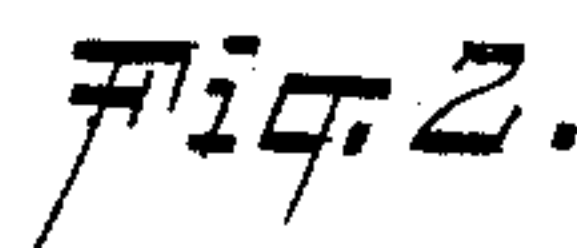


3 Sheets—Sheet 1.

No. 596,547.

Patented Jan. 4, 1898.



WITNESSES:

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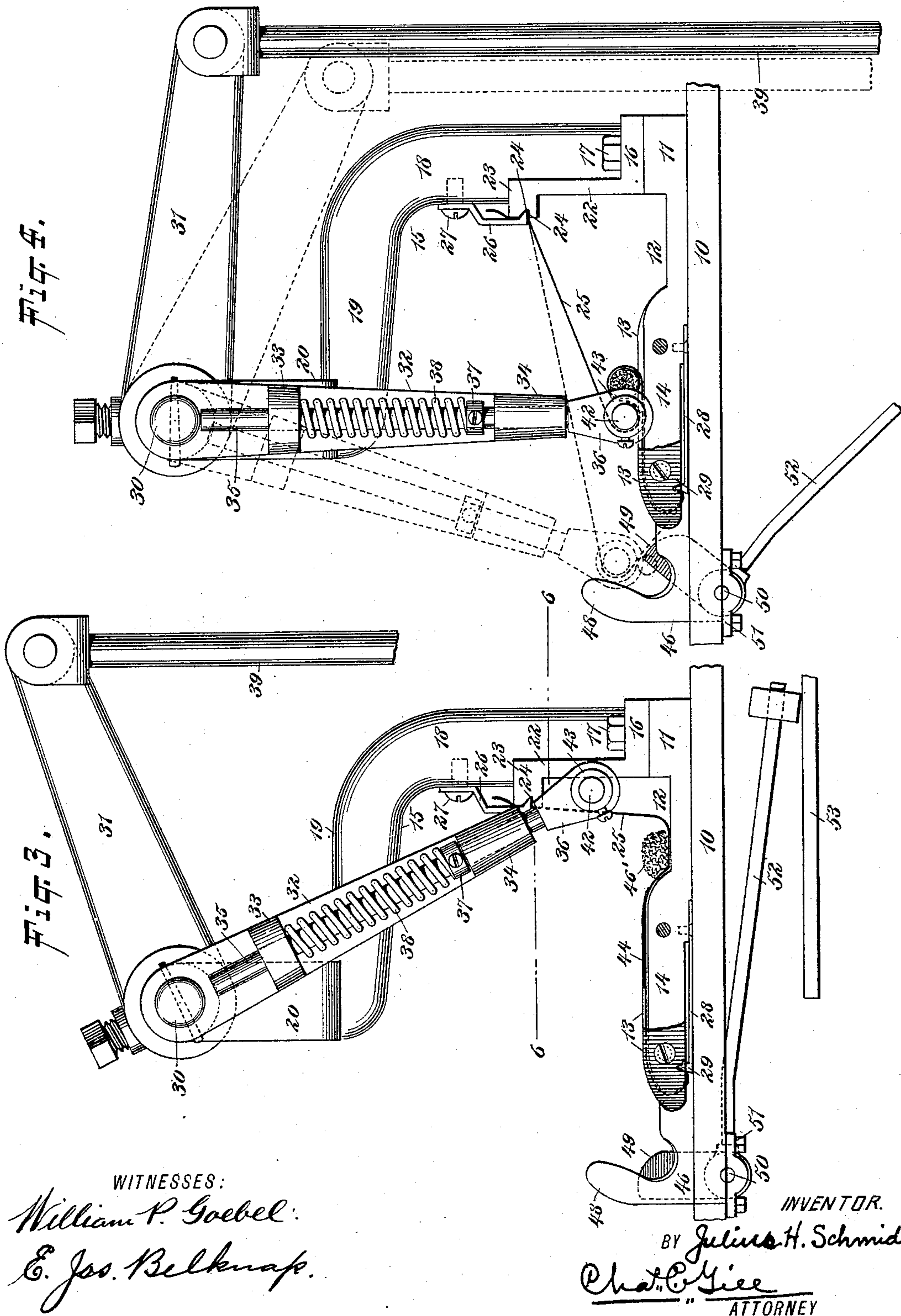
(No Model.)

