1898.)

(No Model.)

5 Sheets—Sheet 3.

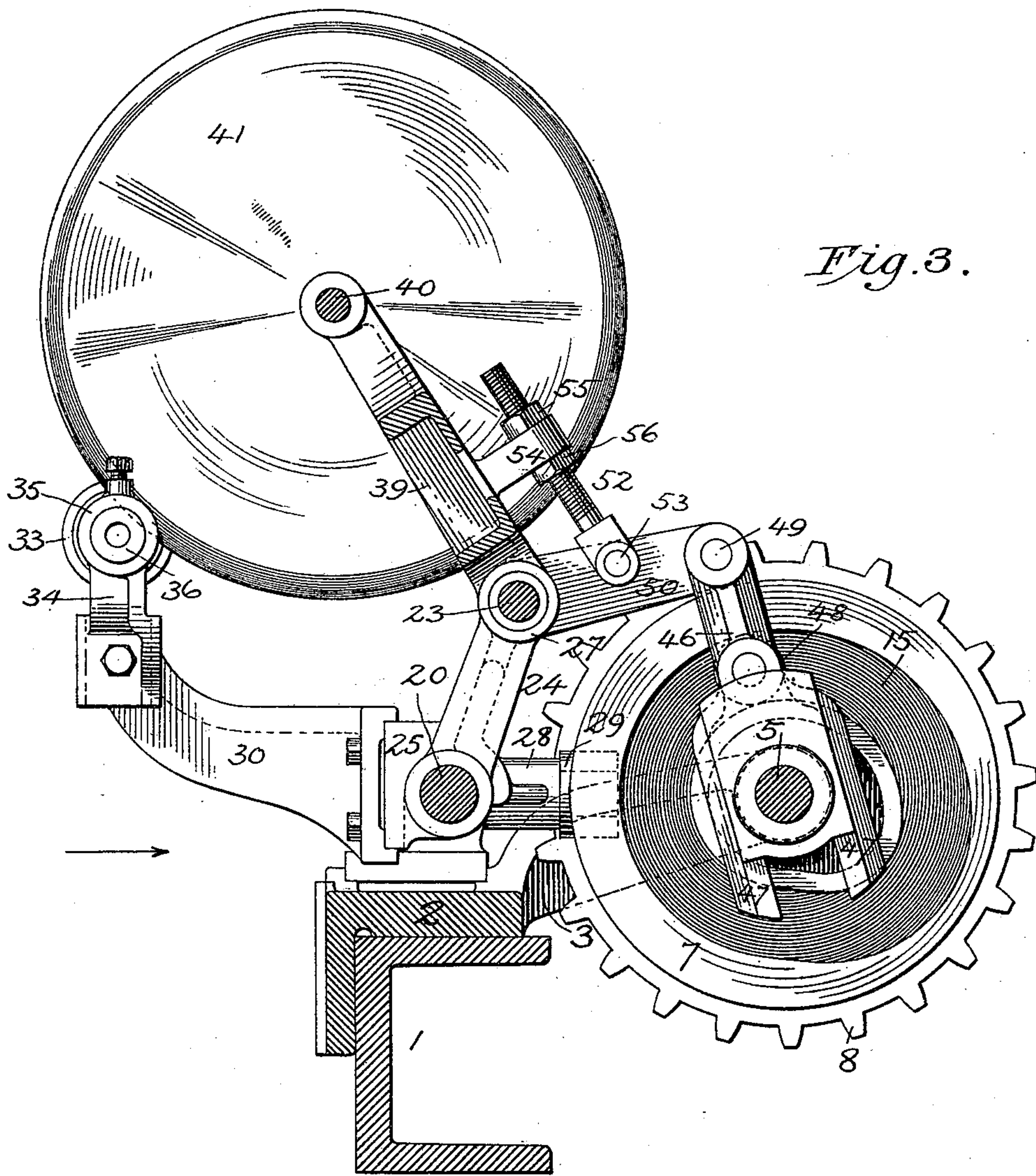


Fig. 3.

