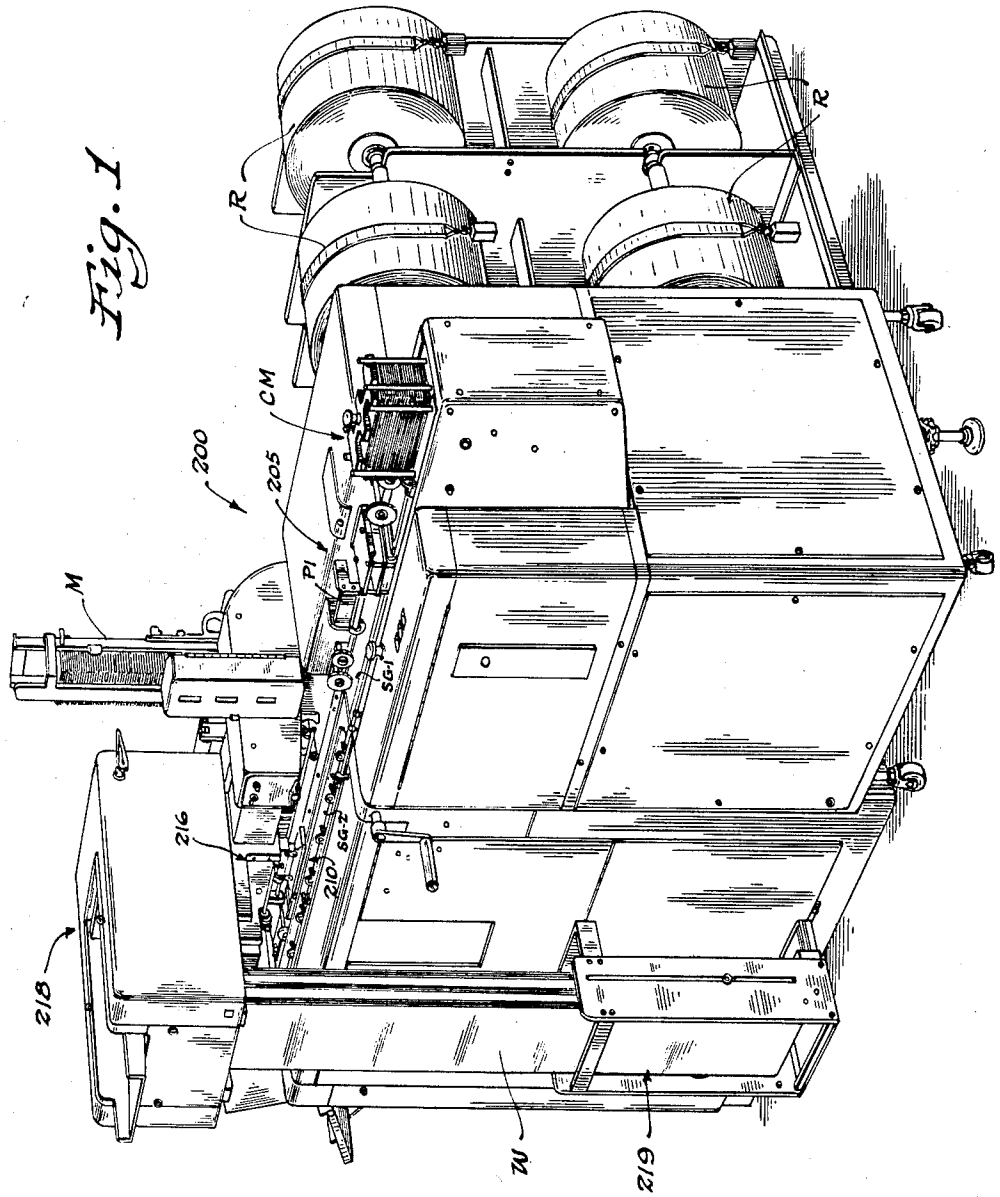
Jan. 1, 1957 F. E. CURTIS 2,775,936

ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 1

Fig. 1



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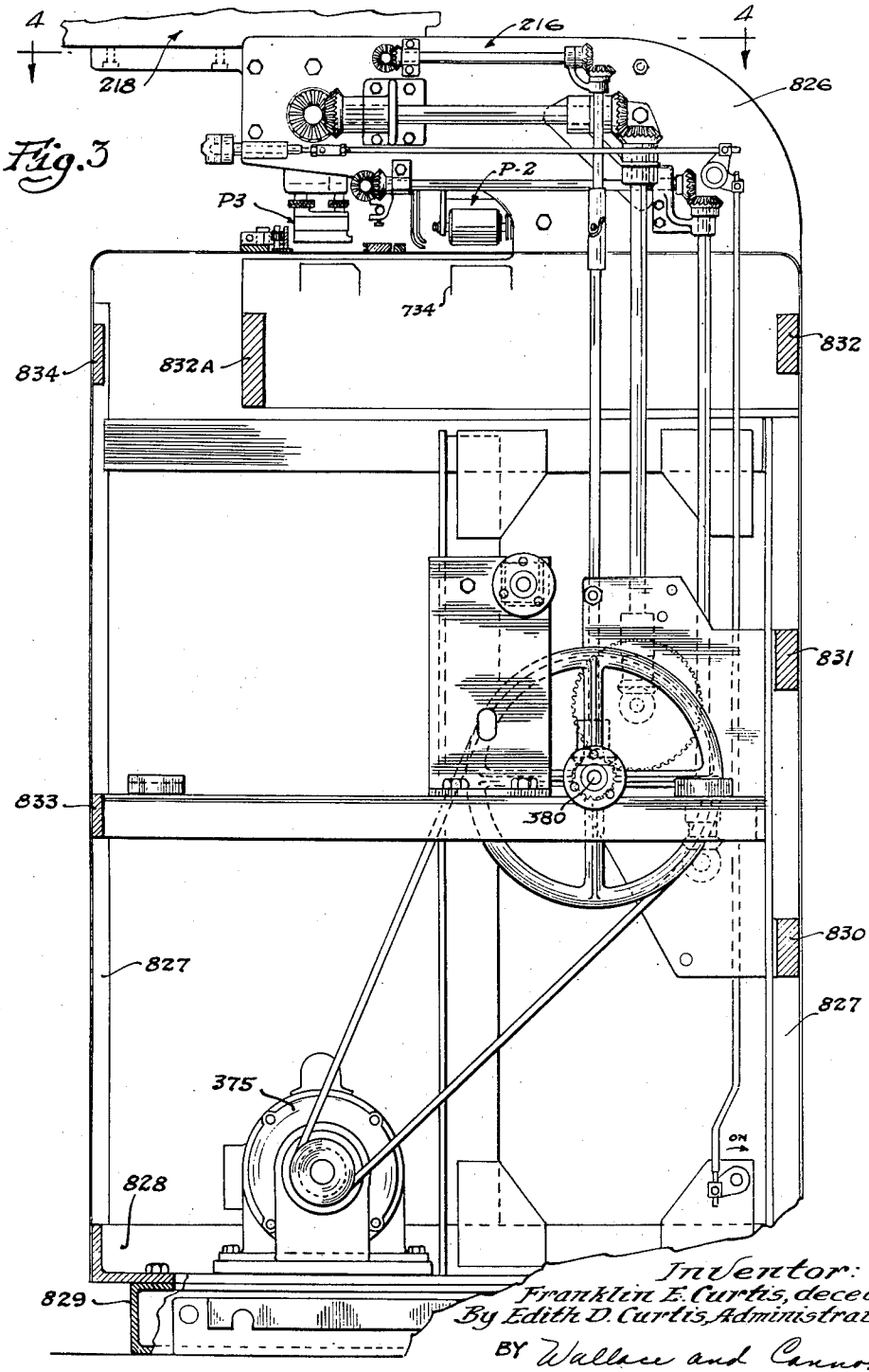
ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 2

