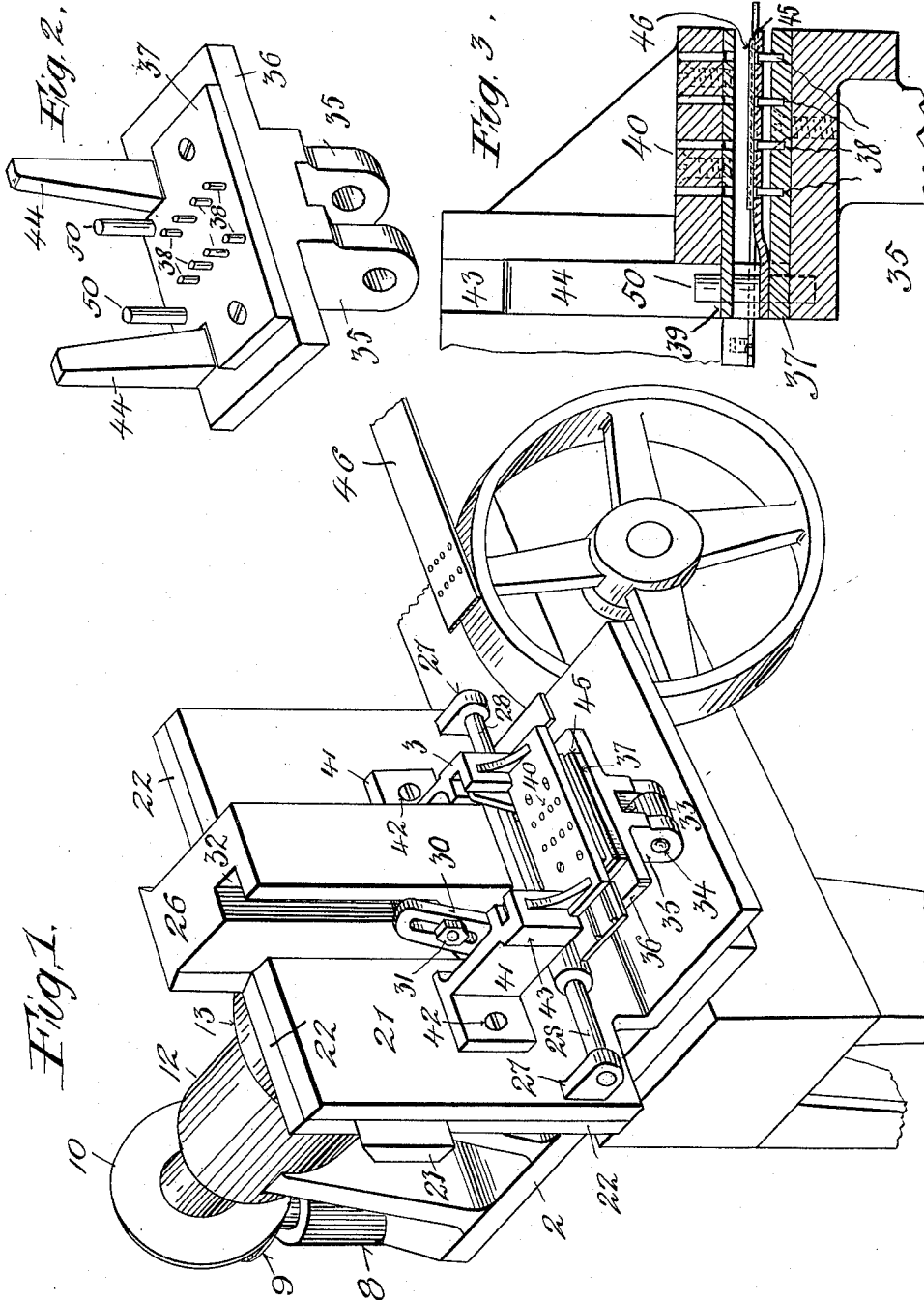


C. A. DRUCKLIEB.
MACHINE FOR PERFORATING CIGARETTE PAPER.
APPLICATION FILED NOV. 11, 1909.

1,007,852.

Patented Nov. 7, 1911.

