June 13, 1933. J. KRELL 1,913,890

PRINTING MACHINE

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FIG. 1.

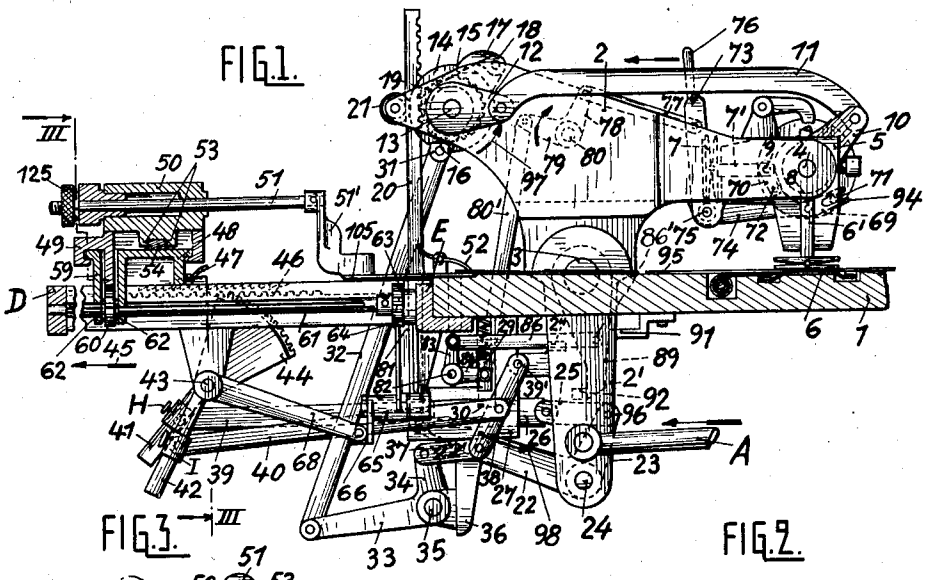


FIG. 3.

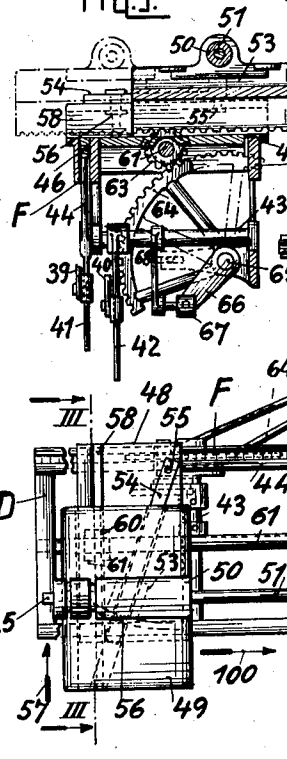


FIG. 2.

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FIG. 2a

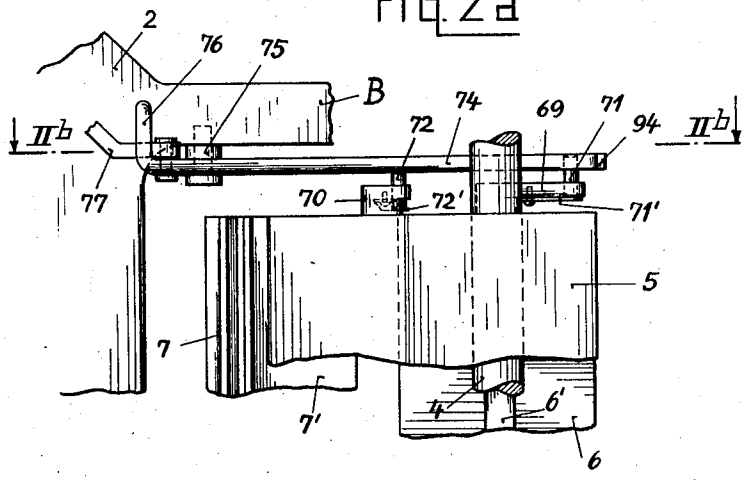
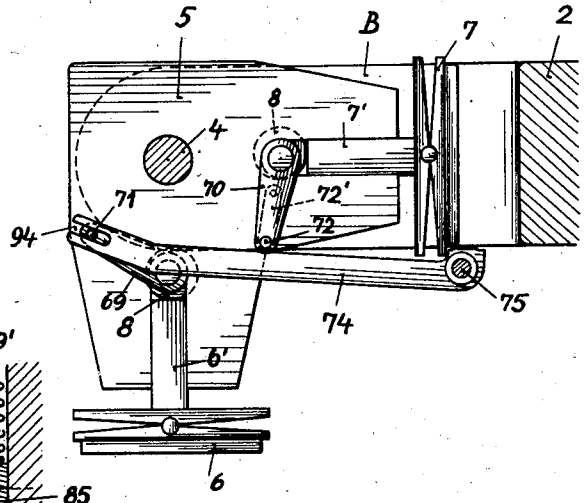


FIG. 2b



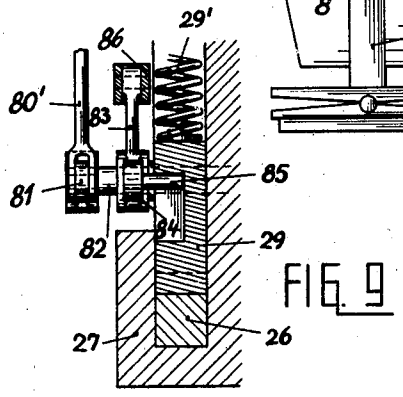


FIG. 9

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FIG. 4.

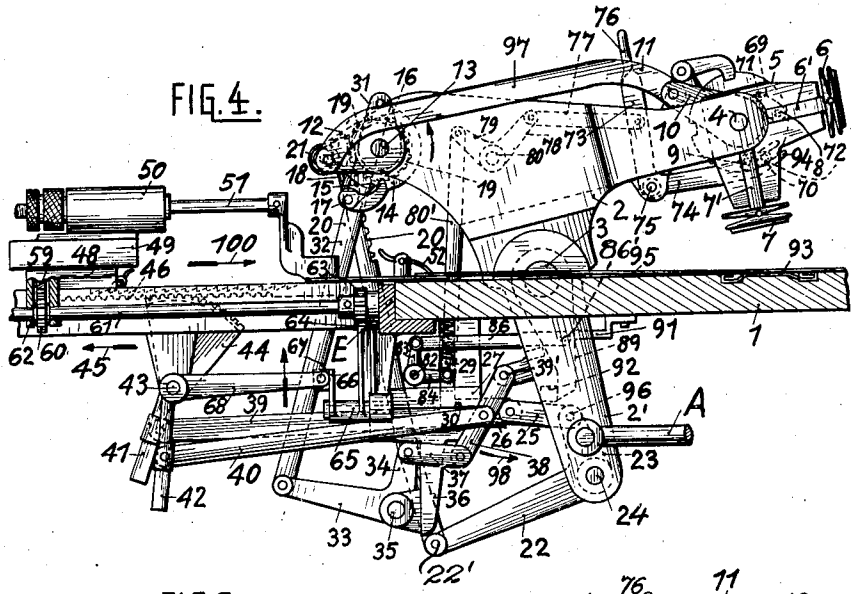


FIG. 6.