Fig. 3



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ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 3

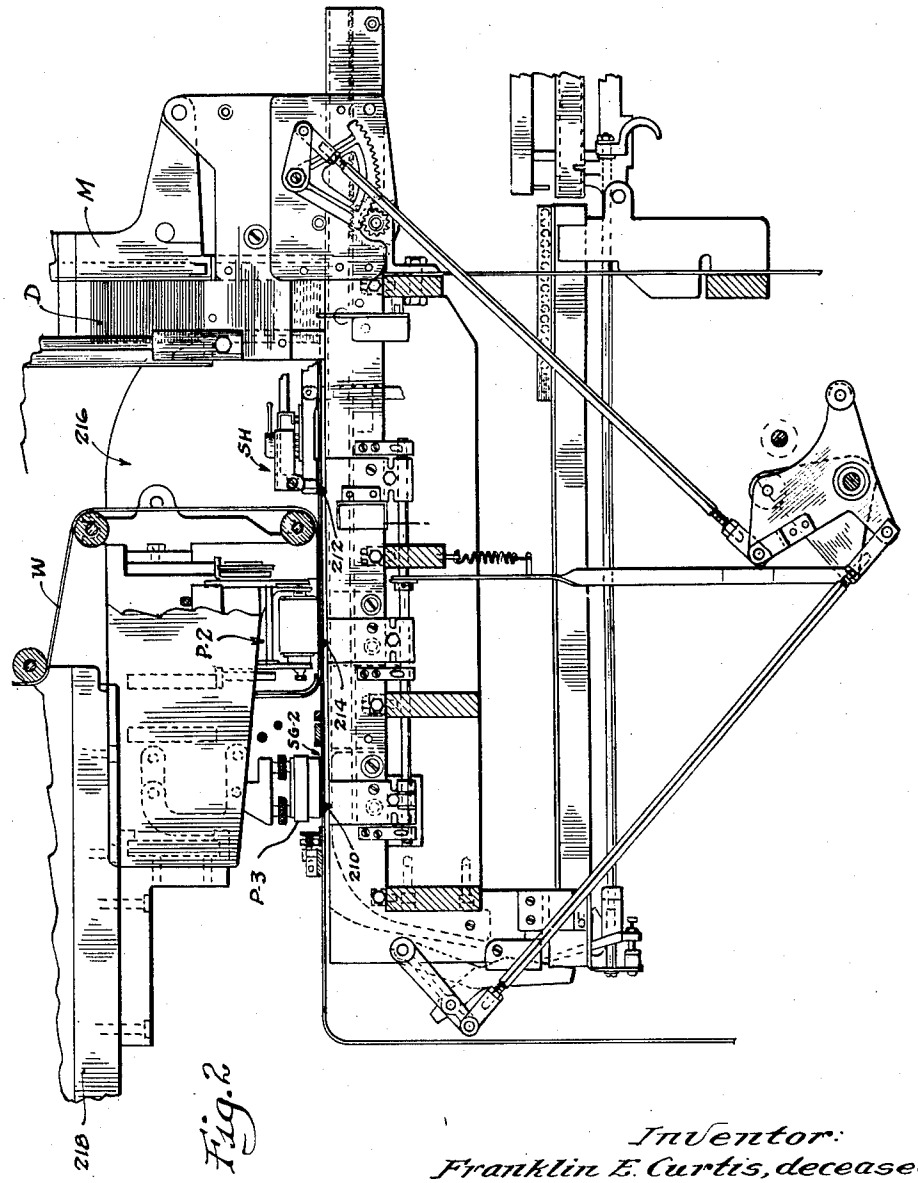

Fig. 2

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ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 4