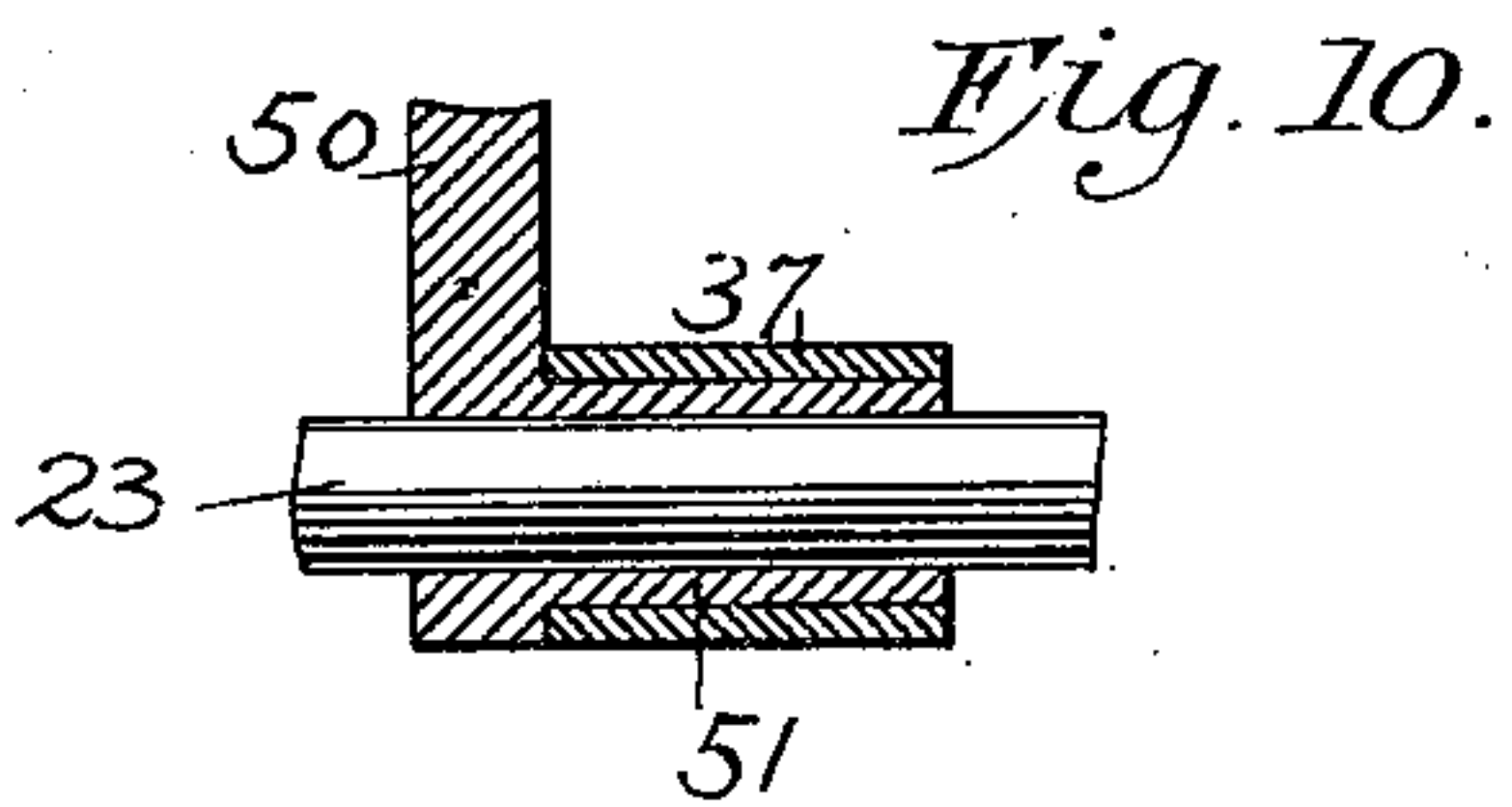


Fig. 10.

Witnesses
 Sidney P. Mollingsworth
 Halbert Smith

Inventor
Michael Kirshner,
by Gt W. F. Throckmold
Attorneys.

No. 621,349.

Patented Mar. 21, 1899.

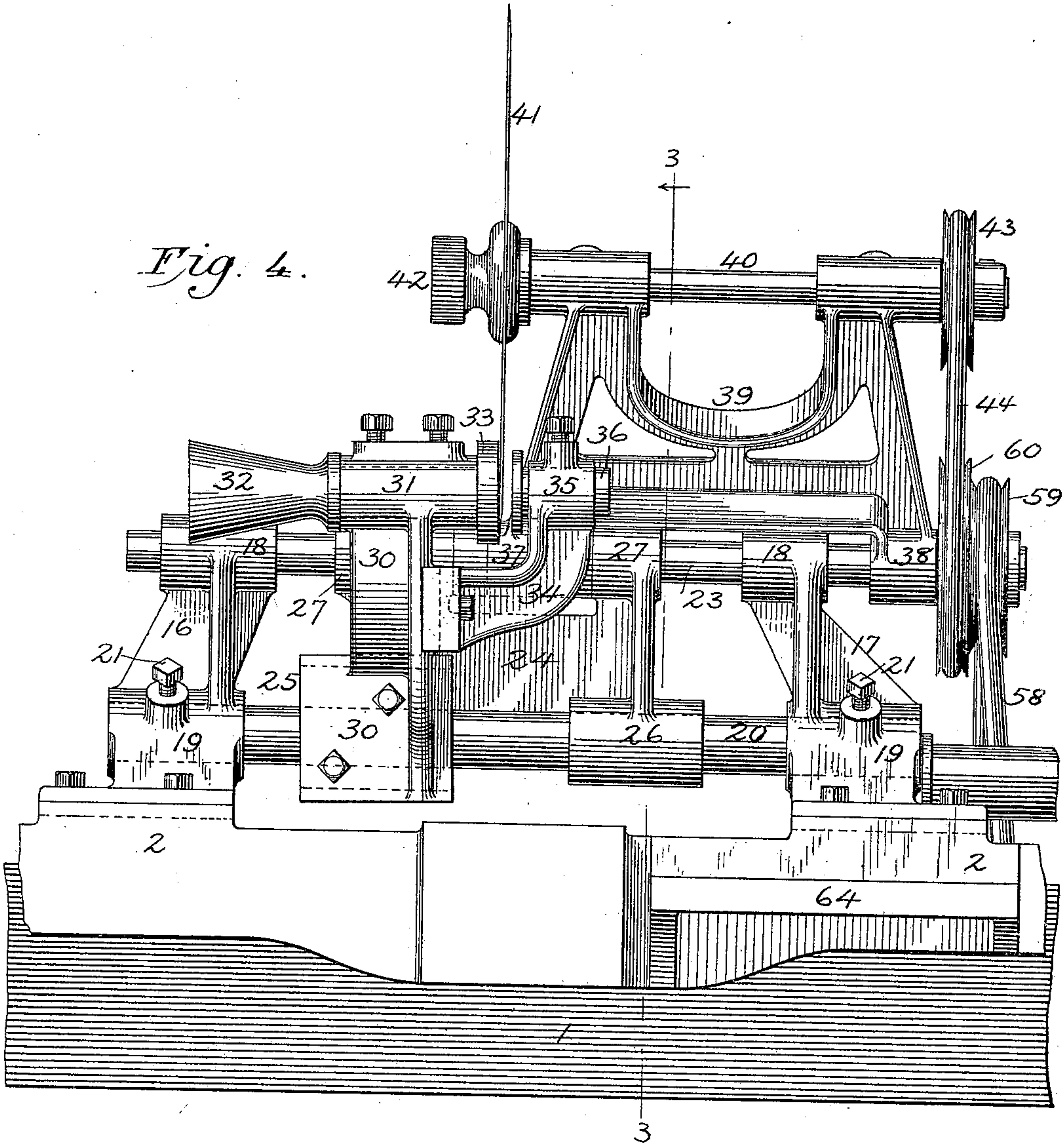
M. KIRSHNER.
CIGARETTE MACHINE.