3 Sheets—Sheet 2.

J. H. SCHMIDT.
CIGARETTE MAKING MACHINE.

No. 596,547.

Patented Jan. 4, 1898.



(No Model.)

3 Sheets—Sheet 3.

J. H. SCHMIDT.
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Fig. 5.

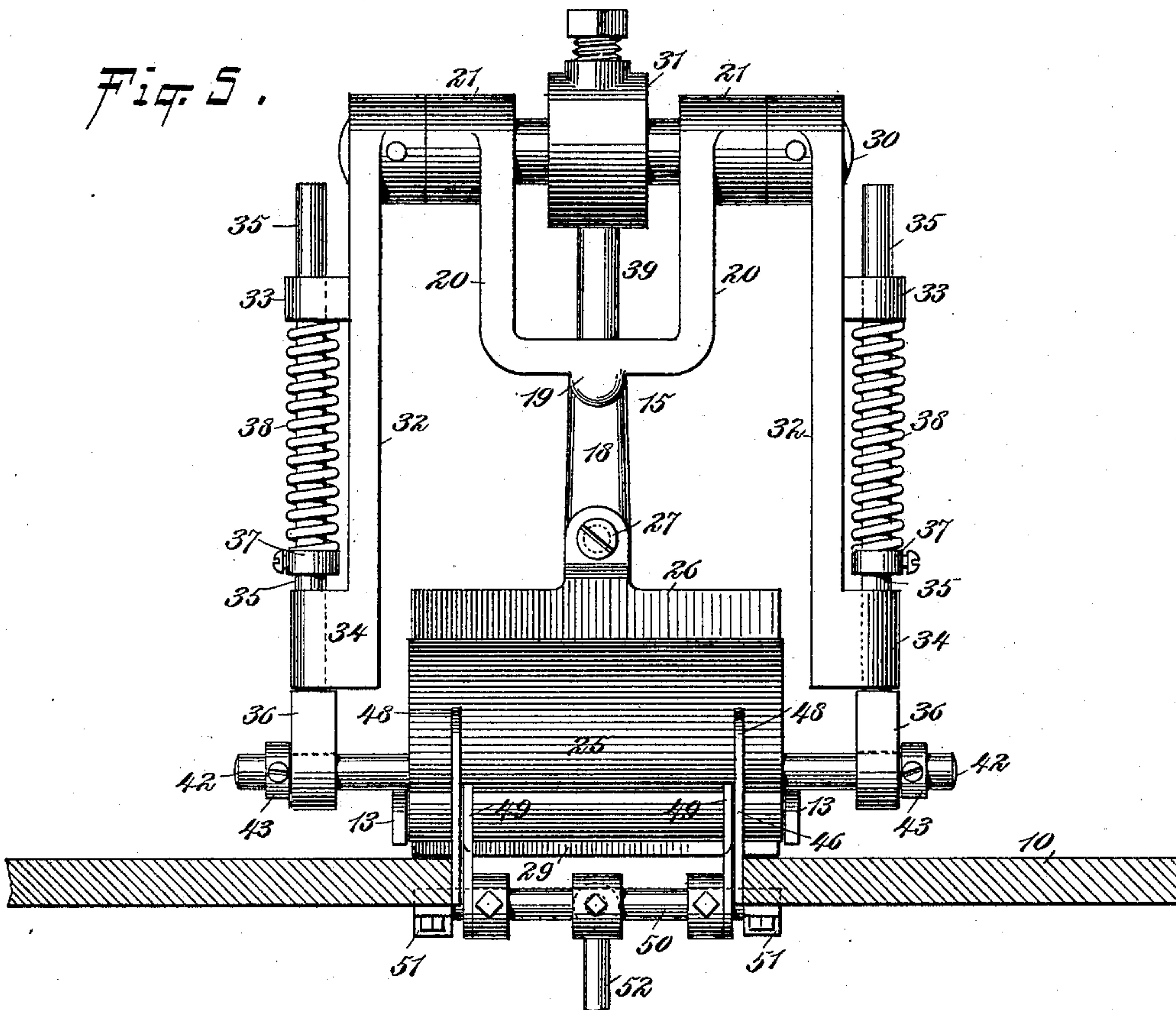
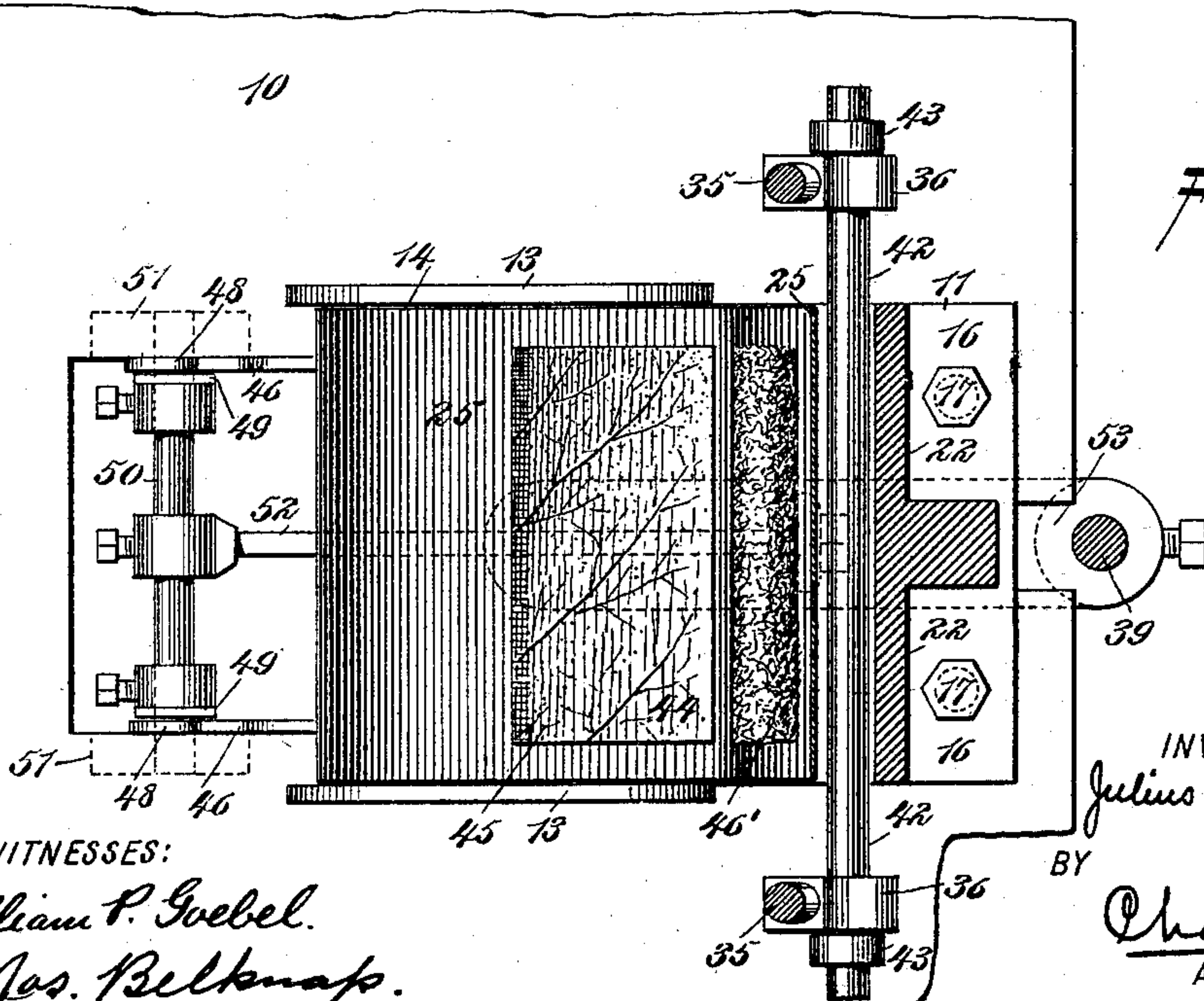


Fig. 6.