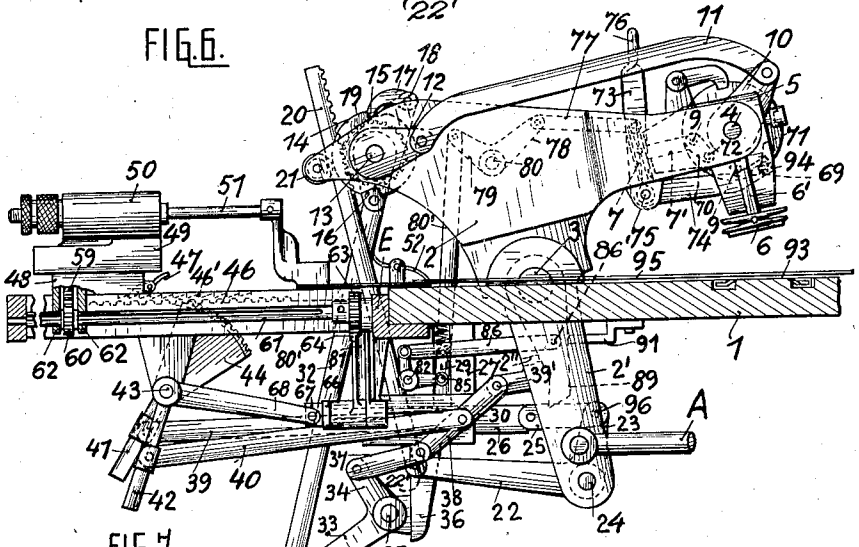


FIG. 7.

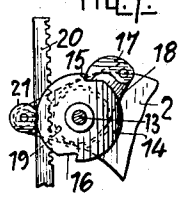
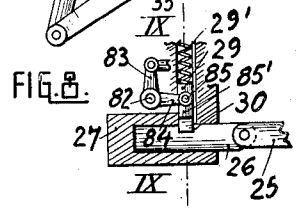


FIG. 8.



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FIG. 10.

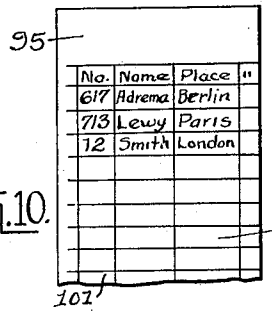


FIG. 5.

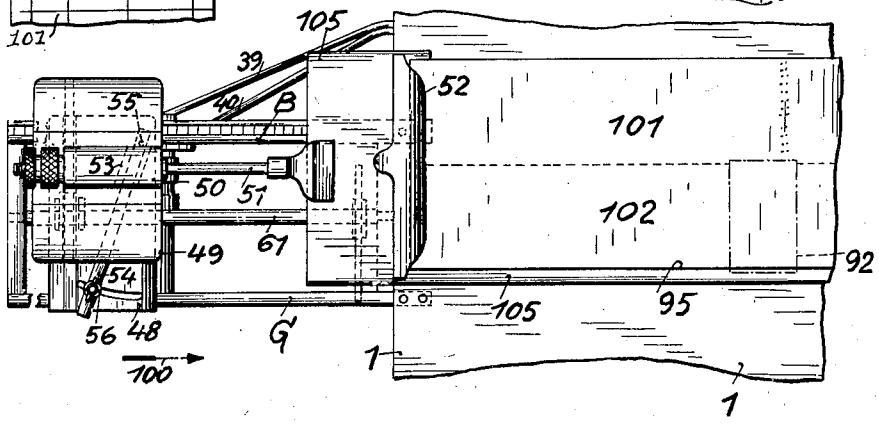


FIG. 11.

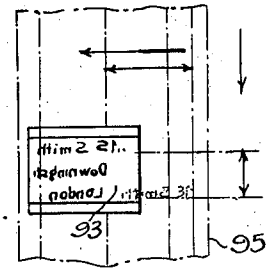


FIG. 6a.

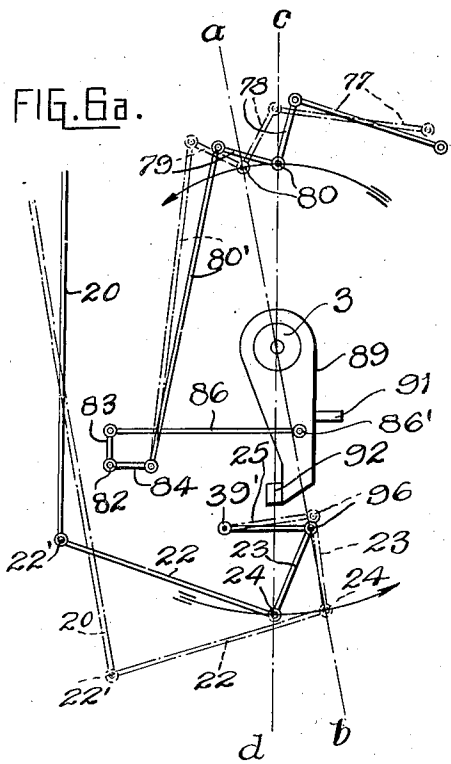
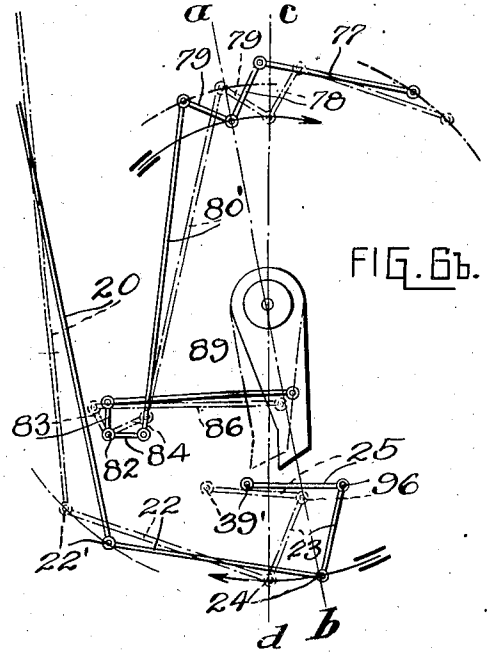


FIG. 6b.



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FIG. 22.

