Aug. 13, 1940. J. KRELL 2,211,661

ADDRESS-PRINTING MACHINE WITH BLANK FEEDING MECHANISM

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Fig. 1

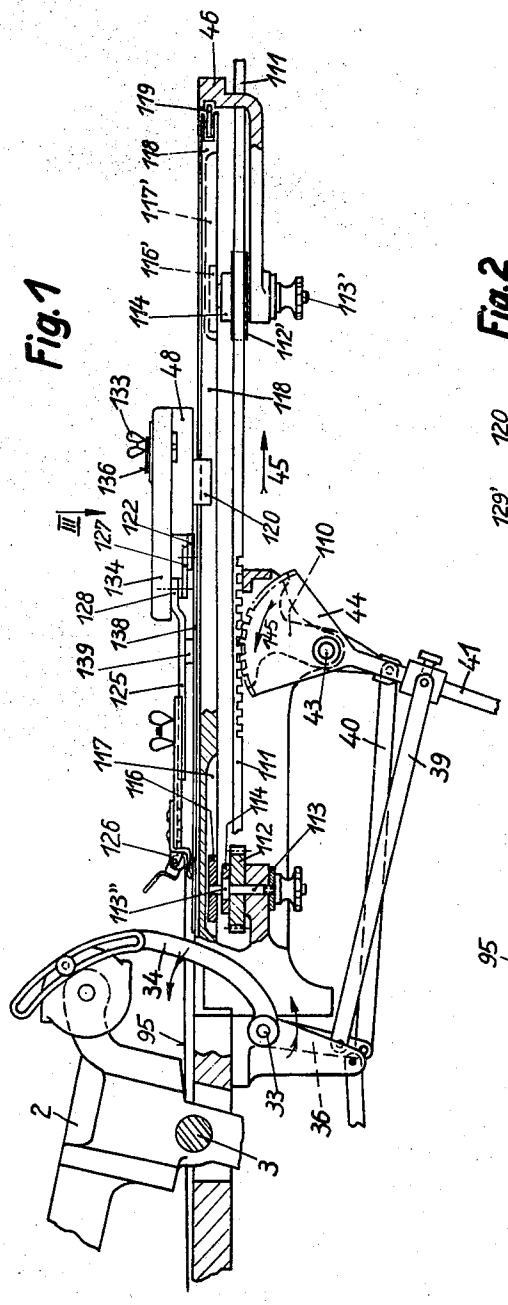
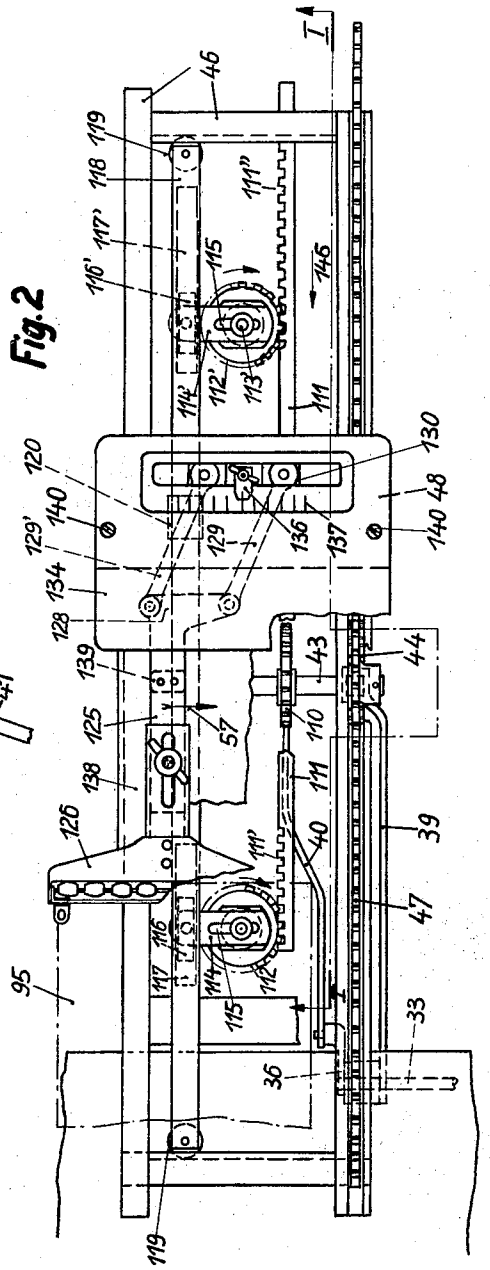