(Application filed Jan. 14, 1898.)

(No Model.)

5 Sheets—Sheet 4.

Fig. 4.



Witnesses
Henry F. Hellingworth
Halbert Smith

Inventor
Michael Kirshner
by *W. W. T. Thorne*
Attorneys

No. 621,349.

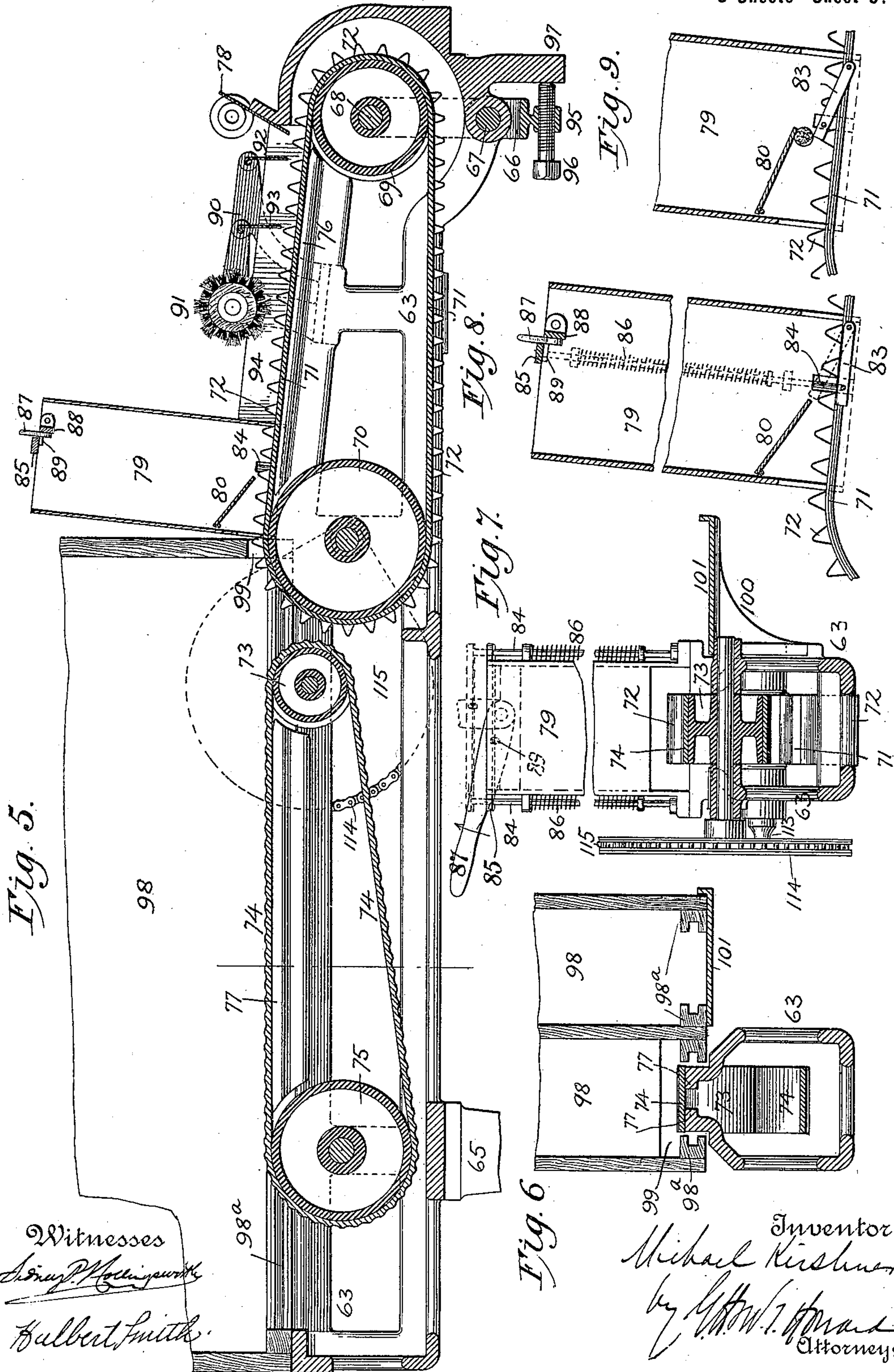
Patented Mar. 21, 1899.

M. KIRSHNER.
CIGARETTE MACHINE.

(Application filed Jan. 14, 1898.)

(No Model.)

5 Sheets—Sheet 5.



Witnesses
Samuel P. Hollingsworth
Halbert Smith

Inventor
Michael Kirshner
by *Wm. T. Thomas*
Attorneys

UNITED STATES PATENT OFFICE.