5 SHEETS—SHEET 1.



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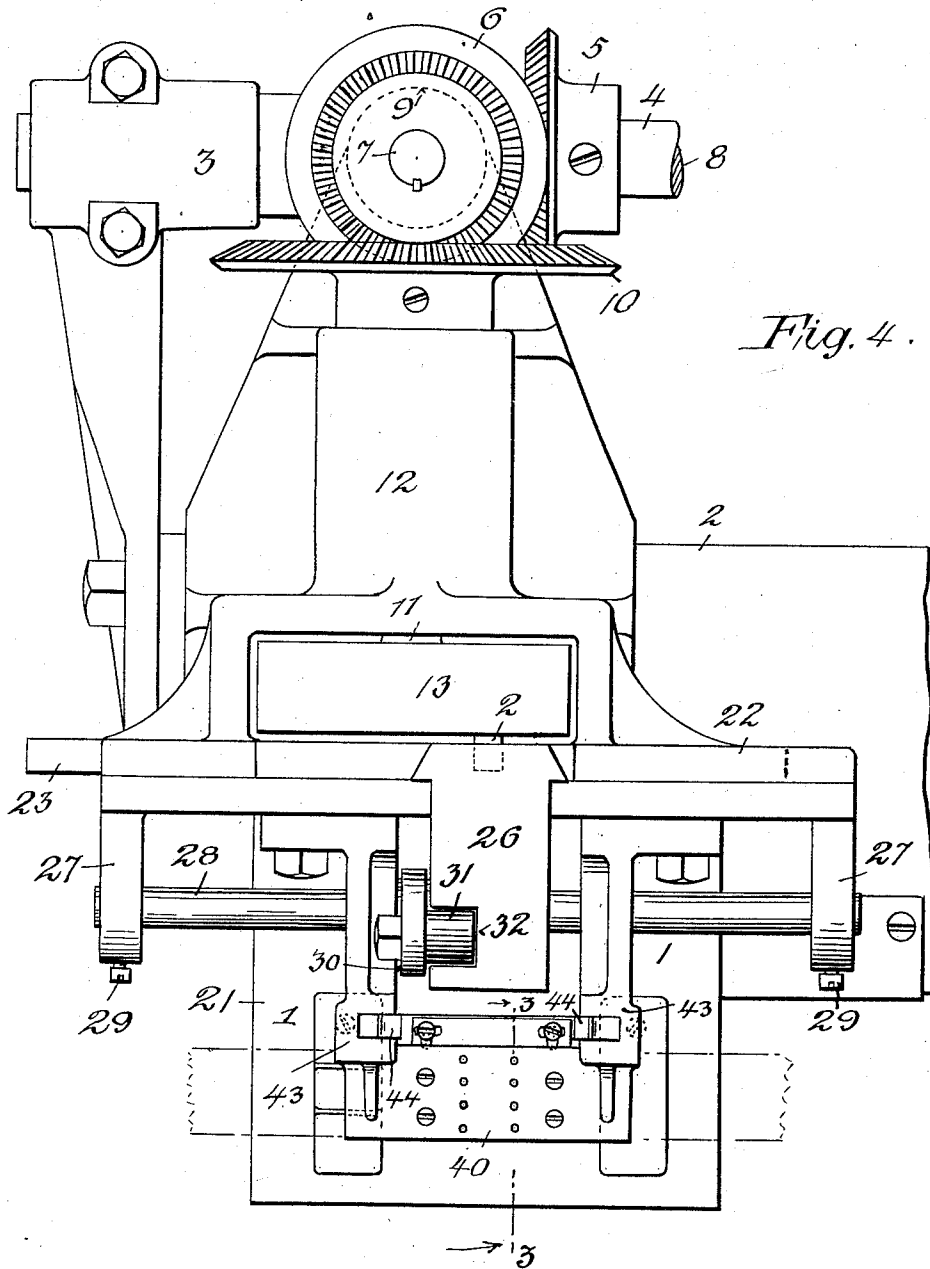


Fig. 4.