Fig. 4

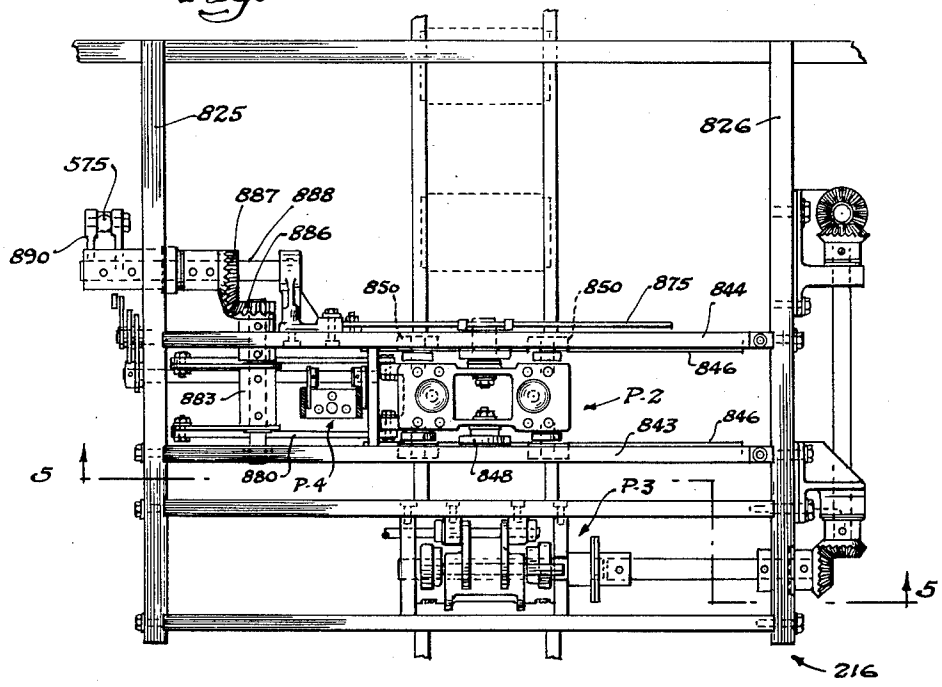
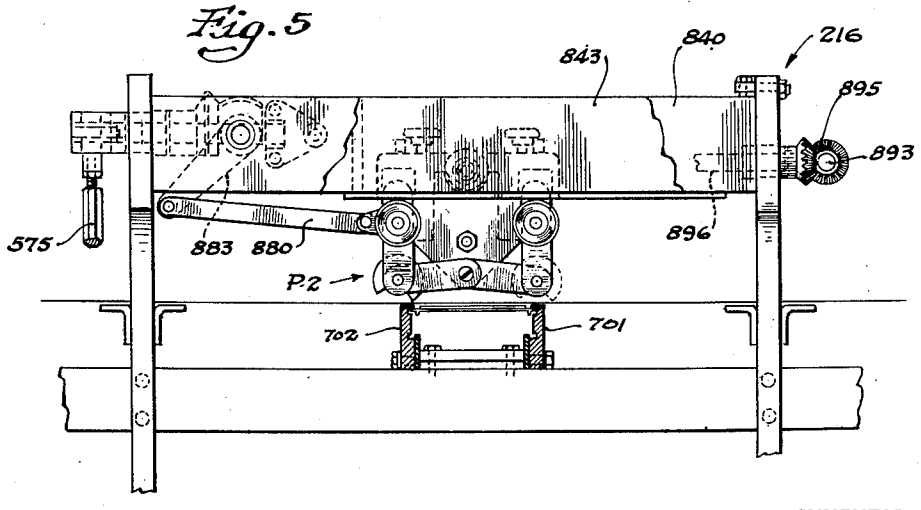


Fig. 5



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ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 5