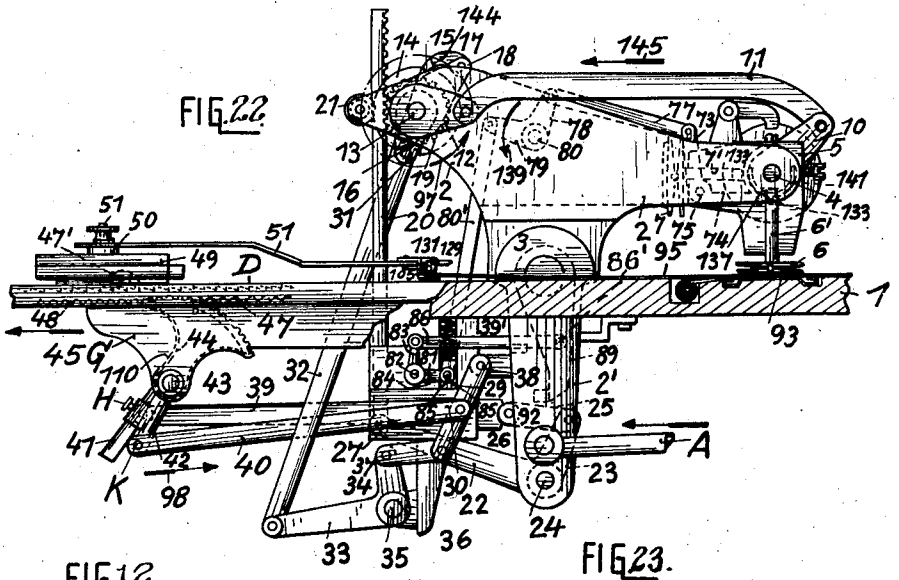


FIG. 23.

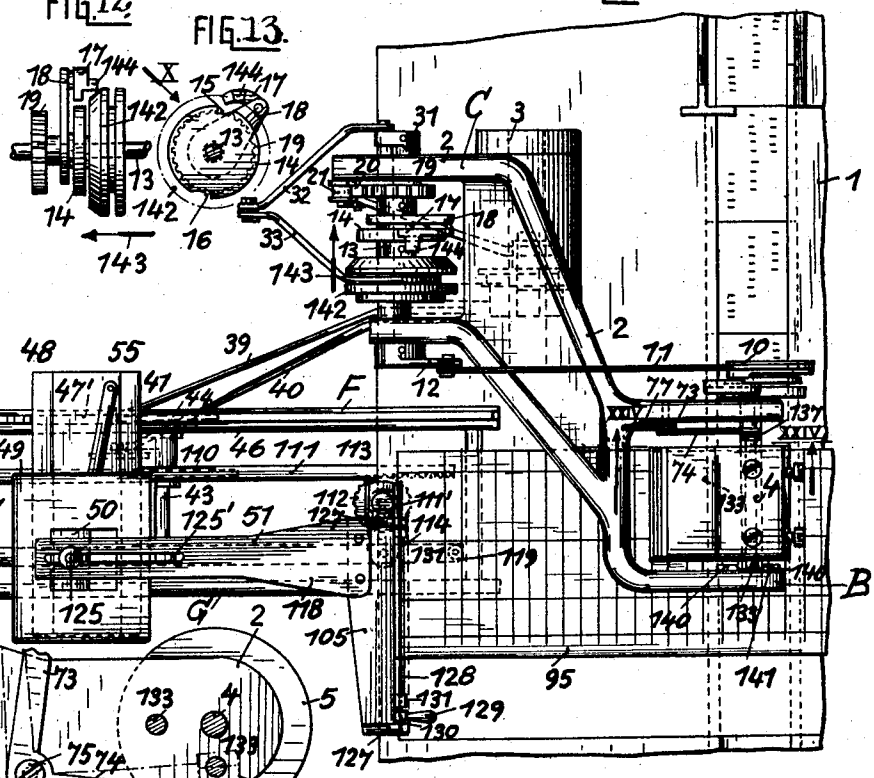


FIG. 12.

FIG. 13.

FIG. 24.

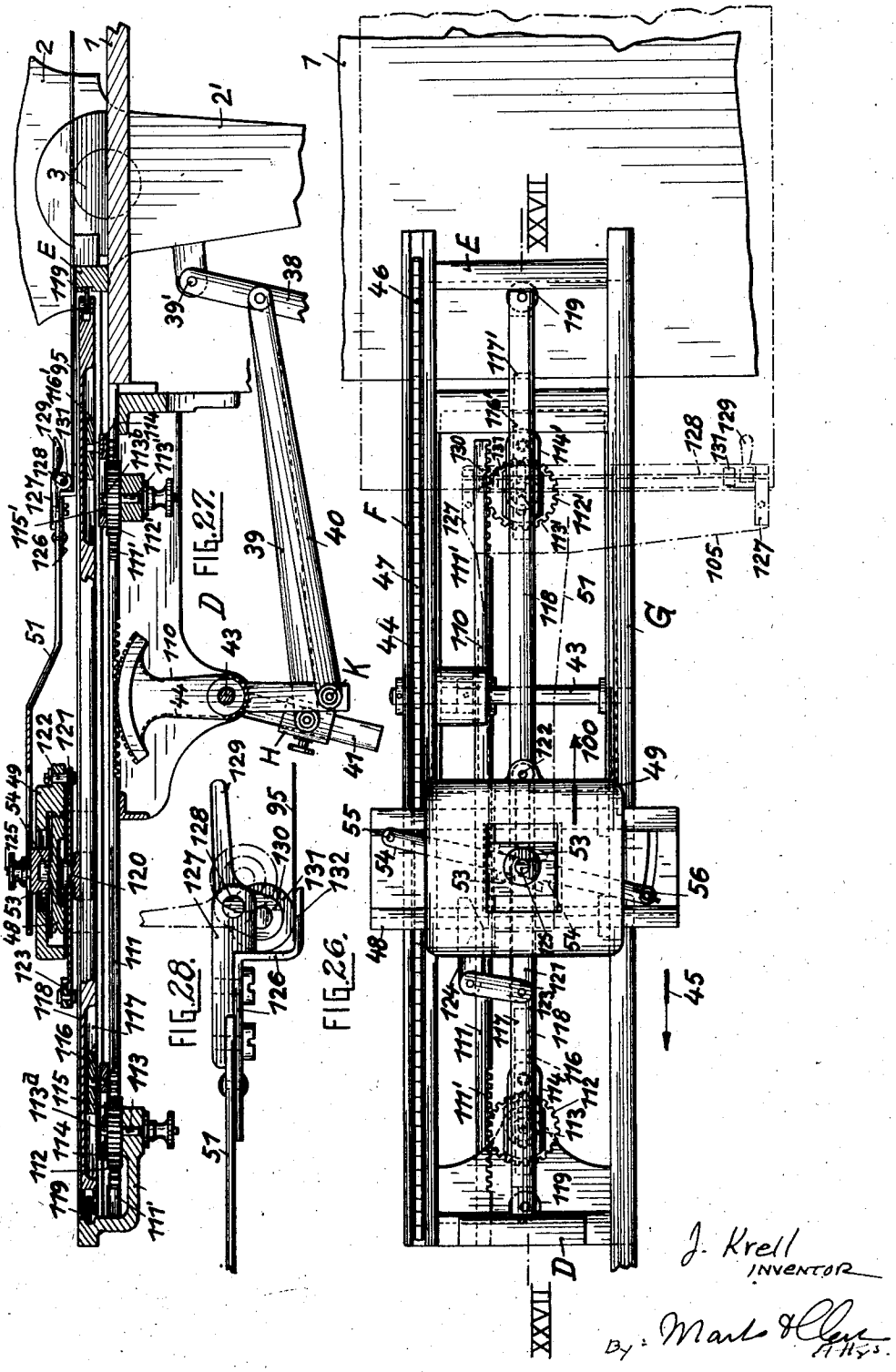
J. Krell
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June 13, 1933. J. KRELL 1,913,890