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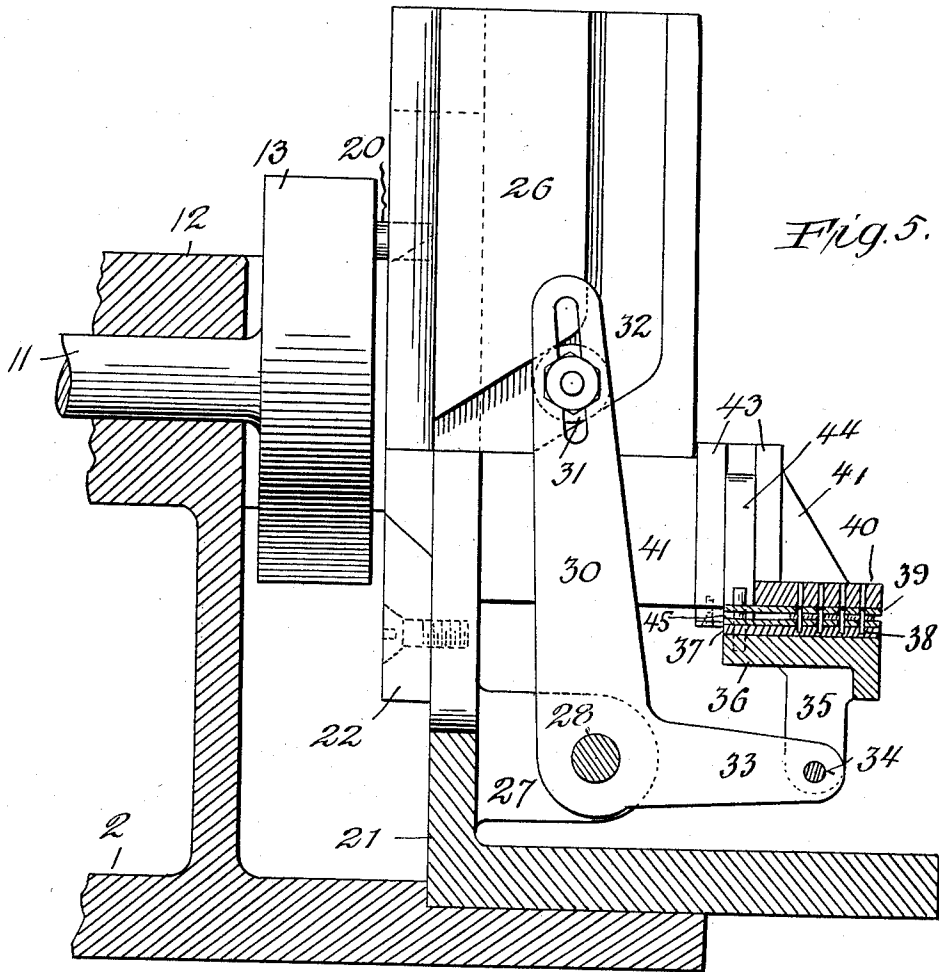


Fig. 5.

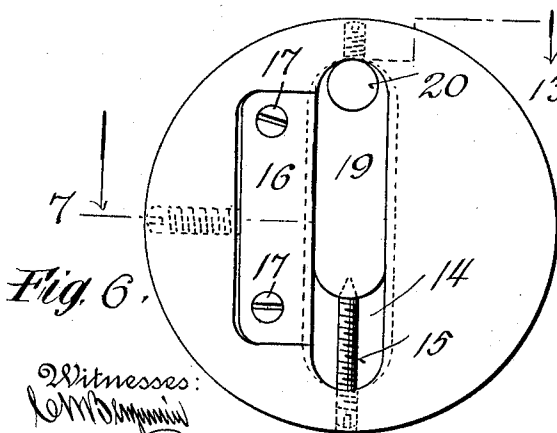


Fig. 6.

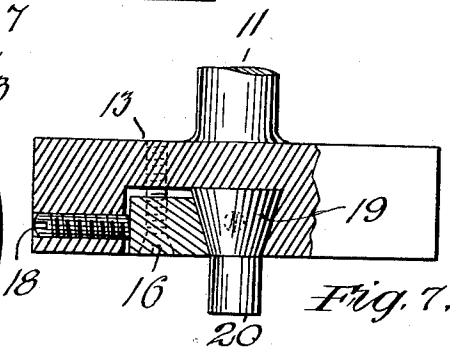


Fig. 7.