Fig. 2



Inventor
J. Krell

By:
Glascock Downing & Seebold
Attorneys.

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Fig. 3

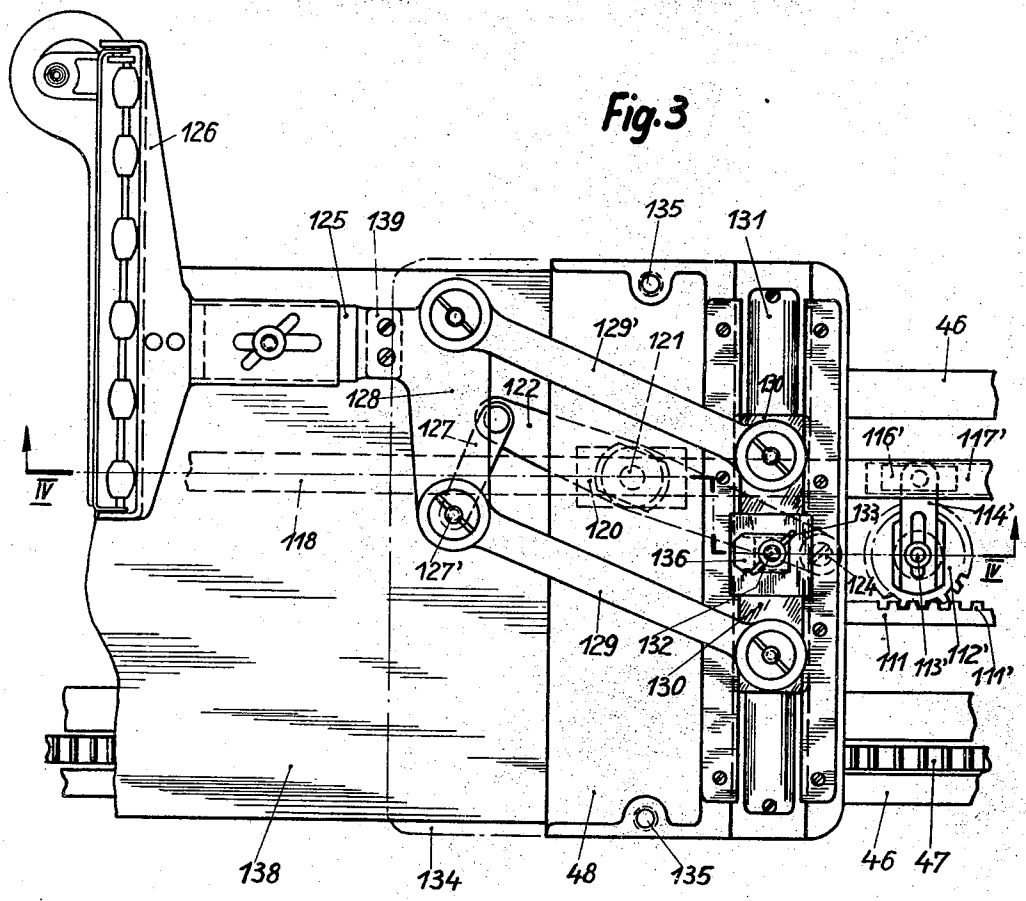
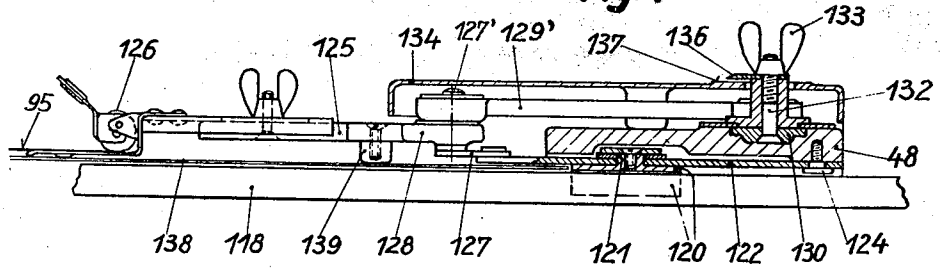