PRINTING MACHINE

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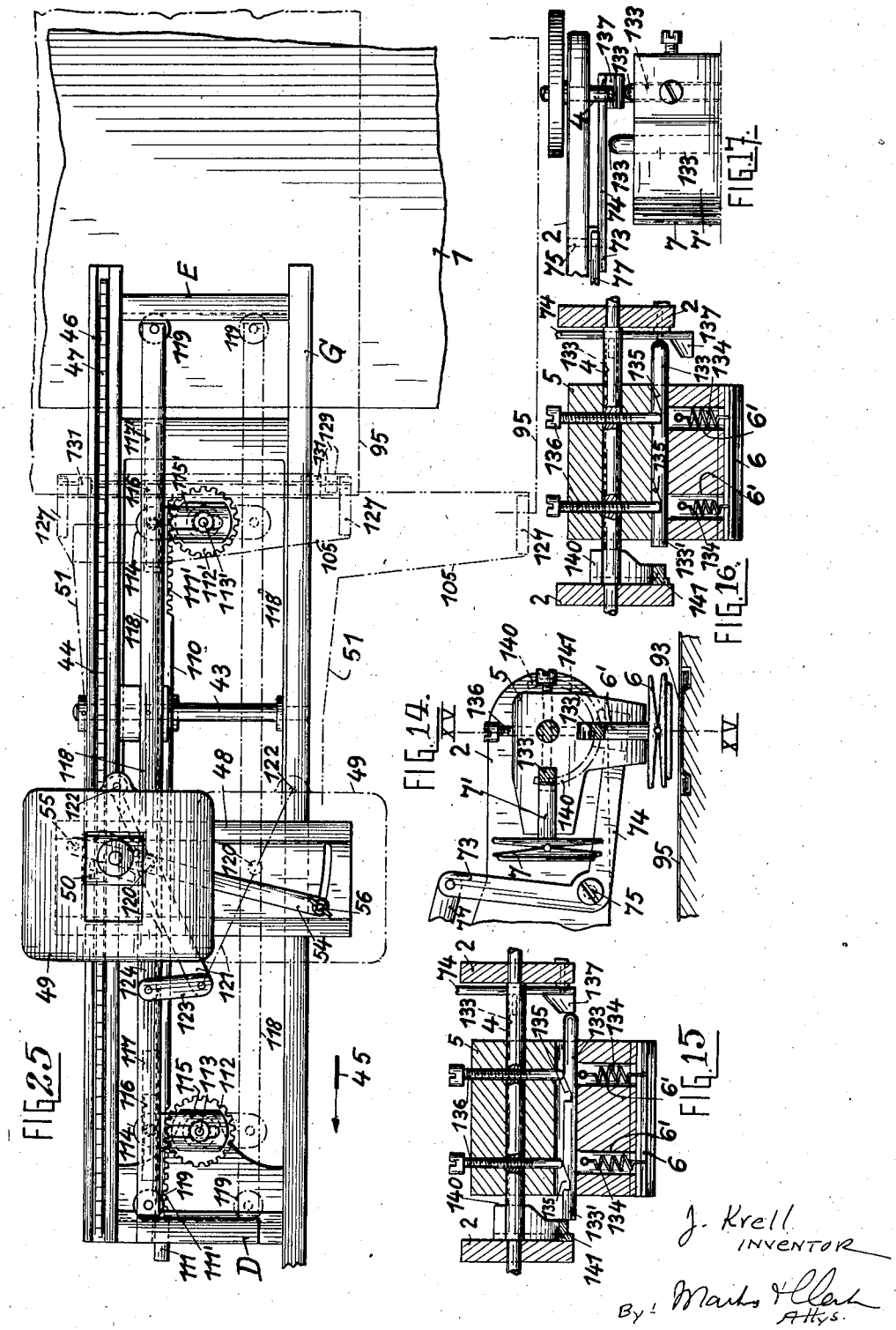
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June 13, 1933. J. KRELL 1,913,890

PRINTING MACHINE

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PRINTING MACHINE

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FIG. 31

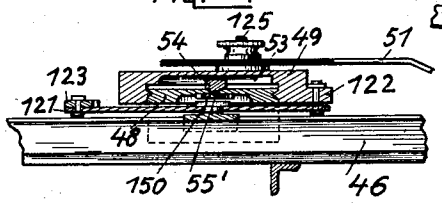


FIG. 20

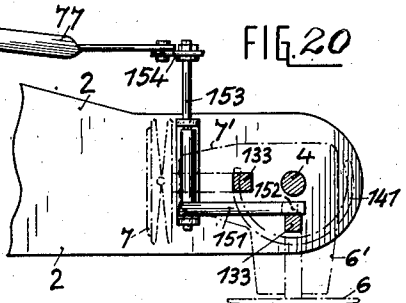
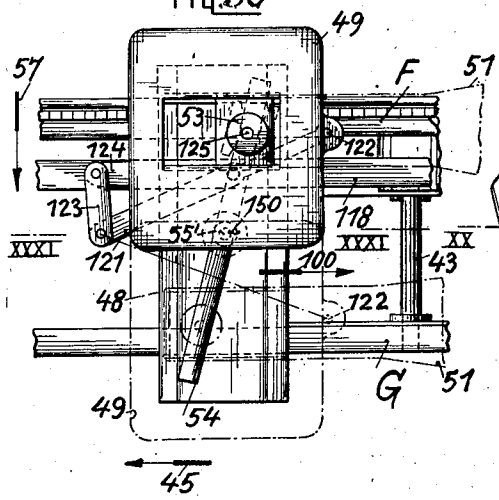


FIG. 30



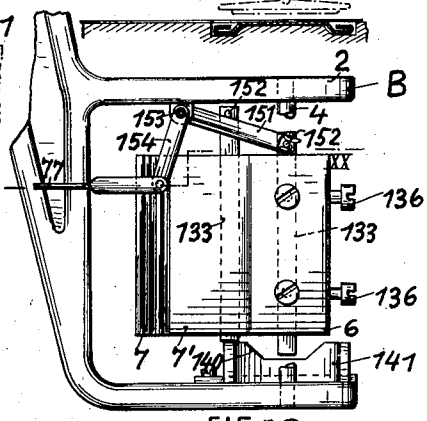
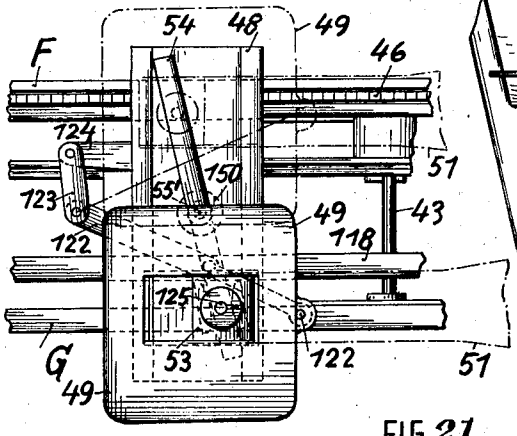


FIG. 19

FIG. 29.