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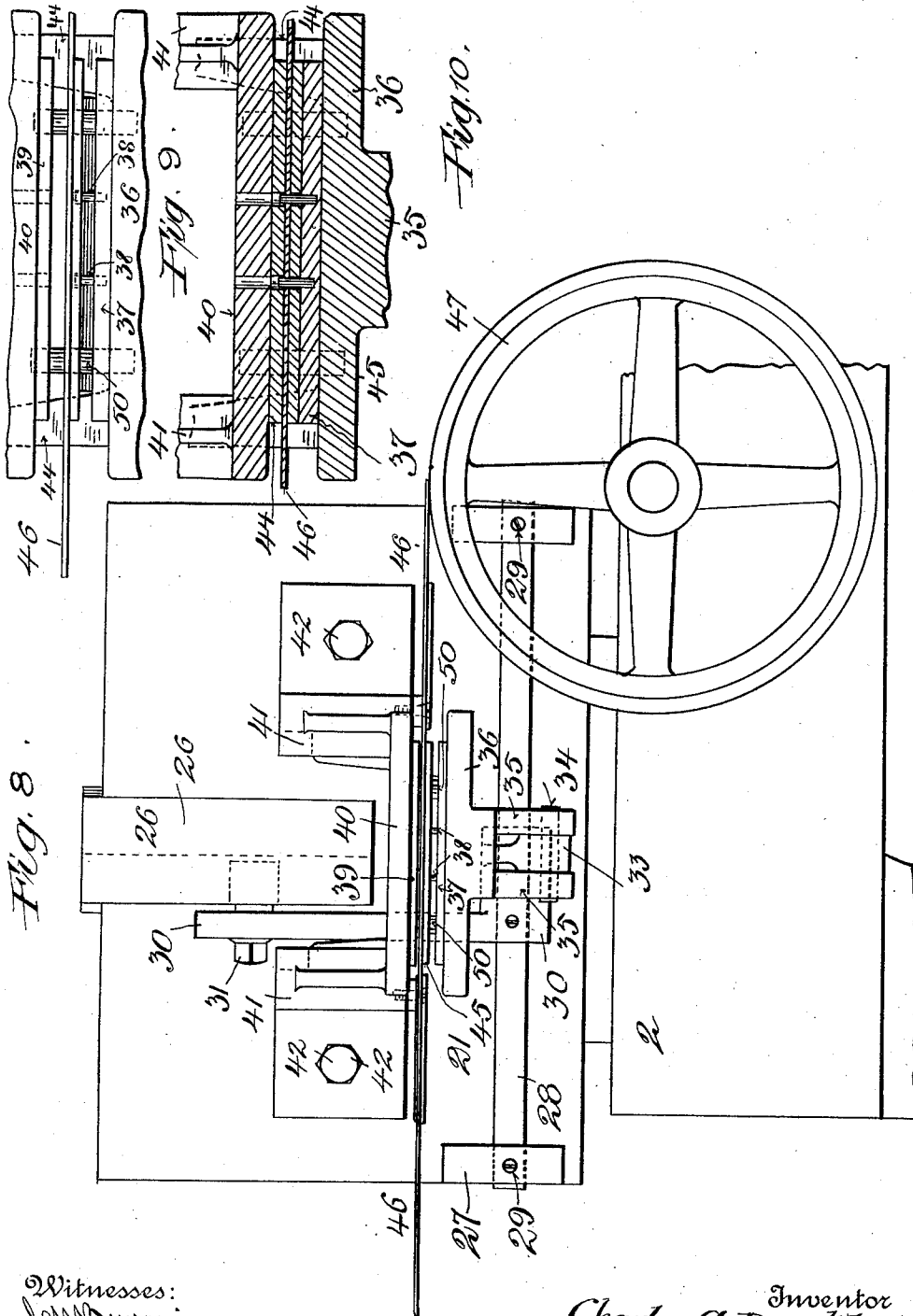
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6 SHEETS—SHEET 4.