Fig. 4



Inventor
J. Krell

By:
Glascock Downing & Seebold
Attorneys.

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Fig.5

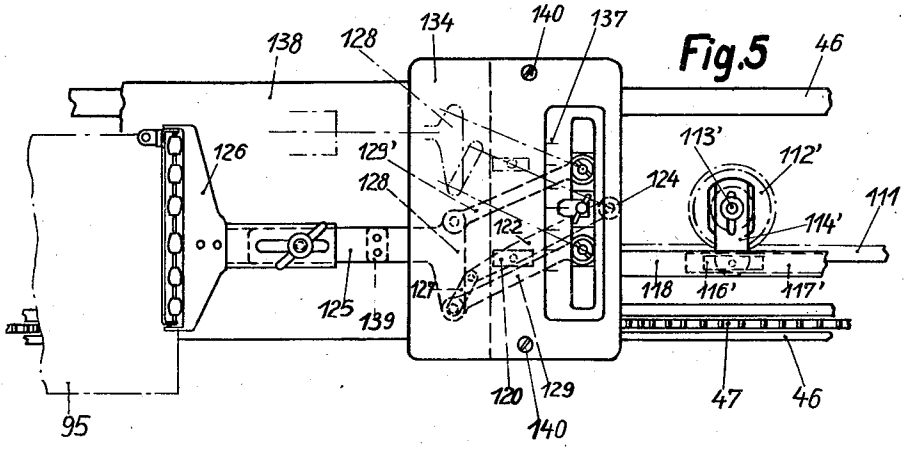
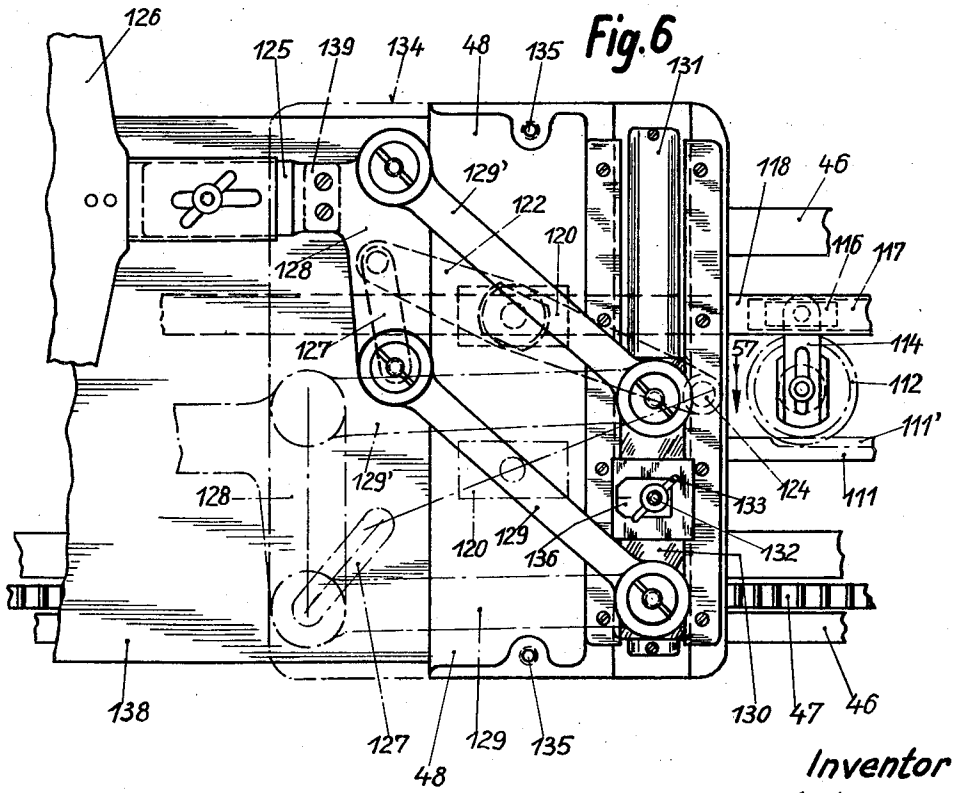