MICHAEL KIRSHNER, OF SALEM, VIRGINIA.

CIGARETTE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 621,349, dated March 21, 1899.

Application filed January 14, 1898. Serial No. 666,636. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL KIRSHNER, of the town of Salem, in the county of Roanoke and State of Virginia, have invented certain
5 new and useful Improvements in Cigarette-Machines, of which the following is a specification, reference being had to the accompanying drawings and to the numerals of reference marked thereon.

10 My invention relates to a continuous or end-wise moving filler machine, in the use of which tobacco of the variety known as "long cut" is fed onto a longitudinally-moving belt and carried thereby through devices by the in-
15 strumentality of which it is formed into a rod which is inclosed within a wrapper, preferably of paper, the overlapping edges of the wrapper being secured against opening.

One object of my invention is to provide
20 means for cutting the cigarette rod thus formed into required lengths in a manner more efficient and rapid than heretofore practiced, and this I do by so constructing and ar-
25 ranging the mechanism for operating and controlling the knife that a higher speed and smoother action may be imparted thereto without undue friction to the rapidly-reciprocating parts of the mechanism.

Other important features of my invention
30 have been suggested by the following facts: In the manufacture of cigarettes by machines of the class above mentioned it has been customary to arrange a chute at the delivery end of the machine, into which the completed cig-
35 arettes fall as they are severed from the cigarette rod. From this chute the cigarettes drop promiscuously into a box or other receptacle, the result being that a number are so marred by breaking, crumpling, and other-
40 wise as to be unsalable. Furthermore, under this method of collecting the cigarettes there is great loss of tobacco, which is shaken from the individual cigarette as it falls from the cutter to the chute and thence to the box or
45 receptacle. Again, as heretofore practiced, when the cigarettes are to be boxed or put up into merchantable packages the attendant whose duty it is to collect the cigarettes from the machine often gathers them up from the
50 box or receptacle with both hands and without care. This treatment bends or breaks a number of cigarettes, causing additional loss.

To overcome these objections and at the same time facilitate the operation of packing by laying the cigarettes in regular order, I pro-
55 vide a simple and positive device for carrying the cigarettes from the cutting mechanism to a collecting-box of suitable size and construction and systematically laying them therein in rows. 60

In the fuller description of the several features of my invention which follows reference is made to the accompanying drawings, in which—

Figure 1 is a plan view of my invention se-
65 cured in place on the delivery end of a cigarette-machine, the collecting-box being removed. Fig. 2 is an elevation of the same with the collecting-box in place. Fig. 3 is a cross-section, on enlarged scale, through the
70 cutting mechanism on the line 3 3 of Fig. 1. Fig. 4 is an elevation of the cutting mechanism viewed in the direction indicated by the arrow in Fig. 3. Fig. 5 is a longitudinal sec-
75 tion through the collecting mechanism. Figs. 6 and 7 are cross-sections on the lines 6 6 and 7 7, respectively, of Fig. 5. Fig. 8 is a section through the magazine on enlarged scale. Fig. 9 is a similar view showing the parts in a
80 different position. Fig. 10 shows a detached detail.

Similar numerals of reference indicate similar parts in the respective figures.

To the main frame 1 of a cigarette-machine, preferably of the Bonsack type, and at the
85 delivery end thereof, is bolted a plate 2, to which the various features of my invention are wholly or partly secured. Near each end of the plate 2 and by choice cast therewith is a bracket 3, Fig. 1, each bracket extending
90 from the same side of the plate and terminating in a bearing 4. In the two bearings so formed is journaled a shaft 5, carrying a gear-wheel 6 and a cam-wheel 7, keyed or
95 otherwise fixed thereto, Figs. 1 and 2. On the periphery of the cam-wheel 7 at one side is a sprocket-rim 8, integral therewith or se-
cured thereto, as desired. Engaged with the gear-wheel 6 is a gear-wheel 9 on the main
100 driving-shaft 10, Fig. 1, of the cigarette-machine, through the medium of which shaft all the movable parts of my invention are driven. A driving-chain 11 passes around the sprocket-rim 8, downwardly to and around

a second sprocket-wheel 12, Fig. 2, fixed to a shaft 13, mounted in bearings secured to the main frame of the cigarette-machine. By means of the shaft 13 the rotary knife is driven, as hereinafter described. The cam-wheel 7 has formed in it two cam-grooves, one, 14, on its periphery, Figs. 1 and 3, and one, 15, on the side opposite the sprocket-rim 8. Bolted to the plate 2, between the brackets 3, and extending upwardly at an angle are two brackets 16 17, Fig. 4, each having a bearing 18 at its upper end and a socket 19 at the bottom near its attachment to the plate 2. A rod 20 extends from one of the sockets 19 to the other and is secured therein by the bolts 21, while through the bearings 18 a shaft 23 is adapted to slide.

Mounted on the rod 20 is a reciprocating frame 24, having bearings 25 26 on its lower edge, which slide on the rod 20. The upper part of the frame is formed into sockets 27, through which passes the shaft 23, secured in the sockets by means of screws 27^a, as seen in Fig. 1. From one side of the bearing 25 projects a stud 28, Fig. 3, on the end of which is a roller 29 in engagement with the cam-groove 14 in the periphery of the cam-wheel 7. The rotation of the cam-wheel will thus cause the frame 24 to reciprocate on the rod 20 and the shaft 23 to slide in the bearings 18. Bolted to the bearing 25, opposite the stud 28, is an arm 30, carrying the holder for supporting the cigarette rod while being cut. This arm curves backwardly and upwardly, as shown in Figs. 3 and 4, and ends in a socket 31, which gives support to the funnel 32 and ledger-plate 33, held in the socket by bolts, as shown, and which are perforated for the passage therethrough of the cigarette rod. Fastened to the side of the arm 30 is a bracket 34, the upper end of which is formed into a socket 35 for carrying the cigarette-guide 36, the latter having a perforation in line with that in the ledger-plate, as usual. A bolt secures the cigarette-guide in its socket.