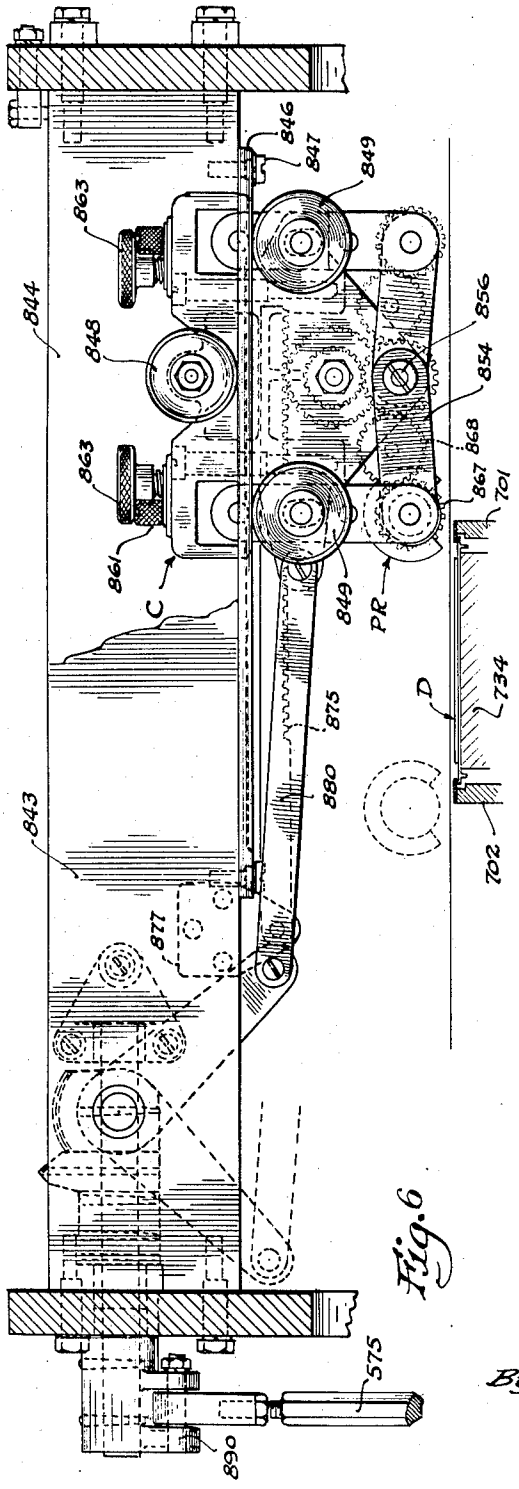

Fig. 6

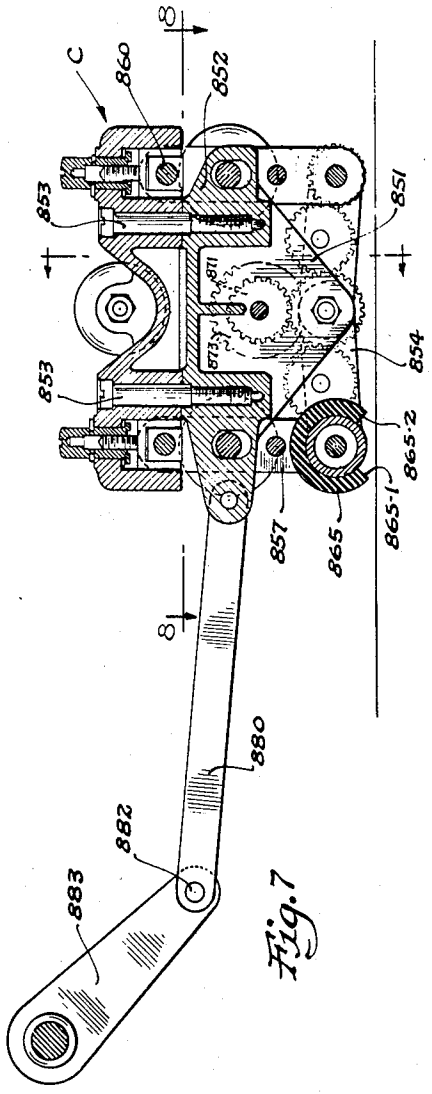

Fig. 7

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ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 6