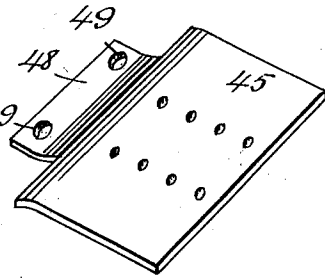
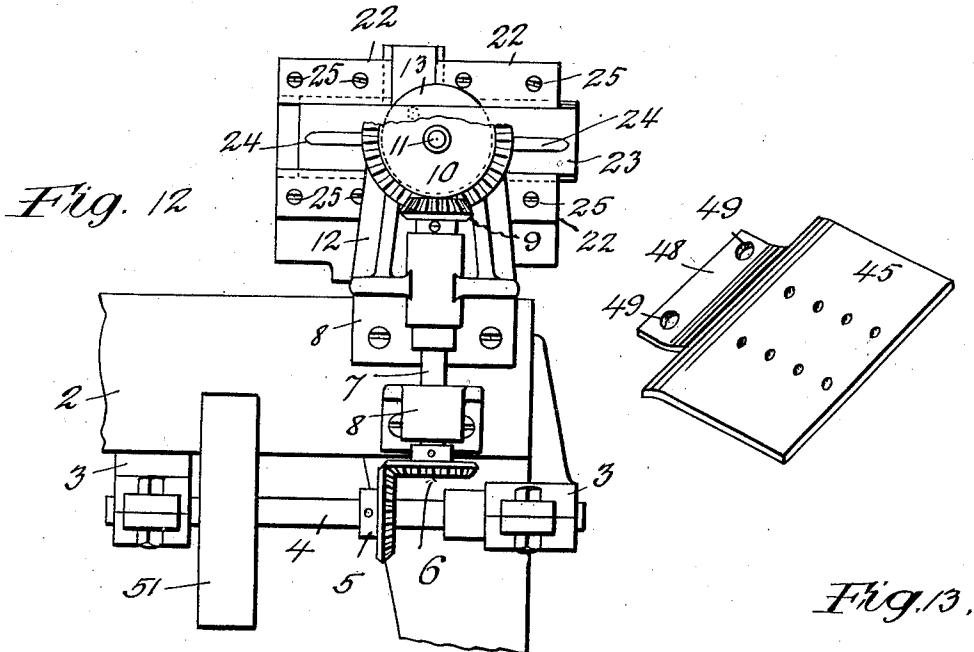
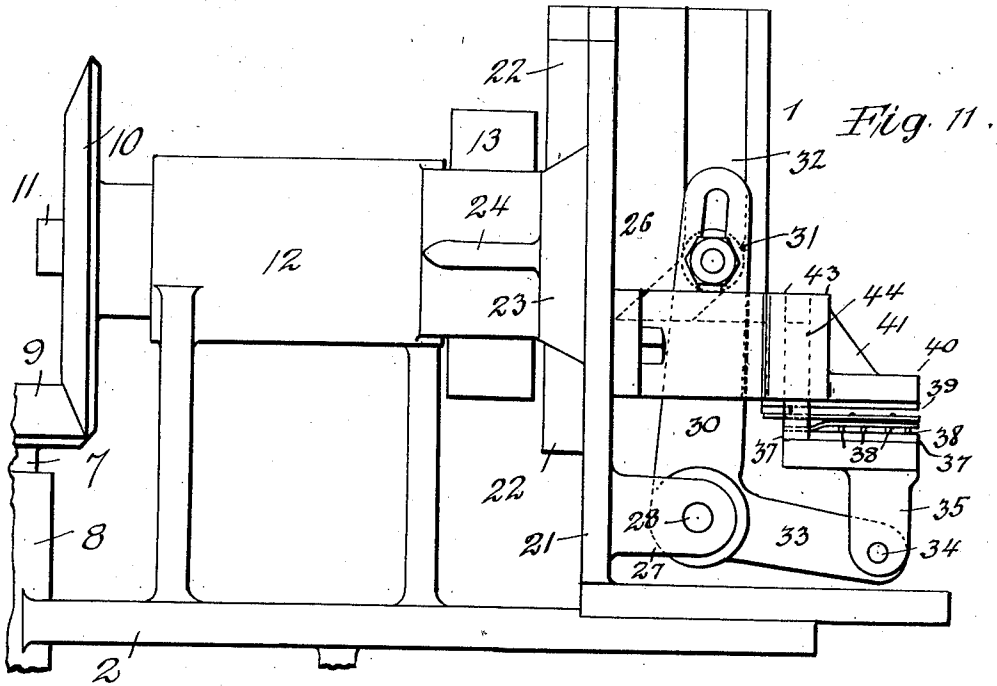
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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

CHARLES A. DRUCKLIEB, OF NEW YORK, N. Y.

MACHINE FOR PERFORATING CIGARETTE-PAPER.

1,007,852.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed November 11, 1909. Serial No. 527,365.

To all whom it may concern:

Be it known that I, CHARLES A. DRUCKLIEB, a citizen of the United States, and a resident of the city of New York, county
5 of Richmond, State of New York, have invented a new and useful Improvement in Machines for Perforating Cigarette-Paper, of which the following is a specification.

The object of my invention is to provide
10 a machine of that class which will perforate a paper ribbon while the same is being fed into a continuous cigarette making machine and not in any way interfere with the operation of the machine so that when each
15 cigarette emerges from the machine it will be properly perforated. This object is accomplished by my invention one embodiment of which is hereinafter set forth.