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UNITED STATES PATENT OFFICE.

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FOURTHS TO WILLIAM E. S. CRANE, AARON L. FIELD, JOHN C. RYER,
AND PETER H. SCHEFFLER, OF SAME PLACE.

CIGARETTE-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 596,547, dated January 4, 1898.

Application filed April 3, 1897. Serial No. 630,541. (No model.)

To all whom it may concern:

Be it known that I, JULIUS H. SCHMIDT, a citizen of the United States, residing at Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Cigarette-Making Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

The invention relates to improvements in cigarette-making machines; and it consists in the novel features of construction and combinations of parts hereinafter described, and particularly pointed out in the claims.

The purpose of the invention is to produce an efficient, small, inexpensive cigarette making and trimming machine capable of operation by hand or foot power and adapted for individual personal use or for use in the smaller stores or factories in which the usual power cigarette-machines would be both impracticable for use and unattainable by reason of their expense.

The machine made the subject hereof is also adapted for the rolling of cigar bunches and cheroots, and hence the invention is not wholly limited to the production of cigarettes nor to the use of manual power.

Referring to the accompanying drawings, Figure 1 is a side elevation of a machine constructed in accordance with and embodying the invention, the pressure-roller being indicated by full lines in its rear position ready to be brought forward for the purpose of rolling the cigarette within the fold of the rolling-apron, and said roller and the parts operating the same being illustrated by dotted lines in the position they occupy after the cigarette has been rolled and trimmed. Fig. 2 is an enlarged detached central vertical section through the front portion of the rolling-bed and illustrating the position the trimming-knives occupy when they receive the cigarette at the completion of the forward motion of the pressure-roller and before the

movable knives turn upward and frontward to trim the ends of the cigarette. Fig. 3 is a side elevation, partly broken away and on an enlarged scale, of the upper portion of the machine embodying my invention, the pressure-roller being shown in its rear position ready to be brought forward for the purpose of rolling the charge of filler-tobacco resting upon the rolling-apron. Fig. 4 is a like view of same, the pressure-roller and connected parts being shown by full lines in an intermediate position and the filler-tobacco being illustrated in the loop of the rolling-apron and partly rolled within the wrapper. This figure also illustrates by dotted lines the forward position of the pressure-roller and the condition of the rolling-apron at the time the rolled cigarette is discharged therefrom to the trimming-knives. Fig. 5 is a front elevation, partly in section, of the upper portion of the machine, the parts of the latter being shown in their intermediate position, as illustrated by the full lines in Fig. 4; and Fig. 6 is a top view of the bed and lower portion of the machine, the same being partly in section on the dotted line 6 6 of Fig. 3.

In the drawings, 10 designates any suitable table or base upon which the machine proper may be placed, and 11 denotes the bed or base plate of the machine, which, as illustrated, is substantially rectangular in outline and is provided at its rear portion with the recess or pocket 12 and at its opposite sides with the tramways 13 13, the latter at their upper edges being on a slightly-higher elevation than the upper surface of the rolling-bed proper, 14. The rolling-bed 14 is provided with the curved front and rear ends, and the tramways 13 are likewise at their ends constructed on curved lines. The central portions of the tramways 13 have horizontal upper edges, which are slightly above and parallel with the horizontal upper surface of the rolling-bed 14. The tramways 13 are illustrated as having been made in separate pieces fastened to the vertical sides of the bed 14 by means of screws; but said tramways may, if desired, be integral with the said bed 14.

Upon the rear portion of the base 11 is secured the frame 15, which comprises the hori-

zontal base or flanges 16, which face the base 11 and receive the securing screws or bolts 17, the vertical standard 18, extending centrally upward from said plate or flanges 16, the horizontal arm 19, which is integral with the standard 18 and extends forward centrally over the rolling-bed 14, and the vertical arms 20 20, (shown more clearly in Fig. 5,) which are integral with the horizontal arm 19 and extend upward from the front end of the latter and are formed with the sleeves 21 21. The frame 15 is in one integral piece and securely bolted to the base-plate 11 by means of the screws or bolts 17, the latter being at opposite sides of the standard 18, forming a part of said frame 15.