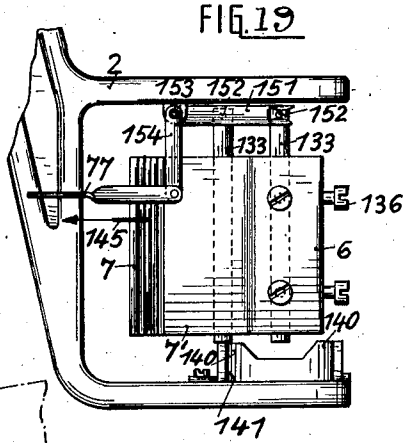
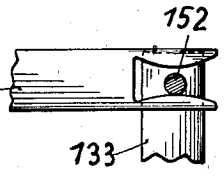


FIG. 18.

FIG. 21



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Attys

Patented June 13, 1933 1,913,890

UNITED STATES PATENT OFFICE

JOSEPH KRELL, OF BERLIN-ZEHLENDORF, GERMANY

PRINTING MACHINE

Application filed August 21, 1929, Serial No. 387,530, and in Germany September 7, 1928.

My invention relates to printing machines and particularly to machines for printing addresses.

More particularly, my invention relates to machines of the type having a rocking printing arm, a turret mounted to rotate in the arm, and printing pads in the turret.

According to my invention the turret is rotated by mechanism on the printing arm which is actuated by the rocking motion of the arm, and a control is connected to the mechanism by which a control paper holder is fed so that the successive impressions on the paper are side by side.

In the accompanying drawings I have illustrated by way of example two types of machines embodying invention:

Fig. 1 is a partly sectional elevation of the first machine, with the printing arm lowered.

Fig. 2 is a plan view of the machine.

Fig. 2*a* is a plan view showing the mechanism for controlling the platens in the turret head, drawn to a larger scale.

Fig. 2*b* is a section on the line II*b*—II*b* in Fig. 2*a*.

Fig. 3 is a section on the line 3—3 in Fig. 1.

Fig. 4 is a partly sectional elevation of the machine with its printing arm raised.

Fig. 5 is a plan view showing the paper feed in the position corresponding to Fig. 4.

Fig. 6 shows the machine in the same position as in Fig. 4, but with the skipping mechanism in active position.

Figs. 6*a* and 6*b* are diagrams illustrating the operation of certain parts of the machine.

Fig. 7 is a detail showing the main control shaft of the machine.

Figs. 8 and 9 are details of the locking means for the skipping mechanism, Fig. 9 being a section on the line 9—9 in Fig. 8.

Figs. 10 and 11 illustrate a list printed in the machine, and a stage of the printing process, respectively.

Fig. 12 is a plan and Fig. 13 an end elevation of means for disconnecting the feeding control through the turret-rotating mechanism.

Fig. 14 is an end elevation of a turret head having a modified platen-controlling mechanism.

Figs. 15 and 16 are sections on the line XV—XV in Fig. 14, showing a platen pushed out and retracted, respectively.

Fig. 17 is a partial plan view of Fig. 14.

Figs. 18 and 19 are views showing a further modified platen-controlling mechanism in the position in which the platens are retracted and pushed out, respectively.

Fig. 20 is a section on the line XX—XX in Fig. 19.

Fig. 21 shows the forked end of an operating lever for the controlling mechanism, drawn to a larger scale.

Fig. 22 is an elevation, and Fig. 23 is a plan view of the second machine.

Fig. 24 is a section on the line XXIV—XXIV in Fig. 23.

Figs. 25 and 26 are plan views of the paper-feeding mechanism, showing it in two distinct positions.

Fig. 27 is a section on the line XXVII—XXVII in Fig. 26.

Fig. 28 shows paper-engaging means on the feeding mechanism, drawn to a larger scale.

Figs 29 and 30 are plan views of a modified feeding mechanism in two distinct positions, and

Fig. 31 is a section on the line XXXI—XXXI in Fig. 30.

The details shown in Figs. 7 to 9, 12 and 13, 15 to 17, 18 to 21, and 29 to 31 may be applied to both machines, while those illustrated in Figs. 25 to 28 are suitable for the second machine only.

Referring now to the drawings, the machine comprises the following principal parts:

A table 1, on which a printing arm 2 is fitted to rock about a pin 3; an extension of the arm below the table, 2′ and a rod A which is pivotally connected to the extension 2′ and is reciprocated from a suitable source of power, not shown; a fork at the front end B of the arm 2 for the reception of turret printing head 5, with its platens 6 and 7, on a shaft 4; another fork at the rear end C of the arm 2 for the reception of the main

control shaft 13; and a rectangular frame having two transverse bars D and E, the bar E being secured to the plate 1, and two stays F and G, for the feeding mechanism. This frame will be referred to as the frame D for the sake of brevity.

Referring now to Figs. 1 to 11, the mechanism for controlling the platens 6 and 7 so as to skip certain matter, will first be described. The printing platens 6 and 7 are secured to the ends of bars 6′ and 7′ which are fitted in the printing turret head 5 and are under the control of rollers 8 and 9, of known type, with levers 69 and 70. Pins 71 and 72 are provided at the ends of the levers 69, 70. The pins are mounted to slide in holes at the ends of their levers and provided with springs 71′ and 72′, respectively, Fig. 2*a*, which urge them toward the adjacent member of the fork B. 73, 74 is a bell-crank lever which is fulcrumed in the printing arm 2 at 75, 76 is a handle at the end of the arm 73, and 94 is a fork, Fig. 2*b*, at the end of the arm 74 which engages the pin 71 or the pin 72, according to which of the two is presented to it by the rotation of the turret head 5. The pin which is not engaged by the fork 94, is forced back by the lever 74 against the reaction of its spring as shown for the pin 72 in Fig. 2*a*. Means such as the springs 134, Figs. 15 and 16, may be provided for holding the bars 6′ and 7′ of the platens engaged with their rollers. 77 is a link connecting the arm 73 with the bell-crank lever 78, 79 which is fulcrumed in the arm 2 at 80 and 80′ is a link connecting the bell-crank lever with a bell-crank lever 83, 84 which is fulcrumed about a pin 82 is a bracket 27 below the table 1. The link 80′ is not connected directly to the bell-crank lever but to an arm 81, Fig. 9, on the shaft or pin 82 which is parallel to the arm 84 of the bell-crank lever. 85 is a pin on this arm which engages in a notch 85′ of a slide 29. This slide is adapted to enter a recess 30, Fig. 8, in the slide 26 under the action of a spring 29′, which slide is connected with the arm 23 of the bell-crank lever 22, 23, a link 25 connecting the slide with a pin 96 on the arm 23, 86 is a link connecting the arm 83 of the bell-crank lever with an arm 89 which is free to turn on the pin 3 of the printing arm 2 the link being connected to the arm 89 at 86′. 92 is a check under electromagnetic control which when advanced prevents clockwise rotation of the arm 89. 91 is a fixed check below the table 1, and 2″ is a check on the extension 2′ of the arm 2 which upon the rocking movement of the arm tends to move the arm 89 into engagement with the check 91.