Pivoted on the shaft 23 by suitable bearings 37 38 is a frame 39, Figs. 3 and 4, in the upper end of which a shaft 40 rotates in bearings. The shaft 40 carries on one end the flat disk knife 41, which is secured thereon by the hand-nut 42. The face of the circular knife next the ledger-plate 33 is flat, while the opposite face is beveled to form a sharp cutting edge. The other end of the shaft carries a pulley 43, over which passes a belt 44 for rotating the knife.

A block 45, Figs. 1 and 2, through which the cam-shaft 5 passes and in which it turns, is placed near the side groove 15 of the cam-wheel 7, projecting partly within an axial opening formed therein. A slide 46, whose lower forked end 47, Fig. 3, straddles the block 45, lies closely to the cam-wheel 7 and has pivoted to it at an intermediate point a roller 48, which enters the side cam-groove 15. To the upper end of the forked slide 46 is a fixed pin 49, projecting over the cam-wheel 7 and

pivoted to an arm 50, journaled on the shaft 23, the pin 49 being sufficiently long to permit the arm 50 to slide lengthwise thereon. The arm 50, Fig. 10, has a hub 51 seated as a bushing in the bearing 37. As thus arranged the arm 50 can be rocked independently of the shaft 23 and the knife-frame 39. A screw 52, having an eye on one end, is pivoted to a pin 53 on the arm 50 about midway of its length. This screw passes freely through a hole in a lug 54, projecting from the knife-frame 39, and is secured thereto by means of two adjusting-nuts 55 56 on opposite sides of the lug, as shown in Fig. 3. The construction is such that the rotation of the cam-wheel 7 will, through the side cam-groove 15 and roller 48, cause the forked slide 46 to reciprocate longitudinally and rock the arm 50 and, through the medium of the screw connection 52, the knife-frame 39, the knife being alternately advanced to sever a cigarette from the cigarette rod and drawn back to permit said rod to be fed forward for a new cut.

The object of the screw connection between the arm 50 and the knife-frame 39 is to admit of the correct adjustment of the cutting edge of the knife with relation to the cigarette rod, so that it will just pass through the rod and no more. This adjustment is especially desirable, as the knife is gradually reduced in diameter by sharpening and must therefore be moved nearer the cigarette rod as it is worn away.

The shaft 13, driven by the sprocket-wheel 12, has secured to it a pulley 57, around which a belt 58 passes up to a smaller pulley 59, turning loosely on the shaft 23, Fig. 2. A pulley 60, fixed to the pulley 58 and turning therewith, but of greater diameter, is connected by the belt 44 to the small pulley 43 on the knife-shaft 40, as hereinbefore described. By this arrangement a rapid rotation is imparted to the knife. A tightener 61 keeps the belt 58 taut and prevents it from slipping on the pulleys.

Heretofore it has been customary to allow the individual cigarette to fall after being severed from the cigarette rod into a chute or spout, by which it was conveyed to a box or other receptacle placed upon the floor. This has been found objectionable, as a considerable proportion of the cigarettes have been rendered unsalable by becoming broken, crushed, or otherwise disfigured as they fell into the receptacle and while being removed therefrom for the purpose of packing for the market. To overcome this objection, I secure to the main frame 1 of the cigarette-machine, a short distance below the delivery end of the cigarette-guide 36, a collecting device which extends rearwardly at a right angle to the main frame. The collecting device is described as follows:

A frame 63 is bolted at one end to the cigarette-machine frame 1 and to a bracket 64, extending horizontally from the plate 2, its opposite end being supported by a leg 63, ex-

tending to the floor. The frame preferably consists of two sides united at the bottom and ends. Bearings are formed on the sides in which turn pulleys carrying belts whereon the cigarettes are conveyed from the cutting mechanism to boxes in which they are collected and retained until removed for packing. A yoke 66 is pivoted at 67 to the frame 63 and carries in bearings on its upper end a shaft 68, on which is mounted a flanged pulley 69, adapted to revolve within the frame 63 at its inner end, as represented in Figs. 2 and 5. A second pulley 70 is journaled in the frame 63, and between the pulleys 69 and 70 extends an endless belt 71, having projections or teeth 72 on its outer surface of a length equal to the width of the belt, which is somewhat less than the length of a cigarette. This belt may be termed an "endless rack," and its use is hereinafter described. A small flanged pulley 73 is journaled near the pulley 70, around which passes a notched belt 74, extending to a larger pulley 75, mounted in the frame, as seen in Figs. 2 and 5. The upper stretches of the endless rack 71 and the notched belt 74 are prevented from sagging under the weight of the cigarettes or when elongated by use by projections 76 77, formed on the frame 63. The frame 63 curves around the pulley 69 to a point near the cigarette-guide 36, where it supports an inclined plate 78, which is adjacent to the opening through which the severed cigarettes are ejected and extends downwardly to the endless rack 71. As the cigarettes pass out of the cigarette-guide 36 they fall a short distance onto the inclined plate and roll thence upon the endless rack.