Fig.6



Inventor
J. Krell

By:
Glascock Downing & Seebold
Attorneys.

Patented Aug. 13, 1940 2,211,661

UNITED STATES PATENT OFFICE

2,211,661

ADDRESS-PRINTING MACHINE WITH BLANK FEEDING MECHANISM

Joseph Krell, Berlin-Zehlendorf, Germany

Application July 21, 1939, Serial No. 285,770
In Germany July 23, 1938

3 Claims. (Cl. 271—54)

My invention relates to an address printing machine with a blank feeding mechanism. The mechanism comprises a blank holder which is fed step by step in the longitudinal direction of the blank when an address has been twice printed on the blank from a given printing plate and is shifted laterally, that is, transversely to the feeding direction, when the first impression has been made, so as to present the blank to the printing plate for the second impression.

It is an object of my invention to provide a mechanism of the kind described which is very simple and in which the laterally shiftable parts are light, so that noise and wear are reduced.

An important feature of the invention is that a rod which is arranged to be shifted laterally in the frame of the blank feeding mechanism, is operatively connected to a one-armed lever, or rocker, which is fulcrumed at one end on the support for the blank holder and whose other end is connected to the blank holder by a short link. The blank holder is guided by a pair of parallel links which are fulcrumed on the support.

In order to combine with the lateral shifting movement thus imparted to the blank holder, an adjustable longitudinal movement of the holder, in a preferred embodiment of my invention the parallel links are fulcrumed on an anchoring plate or slide which is arranged to be shifted at right angles to the feeding movement on the support, and can be held on the support in any desired position.

In the accompanying drawings an address printing machine equipped with the blank feeding mechanism embodying my invention is illustrated by way of example.

In the drawings

Fig. 1 is an elevation, for the major part in section on the line I—I in Fig. 2, showing a portion of the address printing machine and the blank feeding mechanism with its blank holder ready for the first impression from a given printing plate.

Fig. 2 is a plan view of Fig. 1, partly broken away.

Fig. 3 is a detail plan view, drawn to a larger scale and showing the blank holder in the same position as in Fig. 2, and the anchoring plate on which the parallel links are fulcrumed, in its central position.

Fig. 4 is a section on the line IV—IV in Fig. 3.

Fig. 5 is a plan view corresponding to Fig. 2 but showing the blank holder ready for the second impression.

Fig. 6 is a plan view corresponding to Fig. 3 but showing the anchoring plate in its final position at the right, as viewed in the feeding direction.

Referring now to the drawings, and first to Figs. 1 and 2, a printing head 2 is pivotally mounted on the table of the machine at 3. The mechanism for oscillating the printing head and for feeding printing plates to a printing station has not been illustrated as it is not a part of the present invention.

The printing head is equipped with a pin engaging in a slot at the upper end of an arm 34 on a shaft 33 below the table. An arm 36 extends downwardly from the shaft 33 and the left-hand ends of connecting rods 39 and 40 are pivotally connected to the arm 36.