At the lower front portion of the frame 15 is formed integral with said frame the plate 22, which extends transversely across the machine, as illustrated in Fig. 6, and has at its upper front edge the shoulder 23, containing the horizontal transverse groove 24, which is utilized, as illustrated in Figs. 3 and 4, in retaining the upper edge of the rolling-apron 25, which will be of the usual material and has its upper edge clamped within the said groove 24 by means of a transverse plate 26, whose upper edge is secured to the frame 15 by means of the screw 27 and whose lower edge is bent rearward to form a biting lip which presses the upper portion of the rolling-apron 25 within the said groove 24, as shown in Fig. 4. The lower portion of the plate 26 is coextensive in width with the plate 22, and hence the said plate 26 will securely hold the upper portion of the apron 25 along the entire width of the latter.

The front edge of the rolling-apron 25 is secured below the front portion of the rolling-bed 14 by means of the plate 28, which is secured at its rear end to the base of the rolling-bed 14 by means of a screw, as indicated in Figs. 3 and 4, and at its front edge is provided with an upwardly-turned biting edge or lip 29, which presses the front portion of the rolling-apron 25 into a groove formed in the lower front portion of the rolling-bed 14, the purpose of said lip being to hold the front end of the said rolling-apron firmly in position. The plates 26 and 28, retaining the opposite ends of the rolling-apron 25, may be detached or loosened from their supports whenever desired to remove the apron 25 and supply a new apron. The construction and position of the plate 26 are such that it may be readily loosened and then retightened for the purpose of permitting the proper adjustment of the apron 25 in accordance with the character and size of the cigarette to be rolled, the nature of the tobacco, and other circumstances. The sleeves 21 21, formed at the upper ends of the frame 15, furnish bearings for the transverse shaft 30, upon whose center, intermediate the sleeves 21 21, is secured the crank-arm 31 and upon whose ends beyond said sleeves 21 21 are secured the dependent oscillatory arms 32 32, which correspond with

one another and are each formed with the apertured lugs or sleeves 33 34. The arms 32 32 receive within the sleeves 33 34 the reciprocatory rods 35, having the head 36 at their lower end below the sleeve 34, the collar or stop 37 directly above said sleeve 34, and the coiled spring 38 intermediate said collar 37 and the lug or sleeve 33. The rods 35 correspond with one another in every respect, and, as may be understood from an inspection of the drawings, the said rods are limited as to their upward movement by the upper ends of the heads 36, which form shoulders to contact with the lower ends of the lugs or sleeves 34, and said rods 35 are limited as to their downward movement by the collars 37 contacting with the upper ends of said lugs or sleeves 34. The rods 35 have a spring tension downward, owing to the pressure of the coiled springs 38, and said rods are adapted to have an oscillatory movement imparted to them, from the extreme rearward position shown in Fig. 3 to the extreme forward position indicated by dotted lines in Fig. 4, from the crank-shaft 30, which will receive an axial oscillatory motion from the crank-arm 31, the latter being operated through a connecting-rod 39 by means of the foot-treadle 40 and spring 41 or other convenient means. When the crank-shaft 30 is to be operated by foot-power, it will, as illustrated in Fig. 1, be moved in one direction by the foot-treadle 40 and in the reverse direction (the foot being relieved from said treadle) by the spring 41, as will be hereinafter more fully described. The lower ends of the rods 35 carry the roller or rod 42, as more clearly illustrated in Figs. 5 and 6. The rod 42 freely enters transverse apertures in the lower ends of the heads 36 and is prevented from slipping therefrom by means of the collars 43, secured upon the said rod 42 beyond the lower enlarged heads 36, formed as a part of the rods 35. The rod 42, constituting the pressure-roller, is constantly below the rolling-apron 25.