Rotation is imparted to the turret head by means of the crank 12 on the shaft 13, and the link 11. 14 is a ratchet wheel which is keyed on the shaft 13 and provided with two notches 15, 16 pitched at 180° and 17 is a pawl at the end of an arm 18 on a pinion 19 keyed on shaft 13, which pawl is adapted to engage one of the notches. The rack 20 is fulcrumed to the arm 22 of the bell-crank lever 22, 23 at 23′ and held in the fork C by a roller 21. While the slide 26 is locked by the slide 29 the end of the bell-crank lever 22, 23 is fixed at 96 so that when the printing arm 2 rocks, the lever 22, 23 will reciprocate the rack 20, causing the arm 18 to rotate with the pinion 19, and the pawl 17 to rotate the shaft 13 through the medium of the wheel 14 and its notches 15, 16.

The crank 31 is fixed on the end of the shaft 13 opposite the crank 12. The bell-crank lever 33, 34 which is fulcrumed at 35 on a bracket 36 below the table 1, and connected with the crank 31 by the connecting rod 32, has its arm 34 connected with a link 38 by a link 37. The link 38 is fulcrumed on the extension 2′ at 39′. Pivoted to the link 38 about at its centre are connecting rods 39 and 40. 43 is a shaft which is carried in bearings depending from the stays F and G, as best seen in Fig. 3, 42 is an arm which is keyed on the shaft 43 and connected with rod 40 by an adjustable bracket I, and 41 is an arm which is free to turn on the shaft 43, connected with the rod 39 by an adjustable bracket H, and 44 is a sector extending upwards from the boss of the arm 41. 46 is a rack which is fitted to slide in the stay F and provided with teeth for the engagement of the sector 44 on its lower face, and with ratchet teeth on its upper face.

48 is the lower or principal feed slide which is fitted to be displaced along the stays F, G as indicated by the arrow 45, Fig. 1, 47 is a pawl at the front end of the principal slide which engages the ratchet teeth on the lower face of the rack 46 so that the principal slide will be reciprocated by the sector 44, 49 is the upper slide which is fitted to move transversely on the slide 48, 50 is a sleeve on top of the upper slide, 51 is a rod inserted in the sleeve 50 and held therein by a set screw 125 on the threaded end of the rod 51, 51′ is a bracket extending downwardly from the front end of the rod 51, 105 is a plate secured to the lower end of the bracket 51′, and 52 is a clamp at the end of the plate 105 for holding the paper 95 on the plate. 53 is a U-shaped bracket extending downwardly from the sleeve 50. 54 is a straight-edge which is engaged by the bracket, 55 is a pin about which the straight edge is fitted to turn, and 56 is a wing nut, Fig. 5, by which the straight-edge 54 is fixed in suitable position with respect to the principal slide 48.

59 is a rack depending from the upper slide 49 and extending into a slot in the principal slide, 62 is a pinion splined on a shaft 61 which extends in parallel to the stays F, G, 62, 62 are lugs at either side of the pinion on the slide 48, and 63 is a pinion which is keyed

on the shaft 61 near the bar E. 68 is an arm extending in forward direction from the shaft 43, 67 is a universal joint at the end of the arm, 66 is an arm on a shaft 65 to which the joint 67 is connected, the shaft being carried in the bearing which depends from the stay G, and 64 is a sector which meshes with the pinion 63 and is keyed on the shaft 65.

93 are the printing plates which are fed along the table 1 in a direction at right angles to the plane in which the arm 2 rocks.

Assume that the parts are in the position illustrated in Figs. 1 and 2, with the plate 105 of the paper feed at the rear end of its stroke. The column 101 is presented to the printing head, and the platen 6 is in active position. The electromagnetic check 92 has been operated so as to retain the arm 89, and the slide 26 is locked. After the first imprint has been made, the printing arm is moved upwards into the position Fig. 4 and the bell-crank lever 22, 23 moves into the position Fig. 4 as its end 96 is fixed by its connection with the slide 26. The arm 22 pulls down the rack and rotates the pinion 19 through 180 degrees, by the rack 20, in the direction of the arrow 97, causing the pawl 17 to rotate the shaft 13 through the same angle. The crank 12 on the shaft 13 rotates the turret head 5 so as to present the platen 7 instead of the platen 6. At the same time the crank 31, through the medium of the link 32, the bell-crank lever 33, 34, and the link 37, swings the link 38 in the direction of the arrow 98, and moves the segment 44 in the direction of the arrow 45. At the same time the sector 64 is rotated clockwise as viewed in Fig. 3. While the principal slide 48 now moves in direction 45, the sector 64, through the means described, moves the upper slide 49, with the paper 95, into the position Fig. 5, presenting the column 102 at the printing station. The movement of the principal slide 48 to the rear is made up for by the inclination of the straight-edge 54 which displaces the sleeve 50 in the direction 100, Figs. 4 and 5, so that the paper is presented to the pad 7 in line with the impression in the column 101 which the platen 6 has made, 92 being the new impression.

By suitable adjustment of the straight-edge 54, it is possible to vary the distance travelled by the sleeve 50 in the direction 100, for instance, to make it larger than the distance travelled in the direction 45. Thus, if, for instance the first line of the printing plate 93 has been imprinted on the column 101, the third line will be imprinted on the second column 102 in line with the first line. Obviously, however, the printing platens must be so made as to print only the first and third lines. This may be varied as desired, for instance, two lines of each printing plate may be impressed on the paper or two lines by the platen 6, and then one line of the same printing plate by the pad 7.

The next imprint in the column 102 is made below 92 upon the second downward movement of the printing arm 2. During the descent of the printing arm, the shaft 13 is not rotated as the pinion 19 is now rotated in opposite direction. When the arm 2 is raised after having printed, the shaft 13 is rotated again, the platen 6 is presented and the next imprint is made in the column 101.

The operation which has been described will be more readily understood by reference to Fig. 6*a*. The line *a*—*b* corresponds to the raised position of the printing arm 2, as shown in Figs. 4 and 5, and the line *c*—*d* corresponds to the printing position, Fig. 1. The position of parts is indicated in heavy lines for *a*—*b*, and in light lines for *c*—*d*.