The right-hand end of the rod 39 is pivotally connected to a cross head which is mounted to slide on a rod 41 and to be fixed thereto by a set screw. The rod 41 is the tail end of a feeding sector 44 on a shaft 43. The sector 44 meshes with a vertical rack 47 which is mounted to slide in the frame 46 of the feeding mechanism and, in manner per se known in address printing machines, feeds the blank holder stepwise in the direction of the arrow 45 in Fig. 1 when the sector 44 is turned clockwise, that is, against the arrow 145.

Mounted to slide on the frame 46 is a support 48 for the blank holder. By means which will be described, the support holds and guides a clamp 126 at the rear end of the blank holder in which is inserted the blank 95. A pawl, not shown, on the support 48 engages in teeth at the upper end of the rack 47 when the rack moves to the right in the feeding direction 45, carrying the support 48 in the same direction. In the opposite direction, the pawl is idle.

The mechanism for shifting the blank holder, with its clamp 126, laterally, that is, transversely to the feeding direction 45 and with and against the arrow 57 in Fig. 2, will now be described. The right-hand end of the connecting rod 40 is pivotally connected to the tail end of a shifting sector 110, also on the shaft 43. The shifting sector 110 meshes with vertical teeth on a rack 111 which is mounted to slide in the frame 46 and has horizontal teeth 111′ and 111″ at either end. The horizontal teeth 111′ at the left mesh with a pinion 112, and those 111″ at the right mesh with a pinion 112′. The two pinions and the elements connected thereto are exactly alike and so only the pinion 112 will be described, the corresponding elements for the pinion 112′ being marked with the index "′." The shaft 113 of

the pinion 112 is mounted to rotate in a suitable bearing of the frame 46. A crank 114 is placed on a flange 113'' of the shaft 113 with a slot 115 so that the effective length of the crank can be varied. At its free end the crank 114 is pivotally connected to a slide block 116 in a slot 117 in a rod 118. The rod 118 has rollers 119 at both ends which engage in grooves in the tranverse stays of the frame 46 and it will appear that the rod 118 is shifted to and fro laterally as the pinions 112 and 112' rotate.

A rocker 122 is fulcrumed below the support 48 at 124, as best seen in Fig. 4. A U-shaped bracket 120 is placed on the rod 118 and the rocker 122 engages a pin 121 on the rocker. A short link 127 connects the free end of the rocker to a pin 127' on the blank holder. The blank holder, as best seen in Figs. 3 and 6, comprises the clamp 126 already referred to and an angle member 125, 128. The clamp 126 is adjustably mounted on the arm 125 of the angle member by means here shown as a wing nut. A base plate 138 extends to the left from the lower side of the support 48 as far as below the clamp 126 and the angle member is equipped with a block 139, preferably of hard rubber, which slides on the base plate 138 as the blank holder moves. A pair of parallel links 129 and 129' are pivotally connected to the ends of the arm 128 of the angle member with their left-hand ends, and their right-hand ends are fulcrumed on an anchoring plate 130. This plate is mounted to slide in a groove 131 in the support 48 and held in any desired position in the groove by a bolt 132 and a wing nut 133, as best seen in Fig. 4.

A cover 134 is placed on top of the support 48 and secured by screws 140 engaging in threaded holes 135 in the support. An index 136 is placed on the bolt 132 below the wing nut 133 for cooperation with a graduation 137 on the cover 134.