For a more complete description of my
20 invention, reference is to be had to the accompanying drawings, forming part hereof, in which:

Figure 1 is a perspective view of my improvement and a portion of the machine to
25 which it is attached. Fig. 2 is a perspective view of the lower portion of the perforating mechanism. Fig. 3 is a sectional view of a part of the perforating mechanism. Fig. 4 is a plan view of my improvement applied
30 to a machine. Fig. 5 is a transverse section of my improved mechanism. Fig. 6 is a front elevation of an adjustable crank pin and the parts to which it is attached. Fig.
35 7 is a sectional view taken on the line 7—7 of Fig. 6, looking in the direction of the arrows. Fig. 8 is a front elevation of my improved device and a portion of the machine to which it is attached. Figs. 9 and 10 are
40 a front elevation and a longitudinal section respectively of the punch mechanism, other parts of my improved device being broken away. Fig. 11 shows an end elevation of my improved device. Fig. 12 shows a rear elevation of the same. Fig. 13 is a perspective
45 view of a stripper plate.

Throughout the various views of the drawings similar reference characters designate similar parts.

My improvement 1 is applied to a cigarette making machine of the continuously
50 moving tube type. Only a part of the machine is shown. The bed 2 of this machine carries suitable bearings 3 in which is journaled the main shaft 4 in the conventional
55 manner. This main shaft 4 carries a beveled

gear 5 which meshes with a second beveled gear 6 on a vertical shaft 7 suitably journaled in bearings 8 secured to the bed 2 of the machine. The upper end of the shaft is provided with a beveled gear 9 that
60 meshes with a larger gear 10 on a horizontally disposed shaft 11 that is journaled in a suitable bearing 12 and carries at its other end a slotted disk 13 which has a slot 14
65 running across the same. At each end of the slot 14 are suitable set screws 15 and the slot 14 is so formed that its opposite sides flare slightly from the front toward the rear of the machine. The reason for this will
70 appear below. The wall 16 of the slot 14 is made adjustable and held in place by screws 17 and adjusted by a set screw 18. The slot 14 does not extend through the disk 13 but only partially through the same as
75 shown in Fig. 7. The function of the screw 18 is to adjust the wall 16 firmly against a slide 19 which is provided at one end with a crank pin 20. The slide 19 is adjusted
80 in the slot 14 by means of the screws 15 and is finally clamped in its proper position by the wall 16 which is held by the screws 17 and a screw 18. The peculiar mounting of the pin 20 which has been described above permits this pin to be adjusted both for
85 wear and for the length of the cigarettes which are made from the tube.

The bed 2 carries a sliding carriage 21 which runs longitudinally of the machine. This carriage 21 has a vertically disposed wall to which are secured gibs 22 which are
90 placed on either side of the fixed guides 23 which is preferably formed integral with the bearing 12 and connected therewith by means of suitable webs 24 which webs are on the opposite sides of the disk 13. The
95 guides 23 are sufficiently separated as shown in Fig. 4 so as not to interfere with the crank pin 20 in any way. The gibs 22 are secured to the carriage 21 by means of suitable screws 25 or in any other desired man-
100 ner. These guides 22 are separate and provided with peculiarly converging ends so as to form suitable guides for the slide 26 which runs vertically and performs a function that will be described below. The carriage 21 also has the horizontally disposed
105 standards or lugs 27 which extend from its vertically disposed wall and these lugs are united near their outer ends by means of a suitable rod 28 which is fixed in position by
110

means of suitable set screws 29. The rod 28 carries a bell crank lever 30 which is pivotally mounted thereon. The longer arm of the bell crank lever 30 is provided with a
 5 cam roller 31 mounted in the conventional manner and this roller 31 takes in a cam groove 32 in the slide 26. This cam groove 32 turns at an angle of about 45 degrees toward the rear of the machine as shown in
 10 Fig. 5 near its lower end so that the longer arm of the bell-crank lever 30 is correspondingly shifted when the slide 26 is near the upper limit of its movement and this arm of the bell-crank lever 30 is forward
 15 throughout the greater portion of the movement of the slide 26. While in this position this arm has no movement whatever.