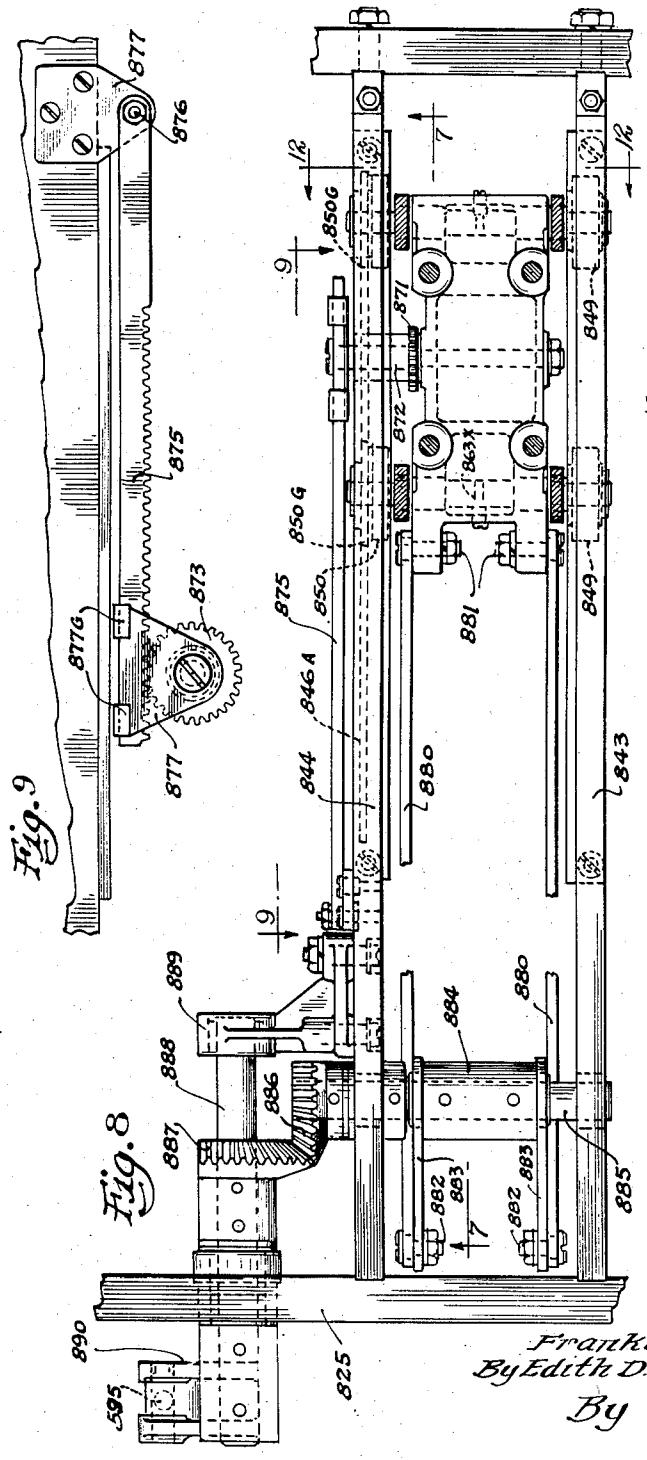

Fig. 9

Fig. 8

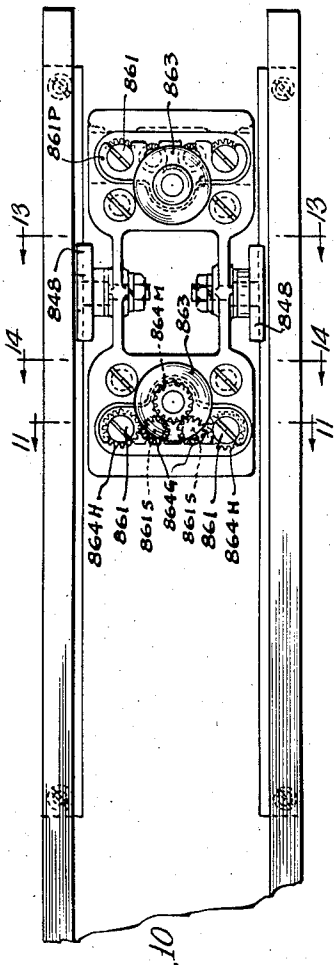

Fig. 10

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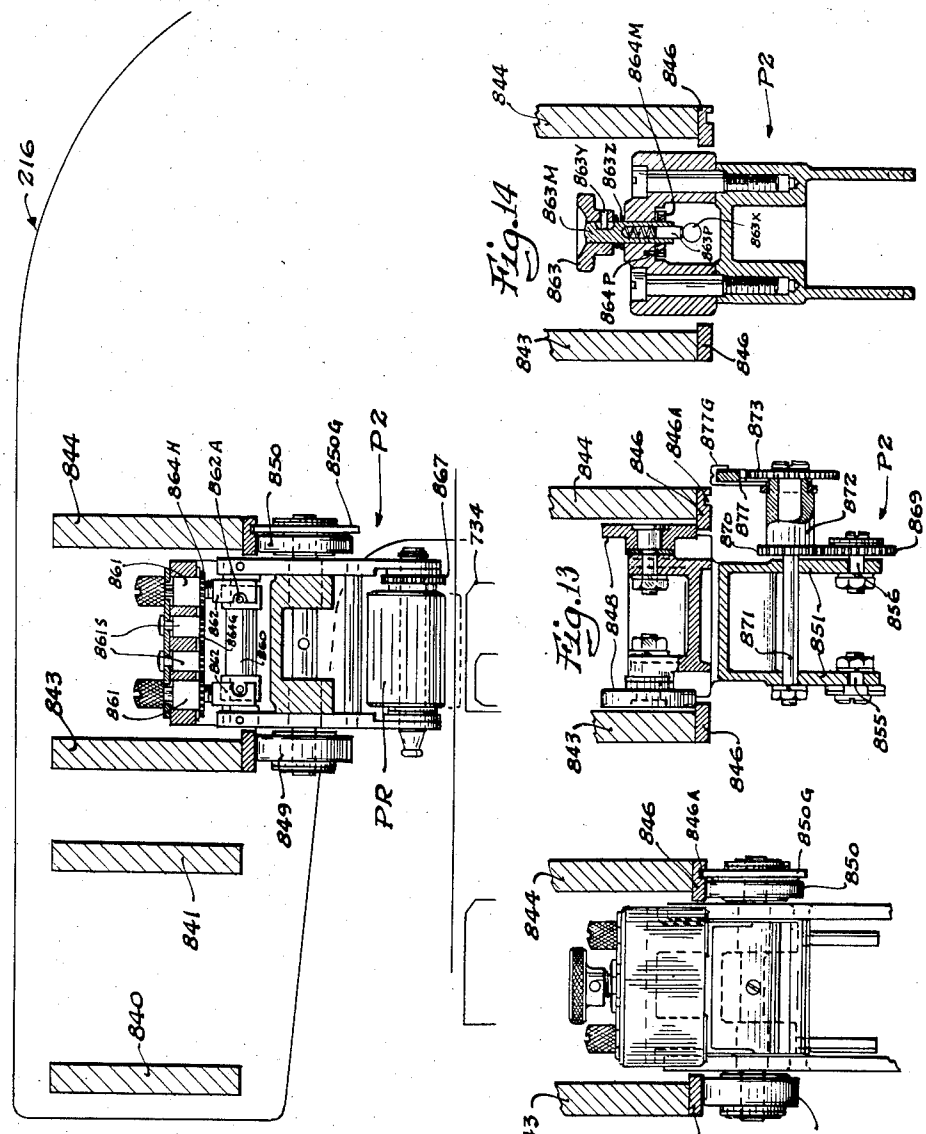
ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 7