In Figs. 3 and 6 is illustrated the first position of the rod or roller 42 preparatory to the rolling of a cigarette, and in said figures I illustrate upon the apron 25 a wrapper 44, having a line of paste 45 applied along its outer edge. At this stage of the operation of rolling a cigarette the rear portion of the apron 25 is depressed within the recess 12, formed in the base 11, and upon this rear portion of the apron is placed a charge of filler-tobacco 46' for the cigarette. The wrapper and the charge of tobacco being in the position illustrated in Figs. 3 and 6, the crank-arm 31 is depressed by the pressure of the foot upon the treadle 40, and the shaft 30 is thus caused to move the arms 32 frontward from the position illustrated in Fig. 3 to that illustrated by full and then by dotted lines in Fig. 4. The forward movement of the arms 32 carries the rods 35 and roller 42 forward, as shown, and during this forward

movement of said parts the roller 42 closes the rear portion of the apron 25 over the filler-tobacco upon said apron within the recess 12 and forms the usual loop in which the cigarette is rolled, and the continued forward movement of the arms 32 and rods 35 causes the roller 42 to properly roll the charge of tobacco within the loop of the apron 25 and into the wrapper 44, finally discharging the rolled cigarette at the front end of the rolling-bed 14, as indicated in Figs. 2 and 4. The apron 25 discharges the rolled cigarette to the trimming-knives, which will be hereinafter described, by which the ends of the cigarettes are trimmed and the cigarette left ready for the market. The charge of filler-tobacco receives its initial pressure while the roller 42 is passing over the rear inclined edges of the tramways 13 and its greatest pressure, while the arms 32 are about in a vertical position, (shown by full lines in Fig. 4,) and then a gradually-decreasing pressure until the cigarette is finally discharged from the front end of the bed 14. When the arms 32 are in about a vertical position, the upper ends of the heads 36 on the rods 35 contact with the lower edges of the sleeves or lugs 34 and at such time the roller 42 is entirely rigid, and there is no upward yielding of the same to any pressure which may be exerted by the tobacco within the loop of the apron 25. When the arms 32 are thus in a vertical position, the pressure of the roller 42 on the tobacco is rigid and unyielding, and the tobacco is thus firmly rolled within the wrapper 44 under a suitable pressure for insuring the sealing of said wrapper and uniformity in the finished cigarette. After the arms 32 have continued forward from their vertical position (illustrated in Fig. 4) the upper ends of the heads 36 will gradually recede from the lower ends of the lugs or sleeves 34, and hence the rod or roller 42, during the latter portion of its forward movement, will be under the tension of the springs 38, and thus the said rod or roller 42 will be relieved of the rigid pressure it previously had while at about the center of the rolling-bed 14 and will be given a yielding pressure, and owing to the radius of the arms 32 a gradually-reduced pressure. The latter part of the rolling of the cigarette is carried on under the gradually-lessening pressure above described in order that the wrapper may not be twisted or disarranged upon the cigarette while the paste is wet and to produce more perfect goods than have heretofore been produced upon cigarette-machines of the character embodied in this application, in which the pressure of the roller has been continued uniform after the rolling of the filler within the wrapper.

During the forward movement of the roller 42 the ends of the latter travel upon the upper edges of the tramways 13, and hence between the upper fold of the apron 25 and that portion of said apron upon the bed 14

will be formed a space, which may receive the wrapper 44, the apron being thus prevented during its forward travel from disarranging the leaf or wrapper 44 or scraping the paste 45 from the edge thereof.

The rolled cigarette is discharged from the apron 25 directly upon the stationary knives 46 46 at the front end of the bed 14, said knives being concaved to receive the cigarette, and having the upward extensions 48 to insure the retention of the cigarette until the same has been trimmed at its ends. In proper relation to the knives 46 46 are the oscillatory knives 49 49, secured upon the rock-shaft 50, which is mounted in bearings 51 and has connected to its center the crank-arm 52, whose rear portion extends rearward below the rolling-bed 14 and freely rests upon the arm 53, carried by the connecting-rod 39. The knives 49 49 are operated from the rod 39 and arm 53, the latter when moved upward by the spring 41 acting to elevate the rear end of the arm 52, and through the shaft 50 turn the knives 49 49 forward to cooperate with the knives 46 46 in trimming the ends of the cigarette then resting on said knives 46. The knives 49 are at the inner side of the knives 46, and hence the forward movement of the knives 46, cutting off the ends of the cigarette, operates to discharge the latter from the knives 49.