It will appear that the arm 89 is held by the retractable electromagnetic check 92 at one side and by the fixed check 91 at the other side. The pivot 86′ is consequently fixed, and so is the bell crank lever 83, 84 and the lower end of the link 80′. As the printing arm rocks, the upper end of the link 80′ moves in the arc of a circle about its pivot at the end of arm 84. While the pivot 80 of the bell crank lever moves about the axis of the shaft 3, as indicated by the arrow in Fig. 6*a*, the end of the arm 79 is guided by the link 80′. The bell-crank lever 78, 79 is rocked and the link 77 is moved to operate the pads 6 and 7. At the same time the pivot 24 of bell-crank lever 22, 23 is moved to the right. Its end 96 is held by the link 25 and locked slide 26, so that the end 22′ is lowered and the rack 20 is pulled down. The rack rotates the pinion 19 and the control for the feeding of the paper holder is operated.

When it is desired to skip a printing plate, the check 92 is retracted. The arm 89 is now free, and so is the end of the arm 83 of the bell-crank lever 83, 84. The rod 80′ now moves the bell-crank lever so that the end of the slide 29 is withdrawn from the notch 26 in the slide 30 and the bell-crank lever 22, 23, at the lower end of the extension 2′ is able to reciprocate the slide 26 but not the rack 20. Consequently, the main control shaft 13 is not rotated and the feeding mechanism is not operated so that, when the machine is restarted for normal operation, the imprint of the next non-skipped plate is made in the immediate vicinity of the imprints already made. On account of the non-rotation of the shaft 13, the turret head 5 is not rotated.

The skipping operation is further illustrated by the diagram Fig. 6*b*. The electromagnetic check 9 has been retracted and the arm 89 is free to rock about the shaft 3. When the printing arm moves from *a*—*b* to *c*—*d* the pivot 80 of the bell-crank lever 78, 79 moves to the right and the pivot 24 of the bell-crank lever 22, 23 moves to the left. The re-

sistance which the turret 5 opposes to the rocking of the bell-crank lever about its pivot 80, is such that the link 77 may be considered as fixed. The link 80′ is entrained by the bell-crank lever 78, 79, and the bell-crank lever 82, 83 is rocked, releasing slide 26. The link 25 is now free so that the bell-crank lever 22, 23 is no longer retained at 96. Its end 22′ describes a circle about the shaft 3 and the rack 20 is rocked about the pinion 19 without rotating it. Neither the turret 5 nor the feeding means for the paper holder are influenced by the rocking of the printing arm 2. When it is desired to cut out the feeding mechanism altogether, for instance, when envelopes are being printed, a cam plate 142 is fitted to slide on the main control shaft 13, Figs. 12 and 13, and adapted to engage below an extension 144 of the pawl 17 with its tapered end when displaced in in the direction of the arrow 143, so as to lift the pawl 17 from the ratchet wheel 14.

A modified skipping mechanism in the turret head 5 is illustrated in Figs. 14 to 17. A slide 133 which is fitted for displacement in parallel to the shaft 4 is allotted to each platen 6 and 7, the bars 6′ and 7′ being divided into two parallel bars, each equipped with a spring 134 for holding it in contact with the flat inner face of the allotted slide 133. 135 are cam faces on the slides, and 136, 136 are adjustable checks for cooperation with the cam faces. Fig. 16 shows one of the slides 133 in skipping position from which it is displaced into the position Fig. 19 by a cam 137 on the end of the lever arm 74. The checks 136 now abut on the parallel face of the slide 133 and move the platen 6 into operating position. When the turret head is rotated from this position to advance the platen 7 the end 133′ of the slide which is opposite the cam 137 strikes a cam 141 on the arm 2 and the slide is returned to the initial or skipping position, Fig. 16.

Referring now to Figs. 18 to 21 the lever 73, 74 is here replaced by a lever 151, 154 which is fitted to rock about a vertical shaft 153 in the fork B of the arm 2, and is pivotally connected with the rod 77 at its arm 154. The free end of the arm 151 is forked as best seen in Fig. 30, and adapted to engage a pin 152 at the end of each slide 133. The slides are otherwise designed as described with reference to Figs. 14 to 17, and cooperate with the cam 141, as described. In the skipping position, Fig. 20, the slide, the pin of which is engaged by the forked arm 151, is pulled out and assumes the position of Fig. 16. When the rod 77 is pulled in the direction 145 by the bell-crank lever 78, 79, as described, the arm 151 is rocked toward the turret head 5 and the slide 133 is moved into the position Fig. 15. When the turret head is rotated, the pins 152 of the two slides 133 alternately enter the fork at the end of the arm 151.

Referring now to Figs. 22 to 27, the machine illustrated in elevation in Fig. 22, and in plan in Fig. 23, is similar to the machine, in Figs. 1 to 6, with the exception of its feeding mechanism. Here the means for reciprocating the upper feeding slide 49 in the direction of the arrow 57, Fig. 23, are operated by a sector 110 on the boss of the arm 42 to which arm the rod 40 is linked at K, Fig. 1. 111 is a rack in mesh with the sector 110, 111′ and 111″ are racks formed in the sides of the rack 111 at right angles to the teeth which mesh with the sector 110, 112, 112′ are pinions meshing with the rack sections 111′, 111″, seated on vertical pins 113, 113′ in the frame D, 114, 114′ are crank arms on the pinions which are slotted at 115, 115′ and seated on extensions 113*a*, 113*b* of the pins 113, 113′ so that the effective length of the crank arms may be varied, 116, 116′ are blocks seated on the crank pins, and 118 is a rod which is slotted at 117, 117′ for the reception of the blocks. 119 are rollers at the ends of the rod 118 which are in contact with the bars D and E of the frame, 121 is a lever which is fulcrumed at the front end of the upper slide 49, and 123 is a link by which the end of the lever 121 is connected to a boss 124 on the lower slide 48. It follows that when the pinions 112, 112′ are rotated the rod 118 is moved from the full-line position, Fig. 25, into the position shown in dotted lines in the same figure, causing the upper slide 49 to be displaced through a greater distance on account of the leverage at 121.

The rod 51 is here shown as pressed of sheet metal, and slotted for being clamped on the upper slide 49 by the screw 125. The clamping means at its front end to which the here Z-shaped, plate 105 is attached, are constituted by a bracket 127, a pin 128 in the bracket, a handle 129 which is fulcrumed on the pin, and a rubber roller 131 in an arm 130 of the handle. The roller 131 is duplicated at the edge of the plate 105, which is opposite the handle 129, as will appear from Fig. 26. In this manner the rear end of the paper 95 is held without any springs by the resiliency of the rollers 131.

Referring now to Figs. 29–31 the straightedge 54 is here pivoted about its center 55′ and provided with a clamping nut 150. In this manner, it is possible to displace the upper slide 49 in parallel to the feed movement of the lower slide 48 in either direction, as will appear from Figs. 29 and 30.