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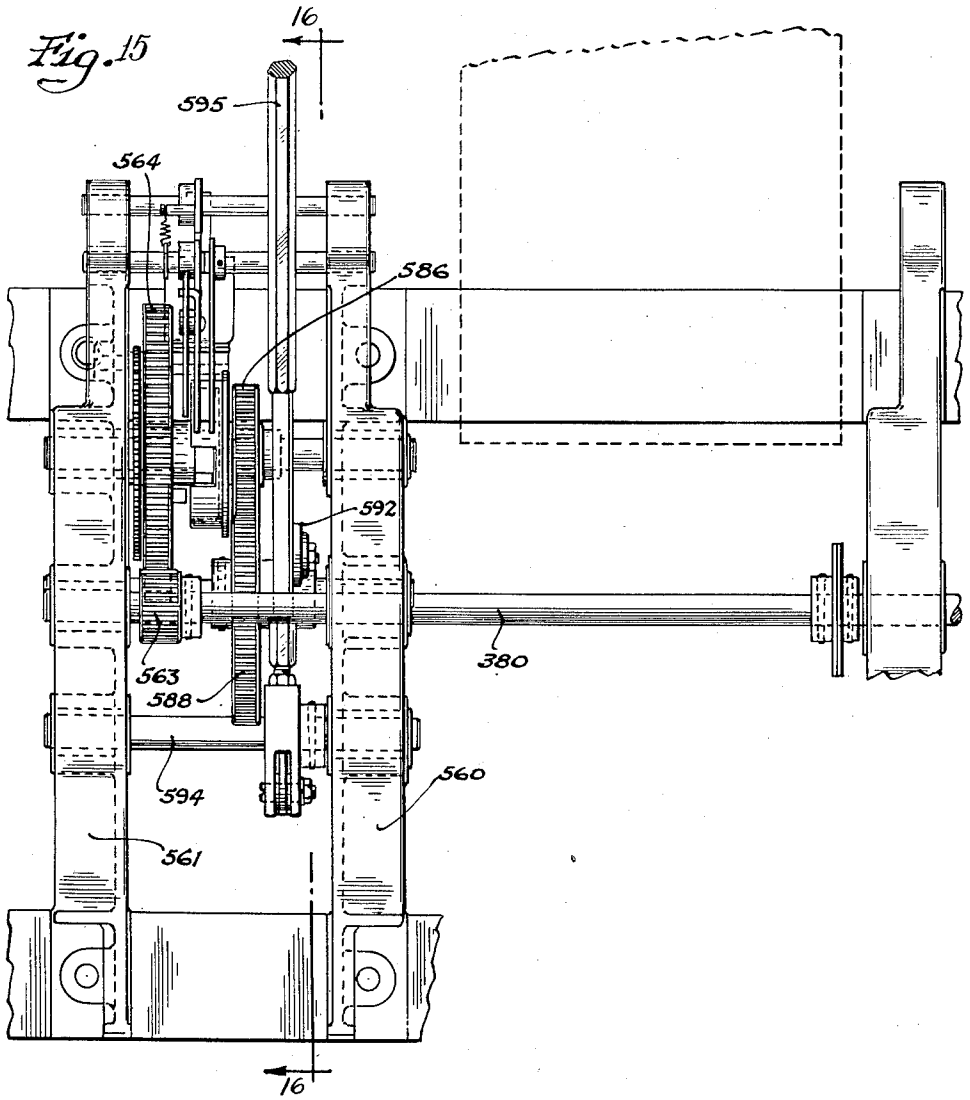
ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 8

Fig. 15



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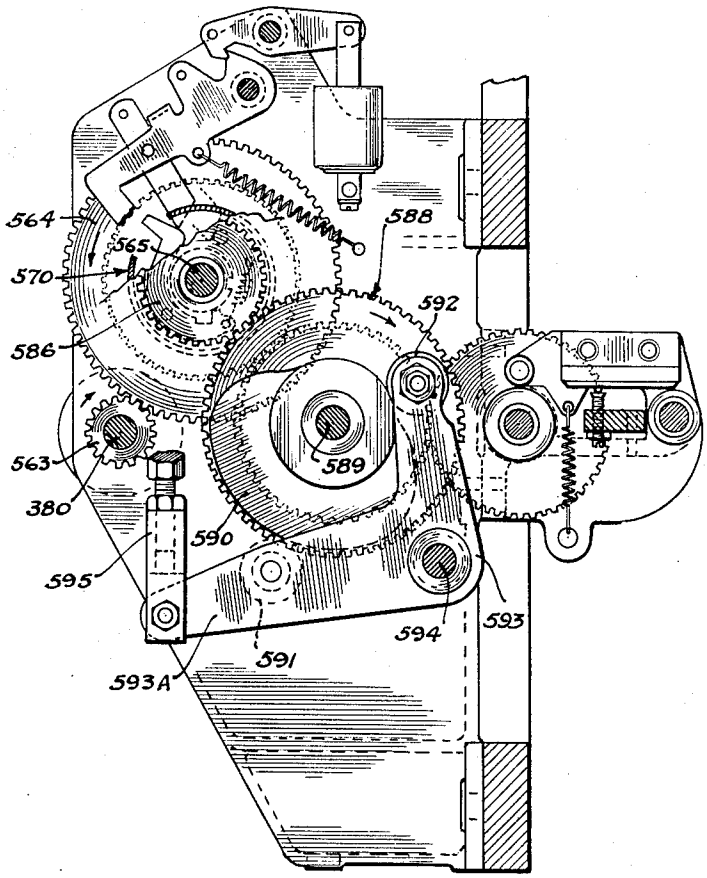
ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 9