The pressure of the foot on the treadle 40 pulls the rod 39 downward and effects the forward movement of the roller 42 and the consequent rolling of the cigarette, and at the same time the downward movement of the rod 39 lowers the arm 53 carried by it and permits the rear portion of the arm 52 to descend and turn the knives 49 rearward, whereby said knives are brought into position to operate, and the knives 46 are left free to receive the cigarette. After the cigarette has been rolled and then discharged upon the knives 46 the foot will be removed from the treadle 40, whereupon the spring 41 will pull the rod 39 upward and perform the duty of returning the roller 42 to its rear position and (by elevating the arm 53 against the arm 52) moving the knives 49 frontward to cut off the ends of the cigarette held on the knives 46. Thus the knives 49 turn rearward while the roller 42 travels forward and then turn forward while the roller 42 returns rearward.

The rear end of the arm 52 may be weighted, as shown in Fig. 3, whenever found necessary to compel it to follow the arm 53 downward as the rod 39 descends.

The invention is not limited in every instance to the employment of the foot-treadle for operating the crank-arm 31, although I prefer to employ the foot-treadle 40 and spring 41 in the manner illustrated in Fig. 1.

The purpose of the invention is to produce a small cigarette-making machine which may be used in stores or factories in which power-machines would be impracticable or too expensive for use. The present machine will

occupy but little space and will be fed both with the filler-tobacco and with the wrappers by hand.

The machine made the subject of this application while small and simple in construction is effective in operation and fills a want in the trade which has not heretofore been supplied. In some instances the trimming-knives may be omitted from the machine and the cigarettes separately trimmed by hand. It will be found more convenient, however, to trim the cigarettes automatically by the cutting-knives 46 and 49 in the manner above described.

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

1. In a machine of the character described, the base having the rolling-bed and recess, combined with the tramways secured to opposite sides of said rolling-bed and having their upper edges above the horizontal plane of said bed, the apron secured at its opposite ends and resting upon said bed, the shaft adapted to have an axial oscillatory motion, the arms secured to and depending from said shaft, the yielding rods carried by said arms, the roller carried by said rods for coöperation with the rolling-apron, means for limiting the upward and downward movement of the said rods and means for preventing upward movement in said rods when the latter are in a vertical position over the rolling-bed, substantially as set forth.

2. In a machine of the character described, the base or bed plate having the rolling-bed and recess in rear thereof and the apron resting upon said bed and secured at its opposite ends, combined with the frame 15 extending centrally upward from said base or bed plate and thence extending forwardly over the rolling-bed and thence upwardly and terminating in the arms having bearings, the shaft mounted in said bearings, the arms secured to and suspended from said shaft and having the sleeves 33, 34, the rods mounted in said sleeves and having the heads 36 below the sleeves 34 and the collars 37 above said

sleeves 34, the springs upon said rods between the sleeves 33 and collars 37 and the roller carried by said heads for coöperation with the rolling-apron; substantially as set forth.

3. In a machine of the character described, the base or bed plate having the elevated rolling-bed and the apron resting upon said rolling-bed and secured at its opposite ends, combined with the frame extending upward from said base or bed plate, the crank-shaft supported in the upper end of said frame transversely over the rolling-bed, the arms suspended from and secured to said crank-shaft, the rods carried by said arms, the springs acting on the said rods to drive the same downward, the heads on said rods which prevent upward movement in the latter when they are in a vertical position over said rolling-bed and the roller carried by said rods for coöperation with the rolling-apron; substantially as set forth.

4. In a machine of the character described, the base having the rolling-bed and recess in rear thereof, the transversely-arranged crank-shaft, the oscillatory arms connected at one end to said crank-shaft, the pressure-roller carried by said oscillatory arms, and the apron secured at its opposite ends and resting on said rolling-bed and passing over said roller, combined with the trimming-knives 46, 49, at the forward end of said rolling-bed, the rock-shaft carrying said knives 49, the foot-treadle and connecting-rod for operating said crank-shaft, arms and pressure-roller, and means intermediate said knives 49 and said connecting-rod whereby said knives 49 are moved rearward and downward as the pressure-roller travels forward and then upward and forward to trim the cigarette as the pressure-roller travels rearward; substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JULIUS H. SCHMIDT.

Witnesses:

CHAS. C. GILL,

E. JAS. BELKNAP.