It is understood that I am not limited to the particular construction shown and described by way of example only, as it may be modified in various ways without departing from the gist of my invention.

I claim:

1. A printing machine comprising a rocking printing arm, a turret printing head in said arm, paper feeding mechanism, means

for reciprocating said mechanism transversely to the feeding direction, a main control shaft on said arm which is operatively connected with said turret head, said feeding mechanism and said reciprocating means, a pinion fitted to rotate on said main control shaft, a rack in mesh with said pinion, means on said printing arm for reciprocating said rack, and a pawl-and-ratchet mechanism operatively connected with said pinion for rotating said shaft.

2. A printing machine comprising a rocking printing arm, a turret printing head in said arm, paper feeding mechanism, means for reciprocating said mechanism transversely to the feeding direction, a main control shaft on said arm which is operatively connected with said turret head, said feeding mechanism and said reciprocating means, a pinion fitted to rotate on said main control shaft, a rack in mesh with said pinion, means on said printing arm for reciprocating said rack, a pawl-and-ratchet mechanism operatively connected with said pinion for rotating said shaft, skipping mechanism operatively connected with said arm, and means under the control of said skipping mechanism for rendering active and inactive said rack-reciprocating means.

3. A printing machine comprising a rocking printing arm, a turret printing head in said arm, paper feeding mechanism, means for reciprocating said mechanism transversely to the feeding direction, a main control shaft on said arm which is operatively connected with said turret head, means operatively connected with said arm for rotating said main control shaft through 180 degs. at each operation, a rocking arm operatively connected with said main control shaft, a shaft operatively connected with said rocking arm, a first sector fitted to rotate on said last-named shaft and also operatively connected with said rocking arm, a rack meshing with said sector, a feeding slide forming part of said paper feeding mechanism connected with said rack, a second sector operatively connected with said main control shaft, a transverse slide fitted to move on said feeding slide and means operatively connected with said second sector for moving said transverse slide.

4. A printing machine comprising a rocking printing arm, a paper feeding slide operatively connected with said arm, a support adapted to move transversely on said slide, means operatively connected with said arm for reciprocating said support, means on said slide for varying the angle at which said support reciprocates with respect to said slide, and a paper holder on said support.

5. A printing machine comprising a rocking printing arm, a paper feeding slide, a rack operatively connected with said slide, means operatively connected with said arm for reciprocating said rack, a pinion in mesh with said rack, a support adapted to move transversely on said slide, means operatively connected with said pinion for moving said support, and a paper holder on said support.

6. A printing machine comprising a rocking printing arm, a paper feeding slide, a rack operatively connected with said slide, means operatively connected with said arm for reciprocating said rack, a pinion in mesh with said rack, a crank on said pinion, a bar adapted to be reciprocated by said crank, a support adapted to move transversely on said slide, an operative connection of said bar with said support, and a paper holder on said support.

7. A printing machine comprising a rocking printing arm, a paper feeding slide, a rack operatively connected with said slide, means operatively connected with said arm for reciprocating said rack, a pinion in mesh with said rack, a crank on said pinion, a bar adapted to be reciprocated by said crank, a support adapted to move transversely on said slide, an operative connection of said bar with said support including leverage, and a paper holder on said support.

8. A printing machine comprising a rocking printing arm, a paper feeding slide operatively connected with said arm, a support adapted to move transversely on said slide, means operatively connected with said arm for reciprocating said support, a straight-edge on said slide adapted to guide said support, means for varying the angular position of said straight-edge with respect to said slide, and a paper holder on said support.

9. A printing machine comprising a rocking printing arm, a turret printing head in said arm, paper feeding mechanism, means for reciprocating said mechanism transversely to the feeding direction, a main control shaft on said arm which is operatively connected with said turret head, said feeding mechanism and said reciprocating means, a pinion fitted to rotate on said main control shaft, a rack in mesh with said pinion, means on said printing arm for reciprocating said rack, a pawl-and-ratchet mechanism operatively connected with said pinion for rotating said shaft, and means on said main control shaft for moving the pawl of said ratchet mechanism beyond its operative position.

10. A printing machine comprising a rocking printing arm, a turret printing head in said arm, printing pads on said head, paper feeding mechanism operatively connected with said arm, means operatively connected with said arm for reciprocating said mechanism transversely to the feeding direction, mechanism operatively connected with said arm for rotating said turret head, slides in said head adapted to move said pads away from said head, and means on said printing

arm and controlled by its reciprocation for moving said slides from their initial position.

11. A printing machine comprising a rocking printing arm, a turret printing head in said arm, printing platens on said head, paper feeding mechanism operatively connected with said arm, means operatively connected with said arm for reciprocating said mechanism transversely to the feeding direction, mechanism operatively connected with said arm for rotating said turret head, slides in said head adapted to move said platens away from said head, a bell-crank lever on said printing arm, a cam on said lever adapted to reciprocate said slides, and means for moving said bell-crank lever in conformity with the movement of said arm.

12. A printing machine comprising a rocking printing arm, a turret printing head in said arm, printing platens on said head, paper feeding mechanism operatively connected with said arm, means operatively connected with said arm for reciprocating said mechanism transversely to the feeding direction, mechanism operatively connected with said arm for rotating said turret head, slides in said head adapted to move said platens away from said head, a bell-crank lever on said printing arm, a fork on said bell-crank lever adapted to engage said slides alternately, and means for moving said bell-crank lever in conformity with the movement of said arm.

13. A printing machine comprising a rocking printing arm, a turret printing head in said arm, printing platens on said head, paper feeding mechanism operatively connected with said arm, means operatively connected with said arm for reciprocating said mechanism transversely to the feeding direction, mechanism operatively connected with said arm for rotating said turret head, slides in said head adapted to move said platens away from said head, means on said printing arm and controlled by its reciprocation for moving said slides from their initial position, and a cam on said arm for returning said slides to initial position.

14. A printing machine comprising a rocking printing arm, a turret mounted to rotate on said arm, printing platens mounted to be displaced on said turret, means on said rocking arm adapted to be actuated by its rocking motion for advancing and retracting said platens, mechanism on said printing arm adapted to be actuated by the rocking motion of said printing arm for rotating said turret, a paper holder, means operatively connected to said mechanism for feeding said holder so that the successive impressions on the paper are side by side, and means for locking and releasing a member of said mechanism and of said means for controlling said printing platens.

15. A printing machine comprising a frame, a printing arm mounted to rock on said frame, a turret mounted to rotate on said arm, printing platens on said turret, mechanism on said printing arm adapted to be actuated by the rocking motion of said printing arm for rotating said turret, a paper holder, means operatively connected to said mechanism for feeding said holder so that the successive impressions on the paper are side by side, a slide mounted to be displaced on said frame and adapted to lock said mechanism, and means operatively connected to said printing-platen controlling means for locking and releasing said bolt.

In testimony whereof I affix my signature.

JOSEPH KRELL.