Fig. 16



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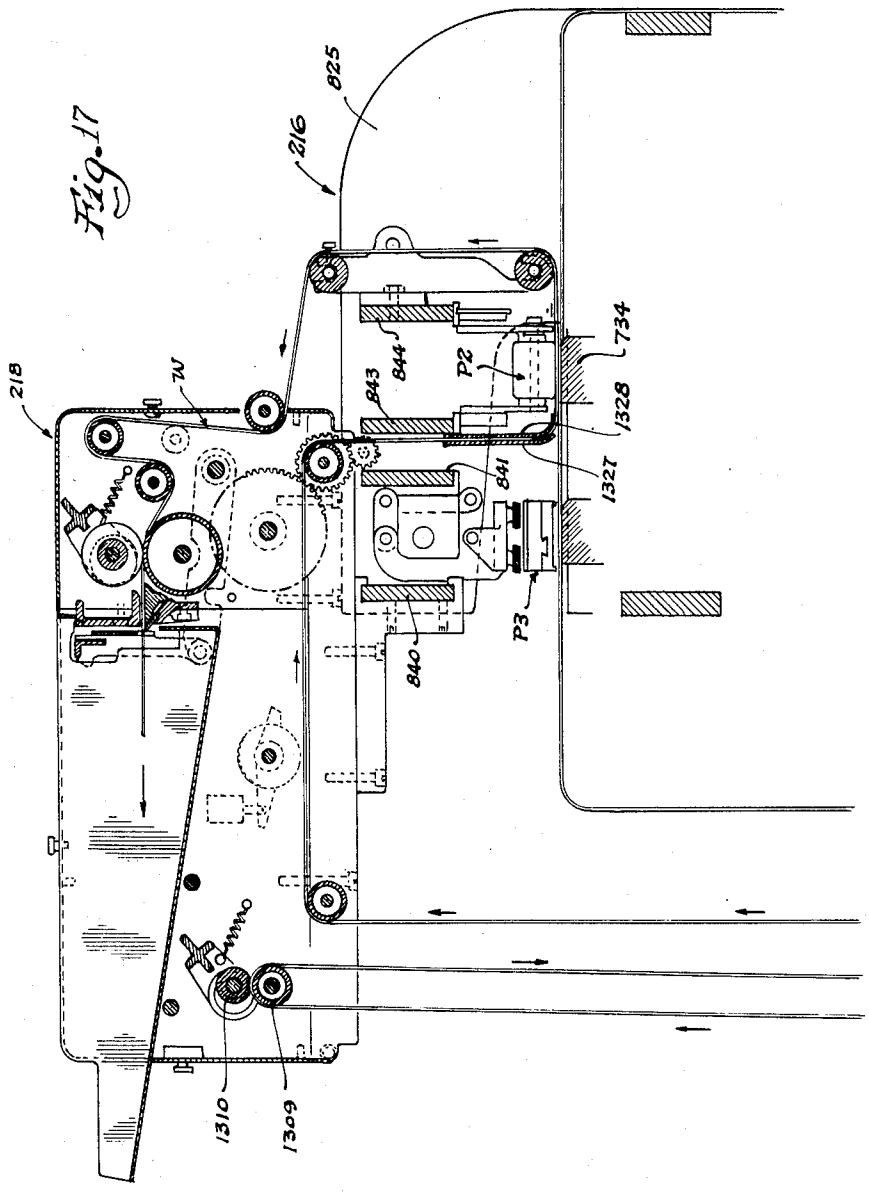
ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Original Filed Feb. 24, 1949 10 Sheets-Sheet 10

Fig. 17



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United States Patent Office

2,775,936

Patented Jan. 1, 1957

2,775,936

ROLLER PLATEN CARRIAGE IN ADDRESS PRINTING MACHINES

Franklin E. Curtis, deceased, late of Willoughby, Ohio, by Edith D. Curtis, administratrix, Willoughby, Ohio, assignor to Addressograph-Multigraph Corporation, Wilmington, Del., a corporation of Delaware

Original application February 24, 1949, Serial No. 78,205, now Patent No. 2,656,103, dated October 20, 1953. Divided and this application December 23, 1952, Serial No. 327,486

4 Claims. (Cl. 101—269)

This invention relates to printing machines and particularly to printing machines for producing printed representations from individual printing devices. The present disclosure is a division of the application of Franklin E. Curtis, Serial No. 78,205 filed February 24, 1949, now Patent No. 2,656,103, patented October 20, 1953.

In printing machines of the aforesaid character, it is quite common to use roller platen structures whereby a resilient platen roller is moved across the paper so as to press the same into printing cooperation with the printing means of the printing devices, and an important object of the present invention is to improve such roller platen structures. More specifically, it is an object of the present invention to afford a printing machine in which a roller platen structure attains its printing cooperation with the printing means of the printing devices simply through movement of the platen in a horizontal plane, and a related object is to enable such a roller platen structure to attain the desired printing cooperation without the necessity for imparting upward or withdrawing movements to the platen roller at the end of its printing operation.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, show a preferred embodiment of the present invention and the principle thereof and what I now consider to be the best mode in which I have contemplated applying that principle. Other embodiments of the invention embodying the same or equivalent principle may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention.

In the drawings:

Fig. 1 is a perspective view of a machine embodying the present invention;

Fig. 2 is a vertical sectional detail view taken along the guideway through which the printing and control devices are advanced through the machine and looking toward the left as the machine is viewed in Fig. 1;

Fig. 3 is a transverse vertical sectional view taken along the platen mechanism of the illustrated machine looking toward the left as the machine is viewed in Fig. 1;

Fig. 4 is a detail plan view taken substantially on the line 4—4 on Fig. 3;

Fig. 5 is a vertical transverse sectional view taken substantially on the line 5—5 on Fig. 4;

Fig. 6 is a sectional view showing a portion of the apparatus illustrated in Fig. 5 in another portion thereof and which is drawn to a larger scale than Fig. 5;

Fig. 7 is a longitudinal sectional view taken substantially on the line 7—7 on Fig. 8;

Fig. 8 is a fragmentary plan view taken substantially on the line 8—8 on Fig. 7;

Fig. 9 is a fragmentary detail view taken substantially on the line 9—9 on Fig. 8;

Fig. 10 is a fragmentary plan view of a portion of the apparatus illustrated in Fig. 8;

Fig. 11 is a sectional detail view taken substantially on the line 11—11 on Fig. 10;

Fig. 12 is a sectional detail view taken substantially on the line 12—12 on Fig. 8;

Figs. 13 and 14 are sectional detail views taken substantially and respectively on the lines 13—13 and 14—14 on Fig. 10;

Fig. 15 is a vertical fragmental elevational view of the drive unit for the platen devices illustrated in Figs. 3 to 14 inclusive;

Fig. 16 is a vertical transverse sectional view taken substantially on the line 16—16 on Fig. 15; and

Fig. 17 is a transverse sectional view through the pager and proofer showing the manner in which the web to be printed is passed through the printing station.