The operation of the blank feeding mechanism will now be described. The parts are supposed to be in the position illustrated in Figs. 1 and 2, in which the first impression is made of a printing plate which has just arrived at the printing station. The slot at the upper end of the arm 34 is so curved that the arm is not influenced when the printing head 2 descends for making the first impression on the blank 95 at the printing station. When the impression has been made and the printing head 2 moves upwards into its initial position, the arm 34 is turned anti-clockwise, as indicated by the arrow in Fig. 1, causing partial rotation of the shaft 33 and a corresponding movement of the arm 36 in the direction of its arrow. This causes both sectors 44 and 110 to be turned in the direction of the arrow 145 through the connecting rods 39 and 40. Movement of the feeding sector 44 in this direction is idle, that is, does not feed the mechanism in the direction of the arrow 45, but the shifting sector 110 carries its rack 111 to the left in the direction of the arrow 146 in Fig. 2. This causes rotation of the pinions 112 and 112' in clockwise direction, as indicated by the arrows in Fig. 2, and lateral shifting of the rod 118 in the direction of the arrow 57 in Fig. 2 and into the position illustrated in Fig. 5. The rod, through the means described, moves the rocker 122 in to the position illustrated in Fig. 5, and throws the blank holder into that position in which the blank 95 is ready for the second impression. In other words, the blank is shifted transversely to the feeding direction. By the parallel links 129, 129' the angle member 125, 128 is shifted in parallel relation to itself. When the blank 95 has arrived in the position illustrated in Fig. 5, and the printing head 2 descends, the second impression of the printing plate at the printing station is made on the blank below the first impression.

When this operation has been performed, a fresh printing plate is moved to the printing station by means known in this art while the printing head 2 ascends. The ascending printing head returns the arm 34 into the position illustrated in Fig. 1 and this causes rotation of the two sectors 44 and 110 against the arrow 145. The feeding mechanism is now fed by the sector 44 in the direction of the arrow 45 and, at the same time, the rod 118 is returned into the position shown in Fig. 2 from that shown in Fig. 5, and so is the blank holder. Two impressions are now made by the fresh printing plate in the manner described.

In certain cases, for instance, if it is desired that in the second impression of a given printing plate on the blank 95 the second line of the printing plate should be at the side of the first line of its first impression in which case obviously the first line of the printing plate is not printed in the second impression: it is possible by displacing the anchoring plate 130 in the groove 131 from the central position in Fig. 3, to place the second impression of each printing plate not exactly below the first impression but in staggered relation with respect to the first impression in the longitudinal direction of the blank.

The graduation 137 and the index 136 serve for determining the amount of displacement required for the anchoring plate 130.

Referring now to Fig. 6, it has been assumed that the anchoring plate 130 has been shifted to the right, as viewed in the feeding direction 45, as far as it will go, and secured by the wing nut 133. With this position of the anchoring plate, when the rod 118 is shifted from the position illustrated in Fig. 6 into that illustrated in Fig. 5 in the direction of the arrow 57, Fig. 2, the blank holder moves into the position shown in dot-and-dash lines in Fig. 6 and the blank 95 is shifted to the left, against the arrow 45. When the anchoring plate 130 is shifted to the right, the blank holder is moved in the opposite direction, that is, with the arrow 45.

I claim:

1. In an address printing machine, a blank feeding mechanism comprising a blank holder, means for feeding the blank holder a step transversely and a step longitudinally of the direction of the blank, a rod arranged to be shifted laterally, means operatively connected to the feeding means for shifting the rod laterally, means operatively connected to the rod for shifting the blank holder laterally, and means for holding the blank holder in parallel relation to itself while it is shifted.

2. In an address printing machine, a blank feeding mechanism comprising a support, a blank holder, means for feeding the support a step transversely and a step longitudinally of the direction of the blank, a rod arranged to be shifted laterally, means operatively connected to the feeding means for shifting the rod laterally, a rocker fulcrumed on the support at one end, a link connecting the other end of the rocker to the blank holder, means on the rod for swinging the rocker about its fulcrum, and a pair of parallel links fulcrumed on the support and pivotally connected to the blank holder.

3. In an address printing machine, a blank feeding mechanism comprising a support, a blank holder, means for feeding the support a step transversely and a step longitudinally of the direction of the blank, a rod arranged to be shifted laterally, means operatively connected to the feeding means for shifting the rod laterally, a rocker fulcrumed on the support at one end, a link connecting the other end of the rocker to the blank holder, means on the rod for swinging the rocker about its fulcrum, an adjustable anchoring plate on the support, and a pair of parallel links fulcrumed on the plate and pivotally connected to the blank holder.

JOSEPH KRELL.