Fixed to the top of the frame 63, above the pulley 70, is an emergency-magazine 79, having a pivoted inclined bottom 80 extending forwardly from the rear side of the magazine for about one-half of its width. An arm 81, Fig. 2, secured to the pivot of the inclined bottom outside of the magazine, is connected to a spring 82, which tends to keep the inclined bottom at all times in its depressed position. Through the bottom of the magazine passes the endless rack 71, on each side of which within the magazine is a finger 83, pivoted to the side wall thereof. The forward end of each finger is connected by a rod 84, passing up through guides on the side of the magazine to a bar 85, extending across its top. Springs 86, Figs. 7 and 8, surround the rods 84 and serve to normally keep the fingers depressed, with their upper surfaces slightly below the base of the teeth 72 of the endless rack 71. To raise the fingers, any suitable means may be used; but I have shown a lever 87, pivoted to a cross-piece 88, from which projects a pin 89, passing under the cross-bar 85. When the lever is raised, the cross-bar is lifted, which through the rods 84 elevates the ends of the fingers to the position shown by dotted lines in Fig. 8.

Two brackets 90, screwed to the frame be-

tween the magazine and the inclined plate 78, support a rotary brush 91 and two swinging plates 92 93, Fig. 5, the purposes of which are hereinafter explained.

Between the inclined plate 78 and the magazine 79 extend two vertically-disposed guide-plates 94, one on each side of the endless rack 71. These guide-plates 94 are secured to the ends of the inclined plate 78, at which points they are separated a distance greater than the length of a cigarette, gradually converging toward the magazine, Fig. 1, where they stand apart about equal to such length. This construction serves to aline the cigarettes after they have reached the endless rack 71, so that they will certainly enter the magazine and subsequently the collecting-box.

The yoke 66, Figs. 1 and 5, which carries the pulley 69 and is pivoted in the frame 63 on the journal 67, extends below the said journal, where it is provided with a lug 95, through which a bolt 96 passes and bears upon an extension 97 of the frame 63. By turning the bolt 96 the proper tension of the endless rack can at all times be maintained.

Removably supported on the frame 63 behind the magazine 79 is the collecting-box 98, which extends from the magazine backward as far as desired. It may be made of any length by proportionately changing the length of the notched belt 74. The internal width of the box 98 is slightly greater than the length of a cigarette, and its bottom is open, except that a strip 98^a, Fig. 6, is provided on each side thereof, between which strips the notched belt 74 travels. An opening 99 is formed in one end of the box near its bottom, through which the cigarettes are introduced by the endless rack 71, and as each cigarette enters the box its ends are first supported by the strips 98^a, on reaching which the teeth of the endless rack 71 become disengaged from the cigarette. The cigarette being forced forward by succeeding ones now reaches the endless notched belt 74, a layer being by this means distributed along the length of the box. The cigarettes gradually rising within the box are spread evenly therein until it is filled. After a box has been filled and removed a bottom having a tongue on each edge is slid between the strips 98^a to assist in supporting the body of cigarettes, as otherwise those below would be bent downward by the weight of the superimposed ones and rendered unfit for sale.

I have shown (see particularly Fig. 6) a double collecting-box, so arranged that after one side has been filled with cigarettes it may be turned end for end and the other side filled. To support such a box, I fasten to the frame 63 brackets 100, Fig. 7, having a shelf 101 upon which the overhanging part of the box rests.

The moving parts of the collecting device are operated as follows: On the outer end of the cam-shaft 5 is fixed a small sprocket-pin-

ion 102, Fig. 1, which drives a larger sprocket-wheel 103 by means of a chain 104. A curved arm 105, formed upon the plate 2, has a bearing at its outer end, in which is journaled the shaft 106, Fig. 2, of the sprocket-wheel 103. A small pinion 107 on the opposite end of the shaft 106 is connected by a chain 108 to a sprocket-wheel 109 on the shaft 68, which carries the grooved pulley 69 for driving the endless rack 71. On the same shaft 68 is a grooved pulley 110, connected by a belt 111 to a small pulley 112, mounted on the shaft of the brush 91. The shaft of the pulley 70, around which the endless rack passes, is provided with a small sprocket 113, which drives a chain 114, encircling a larger sprocket-wheel 115 upon the shaft of the notched-belt pulley 73. By this arrangement the notched belt 74 is driven at a speed slower than that of the endless rack, this being necessary to effect the proper distribution of the cigarettes within the collecting-box.

In the general operation of my invention a cigarette rod is made in the usual manner and advances from the seam-closing device to the cutting mechanism. As it passes through the funnel 32 and ledger-plate 33, which, with the knife 41, are secured to the reciprocating frame 24, the latter, because of the action of the peripheral groove 14 (in the cam-wheel 7) on the roller therein, moves with increasing speed in the direction in which the cigarette rod is moving. During this time the knife is thrown by the side groove 15, acting upon the roller 48 on the forked slide 46, toward the cigarette rod in a direction at a right angle thereto. Just before the knife reaches the cigarette rod the reciprocating frame 24 has attained its maximum speed, which is that of the cigarette rod. The knife, which is rotating at a high velocity, continues to advance toward the cigarette rod and passes through it. As the rod and knife are moving laterally with common speed a sharp straight cut is made through the rod, severing a piece of suitable length to form a cigarette. After having severed the rod the knife is drawn back, and as soon as its cutting edge has passed from in front of the rod the lateral movement of the reciprocating frame, owing to the shape of the peripheral groove 14, is decreased in speed until the frame is brought to a momentary stop, after which it returns to the first position to begin its operation again. The cigarettes thus cut from the rod drop a short distance and fall on the inclined plate 78, rolling thence onto the endless rack 71, on which they rest between the teeth 72, the rack carrying them along under the swinging plates 92 93 and the brush 91, which together serve to effectually straighten out all improperly-disposed cigarettes and bring them between the teeth of the endless rack. The speed of the endless rack 71 is so timed with respect to that of the advancing cigarettes that between every two or three cigarettes resting thereon there will be an unoc-