It is obvious that the vertical wall of the slide 21 is suitably recessed so as not to interfere with the vertical movement of the
 20 slide 26. The lower arm 33 of the bell-crank lever 30 is horizontally disposed or nearly so and is shorter than the other arm and is provided at its free end with a pin
 25 34 that mounted in the lugs 35 which extend downwardly from the platen 36 on which is mounted the plate 37 that carries the pins 38 which do the punching in conjunction with a perforated plate 39 on the
 30 lower surface of a plate 40 which is secured by suitable brackets 41 to the vertically disposed wall of the carriage 21 by means of suitable cap screws 42. The brackets 41 are also provided with suitable guides 43 be-
 35 tween which run the arms 44 that extend upwardly from the rear edge of the platen 36 and guide the same. The plate 37 also carries a suitable stripper plate 45 which is elastically separated from the plate 37 and
 40 surrounds the pins 38 and extends from the top of the same as shown in Fig. 3 so that these pins will be clear of the paper ribbon 46 when it passes through the machine and on to a belt, not shown, that runs from the
 45 pulley 47 of the cigarette making machine. The stripper plate 45 may be made of any suitable form and it is preferably elastically mounted by means of an integral tongue 48 made as shown in Fig. 13 although it may
 50 be mounted in any other desired manner. The tongue 48 is provided with suitable perforations 49 that take over pins 50 that rise from the plate 37 and also extend through the plate 39 so as to insure a proper aline-
 55 ment between this plate and the pins 38.

From the foregoing the operation of my improved machine will be readily understood. Power is applied to the shaft 4 by means of the pulley 51 or in any other suitable manner and this shaft drives the bevel
 60 gear 5 which in turn drives the bevel gear 6 on the shaft 7. This shaft 7 drives the gear 9 and this gear 9 drives the bevel gear 10 and shaft 11 and disk 13 and the crank
 65 pin 20 fixed therein. The pin 20 gives the

carriage 21 a horizontal movement and simultaneously, the slide 26 a vertical movement. The velocity of the slide 21 varies but the average is that of the paper ribbon 46 which is fed through the machine so that
 70 when the ribbon is perforated it is not stretched nor retarded to any substantial extent. The vertical movement of the slide 26 acts through the bell-crank lever 30 to raise and lower the punches 38 through the
 75 stripper plate 45 and ribbon 46 on the forward movement of the carriage 21 and to withdraw the same on the rearward movement. The movement of the slides 21 and 26 are so timed that the perforations will
 80 be made while the movement of the carriage is substantially the same as that of the ribbon 46 and the punches will be withdrawn from this ribbon, by the mechanism described, before there is any substantial dif-
 85 ference of movement between the carriage 21 and the ribbon 46 so that in no event will the ribbon be torn.

While I have shown and described one embodiment of my invention it is obvious
 90 that it is not restricted thereto but may be embodied in various forms all of which come within the scope of the annexed claims.

I claim—

1. In a machine of the class described, a
 95 bed, ribbon carrying mechanism mounted thereon, a carriage, means for reciprocating said carriage, a perforated plate carried by said carriage, a platen with projecting pins under said perforated plate and means for
 100 reciprocating said platen so that it will perforate a ribbon when moving in the direction of the ribbon and withdrawn from said ribbon prior to the movement of the carriage in the opposite direction from the
 105 movement of the ribbon and a stripper plate.

2. A machine of the class described, a bed, ribbon carrying means supported by said bed, a carriage having a reciprocating movement, a perforated plate movable with said
 110 carriage, a reciprocating punch carried by said carriage, means for cooperation with the perforations of said plate, and a stripper plate for cooperation with said punch.

3. In a machine of the class described, a
 115 bed a reciprocating carriage carried by said bed, means for moving said carriage, a perforated plate carried by said carriage, guides adjacent to said plate, a reciprocating platen below said perforated plate, and
 120 means for moving the same, pins on said platen adapted to enter said perforations in said plate, and a stripper plate mounted on said pins.

4. In a machine of the class described, a
 125 bed, a reciprocating carriage carried by said bed, means for moving said carriage, a perforated plate carried by said carriage, guides adjacent to said plate, a reciprocating platen adjacent said perforated plate,
 130

and means for moving the same, pins on said platen adapted to enter said perforations in said plate, and a stripper plate mounted on said pins.

- 5 5. In a machine of the class described, a bed, a reciprocating carriage thereon, means for moving said carriage, a perforated plate, a reciprocating platen, means for moving the same, means on the platen
10 adapted for coöperation with said perfo-

rated plate, and a stripper plate carried by said means.

Signed at the city of New York, county of New York, in the State of New York this 3rd day of November 1909.

CHARLES A. DRUCKLIEB.

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GUSTAVE I. ARONOW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."