cupied space, the purpose of which will be described later. As the endless rack 71 advances the cigarettes thereon are centered by the plates 94 and pass through the magazine 79, over the fingers 83, and under the inclined bottom 80 to the collecting-box 98, when they are transferred to the grooved strips 98^a, passing thence to the notched belt 74, which runs through the collecting-box as described. When the collecting-box 98 is first placed on the frame 63, the cigarettes are fed into its front end at the bottom by the rapidly-moving endless rack 71, which after entering the box turns down and around the pulley 70, leaving the cigarettes supported by their ends on the strips 98^a. The continued feeding of cigarettes into the box causes them to pile up at the entrance and at the same time to move toward and onto the comparatively slowly-moving notched belt 74, by which they are carried to the opposite end of the box. The upper surface of the notched belt 74 being slightly higher than the strips 98^a, the cigarettes are raised above said strips to prevent frictional contact therewith. The cigarettes continuing to enter the box are carried along by the belt 74 and spread evenly from one end of the box to the other, the effect on the cigarettes being similar to that of a shaker. Being cylindrical, light, and smooth, the cigarettes readily rotate and move upon and around one another, so that by the time the collecting-box is filled the top layer of cigarettes is substantially even. When a collecting-box is full and ready to be replaced by another, (or in case a double box is used to be reversed,) the handle 87 on the magazine is to be raised, thereby lifting the points of the fingers 83 about even with the lower edge of the inclined bottom 80. This will cause the cigarettes to strike the said fingers, when they will ride up out of the endless rack and collect in the magazine. The magazine is therefore an emergency receptacle to be called into requisition to prevent clogging or banking up of the cigarettes during the removal or change of the collecting-box or the temporary stopping of the cigarette-machine during the change. As soon as the filled collecting-box has been replaced by an empty one or reversed the handle 87 must be turned down and the fingers 83 returned to their normal position below the teeth of the endless rack 71, thus permitting the cigarettes to pass on in the normal way to the collecting-box. The cigarettes which have accumulated in the magazine now rest on the inclined bottom 80, while the cigarettes in the ordinary course of progression rest upon the endless rack. As soon as an empty space between two of the teeth of the rack heretofore spoken of reaches the magazine one of the cigarettes therein drops into it. This action continues until all the cigarettes have fallen from the magazine and been carried to the collecting-box. By the use of the magazine thus described an operator is not hurried when changing or reversing collect-

ing-boxes, sufficient time being allowed to insure removal and replacement thereof before the magazine is filled. If while the operator is raising the handle 87 to prevent the passage of the cigarettes to the collecting-box one of the cigarettes should be caught between the fingers 83 and the lower edge of the inclined bottom 80, as represented in Fig. 9, the said inclined bottom will be raised by the cigarette which still being between the two teeth of the endless rack will roll under the bottom and pass on to the collecting-box, and the spring 82 or the arm 81, Fig. 2, will pull down the inclined bottom 80 as soon as the cigarette has passed and prevent a second one from being carried thereunder. The pressure exerted on the cigarette by this operation is slight and does not affect its appearance or value.

Having described my invention, I claim—

1. In a device, adapted to be applied to a cigarette-machine in close relation to its delivery-tube, mechanism for receiving the product of the machine and continuously delivering it upon the bottom of a stationary collecting box or case, in combination with the said collecting box or case and means, projecting through the bottom of said box or case, for evenly and regularly distributing the product delivered therefrom, substantially as set forth.

2. The delivery mechanism of a cigarette-machine, in combination with a collecting device placed in close relation thereto, an arranging mechanism, and a stationary case or box open at the bottom and at one end near the bottom, whereby the product collected from the machine is introduced into the bottom of the said case or box, and distributed in an orderly manner therein by the arranging mechanism, substantially as set forth.

3. The combination of mechanism for receiving the product of a cigarette-machine, a stationary collecting box or case through the bottom and at one end of which the said product is delivered, and distributing mechanism, extending through the bottom of and into the collecting box or case for spreading the product evenly therein, substantially as set forth.

4. In a device, adapted to be applied to a cigarette-machine in close relation to its delivery-tube, a traveling conveyer for receiving the product of the cigarette-machine and delivering it to a collecting box or case, in combination with a lifting-finger on each side of the traveling conveyer for diverting the flow of the product of the machine in its ordinary course of progression to the collecting box or case, substantially as set forth.

5. In a device, adapted to be applied to a cigarette-machine in close relation to its delivery-tube, a traveling conveyer for receiving the product of the cigarette-machine and feeding it to a collecting box or case, in combination with a lifting device for diverting the flow of the said product to the collecting-box, and a magazine for holding the diverted

product and adapted to return it to the traveling conveyer, substantially as set forth.

6. In a cigarette-machine, the combination of mechanism for cutting and delivering cigarettes, means for conveying the cigarettes from the said mechanism and delivering them into a suitable case or box, means for diverting the flow of the cigarettes in their passage to the said case or box, a magazine, having a movable bottom, for temporarily holding the diverted cigarettes, and means for operating the movable bottom, whereby the cigarettes are returned from the magazine to the conveyer, substantially as set forth.

7. In a cigarette-machine, the combination of mechanism for cutting and delivering cigarettes, an endless rack for conveying the cigarettes from the delivering mechanism to a suitable case or box, and an endless belt working within the bottom of the said case or box for distributing the cigarettes throughout its entire length in an orderly manner, substantially as set forth.

8. In a cigarette-machine, the combination of mechanism for cutting and delivering cigarettes, an endless rack for conveying the cigarettes from the delivering mechanism to a suitable case or box, and pivoted fingers adapted when raised to deflect the cigarettes from the endless rack, substantially as set forth.

9. In a cigarette-machine, the combination of mechanism for cutting and delivering cigarettes, an endless rack for conveying the cigarettes from the delivery mechanism to a suitable case or box, a pivoted finger on each side of the endless rack adapted when raised to deflect the cigarettes from the said rack, and a magazine for collecting and holding the deflected cigarettes, substantially as set forth.

10. In a cigarette-machine, the combination of mechanism for cutting and delivering cigarettes, an endless rack having upwardly-projecting teeth for conveying the cigarettes from the delivering mechanism to a case or box, a magazine through which the endless rack passes, fingers pivoted to the sides of the magazine and an inclined bottom also pivoted to the sides of the magazine, substantially as set forth.

11. In a cigarette-machine, the combination of mechanism for cutting and delivering cigarettes, an endless rack having upwardly-projecting teeth between which the cigarettes rest while being carried to a suitable case or box, fingers adapted to engage the projecting ends of the cigarettes and deflect them from the endless rack, and a magazine for temporarily storing the deflected cigarettes, substantially as set forth.

12. In a cigarette-machine, the combination of mechanism for cutting and delivering cigarettes, an endless rack having upwardly-projecting teeth between which the cigarettes rest, said endless rack moving at a speed greater than that at which the delivering

mechanism moves in feeding them thereto, whereby spaces unoccupied by cigarettes are left between the teeth of the aforesaid rack, a magazine through which the endless rack
5 passes, means for deflecting the cigarettes from the belt into the magazine, and means for forcing the cigarettes from the magazine into the unoccupied spaces between the teeth of the endless rack, substantially as set forth.

10 13. In combination with the delivery mechanism of a cigarette-machine, an endless rack for carrying the cigarettes therefrom; a stationary collecting box or case supported by the frame, into the front end of which box
15 at the bottom the endless rack enters, and a notched belt projecting within the bottom of the box for evenly distributing the cigarettes along the length of the collecting-box as they are delivered thereto by the endless rack,
20 substantially as set forth.

14. In a cigarette-machine, and in combination with the delivering mechanism thereof, an endless rack for conveying the cigarettes lying transversely thereon away from
25 the said delivering mechanism, a rotary brush 91, and swinging plates 92, 93 above the endless rack for causing the cigarettes to enter between the teeth of the rack, and converging plates for centering the cigarettes on the
30 endless rack, substantially as set forth.

15. In a cigarette-machine, and in combination with the delivering mechanism thereof, an endless rack for carrying the cigarettes from the said delivering mechanism, means
35 for causing the cigarettes to enter between the teeth of the endless rack, a removable collecting box or case, held stationary on the frame and open at the bottom and on one side near the bottom, through which opening the
40 cigarettes are fed into the collecting-box, and a distributing-belt projecting into the said collecting-box through the bottom, substantially as set forth.

16. In a cigarette-machine, and in combination with the delivering mechanism thereof, an inclined plate 78, an endless horizontal movable toothed rack, and a stationary collecting box or case into an opening in the
45 bottom of which the cigarettes are carried by the toothed rack, substantially as set forth.
50

17. A device for collecting and arranging in regular order cigarettes delivered thereto, which consists of the following elements in

combination; an endless rack, a notched belt, and a stationary collecting box or case, into
55 the bottom of which the notched belt projects, the said collecting-box overlapping one end of the endless rack, substantially as set forth.

18. In a cigarette-machine, the combination
60 of mechanism for cutting and delivering cigarettes, an endless rack having upwardly-projecting teeth between which the finished cigarettes rest, said endless rack moving at a
65 speed greater than that at which the delivering mechanism moves in feeding cigarettes, whereby spaces unoccupied by cigarettes are left between some of the teeth of the rack, and a magazine having a movable bottom and
70 adapted to feed cigarettes contained therein to the unoccupied spaces between the teeth, substantially as set forth.

19. In a cutting mechanism for a cigarette-machine, the combination of a reciprocating
75 frame, a cigarette-rod support bolted thereto, a vibrating knife-carrying frame adapted to rock on a shaft 23 turning in bearings on the reciprocating frame, an arm 50, also rocking
80 on the shaft 23, a threaded stem pivoted to the arm 50 and passing through a lug on the vibrating knife-carrying frame, adjusting-nuts, and means for operating the reciprocating and the knife-carrying frames, substantially as set forth.

20. In combination with the delivering
85 mechanism of a cigarette-machine, an endless rack, a distributing-belt, and a collecting box or case having an opening in its bottom for the passage of the distributing-belt, and an opening in its front for the entrance of the
90 endless rack and the cigarettes, substantially as set forth.

21. A box for temporarily holding cigarettes delivered thereto from a cigarette-machine, having an open front end for the entrance
95 of the cigarettes thereinto, and an open bottom, combined with a grooved strip fixed to each side of the box at its lower edge for the insertion of a tongue-board, substantially as set forth.
100

In testimony whereof I hereunto set my hand and seal this 10th day of January, 1898.

MICHAEL KIRSHNER. [L. S.]

Witnesses:

I. J. SHICKEL,

J. W. F. ALLEMAN.