For purposes of disclosure, the present invention is herein illustrated as embodied in a printing machine 200, Fig. 1, that is described in detail in the above identified application of Franklin E. Curtis. The printing machine 200 is adapted to handle individual sheets in the form of card checks which are identified as S in the aforesaid application and which are stacked in a magazine CM at one side of the machine. These card checks S are fed one by one from the magazine CM along a guideway SG–1 to a printing station 205 whereat a platen mechanism P–1 cooperates with other elements in the machine at station 205 and elsewhere to print variable data in the form of amounts on the cards. The cards S are also punched at station 205 with a code in the form of perforations.

The variable data and perforations printed and punched respectively on the sheets S are each derived from a related code carried by printing devices identified as D in the aforesaid Curtis application, there being a sensing head SH, Fig. 2, in the machine which detects the coded information carried by the printing devices D and institutes transmission of the corresponding message to the station 205. This type of printing device also carries data in the form of embossed names and addresses which are to be directly reproduced in the machine 200 as will be pointed out below.

The aforesaid printing devices D are supplied to the machine from a magazine M located adjacent one side thereof. Following the sensing of the printing devices D at the station SH, which occurs after they are fed from the magazine M, the printing devices are next each advanced along a suitable guideway to a printing station 214 at which printed impressions are made directly therefrom on to a proof sheet such as the proof sheets shown in Figs. 5–7 of the above identified application. The proof sheet having been supplied with data in the form of names and addresses from the devices D, the sheets S are next supplied with this same data from the printing devices D at another printing station 210, Fig. 1, following which the printing devices D and card checks S are each fed out of the machine and into respective supply hoppers, and the proof sheet fed to a pager and proofer 218, Fig. 1, where it is severed into individual lengths each bearing its own complete printed record.

The printed data on the proof sheet is produced at the printing station 214 (the proof sheet being in the form of an endless web W at this stage of operation) by the action of a roller platen mechanism P–2 with which the present invention is particularly concerned. As shown in Fig. 4 of the drawings, the platen mechanism P–2 is adapted to move across the proofing station 214 parallel to the lines of embossed characters carried on the printing devices D. This plate mechanism is carried on a rigid

printing frame **216**, Fig. 3, that is arranged to extend upwardly near the rear edge of the machine and then to extend forwardly so as to be disposed over the printing stations **214** and **210**.

In addition to the platen mechanism P–2, and the platen mechanism P–1 mentioned above in connection with station **205**, the machine **200** embodies other platen mechanism P–3, Fig. 2, and P–4 (not shown). The platen P–3 is of the stamper type, and is located at the station **210** forwardly of the station **214** in position to cooperate with other elements at station **210** to imprint the embossed data carried by the printing devices D on to the card checks S. The platen P–4 is also generally of the stamper type and is disposed at station **214** in position to effect printing of amount data on the proof sheet W, this latter data corresponding to that printed on the sheets S at the station **205**. The platen mechanism P–1, P–3 and P–4 constitute no part of the present invention, description of such mechanism being made herein simply to relate the various stations in the machine to the type of printed impression and to the positions occupied by the principal elements of the machine itself. For details in this regard, as well as to the over-all details of the machine **200**, attention is again directed to the above identified Curtis application.

The individual proof-sheets shown in Figs. 5–7 of the Curtis application are produced in a pager and proofer unit **218**, Fig. 1, which is supported on the printing frame **216** above and forwardly of the printing station **210**, and the paper that is supplied thereto originates from rollers R, Fig. 1, located generally rearwardly in the machine **200**. The webs of paper to be printed at the station **214** are threaded and guided through the machine and are arranged as a common endless strip W so that carbons may be made. This common web or strip W is guided upwardly through a diablo mechanism **219** at the front of the machine and into the printing station **214** where it is to be printed.

The web W is withdrawn from the rollers R by a pair of rollers **1309** and **1310**, Fig. 17, and the web then passes over a series of rollers and finally through a pair of guide plates **1327** and **1328** into printing position beneath the platen P–2. Following the printing operation at the station **214**, the web is passed by another series of feed rollers into the proofer and pager **218**.

The printing station **214** whereat the platen P–2 is located is defined by this platen and the cooperating anvil **734** above and on which the printing devices D are located one by one during the course of operation of the machine **200**. The printing devices are fed into the printing station **214** in an advancing direction from the magazine M along the guideway that is defined by a pair of spaced apart guide tracks or rail members **701** and **702** between which and to which the anvil **734** is secured. This advancing movement of the printing devices is carried out in a step by step manner by the feed means described in detail in the aforesaid Curtis application, the feeding of the printing devices D, the advancing movement of the web W, and the action of the platen P–2 being timed relative one to another to effect successively new impressions from the printing devices in spaced relation one after the other on the web W.

The platen P–2 is carried on the rigid printing frame **216** as hereinbefore pointed out, and the particular way in which this platen mechanism is mounted is illustrated in Figs. 3 to 14. Thus, the printing frame **216** is afforded by a pair of rigid and generally C-shaped side plates **825** and **826** that are mounted in position on the machine frame so that the upper arms of the plates **825** and **826** are disposed above the guideway for the sheets S while the lower arms of these plates are disposed beneath the table top T–1 of the machine.

In attaining this mounting arrangement of the plates **825** and **826**, it should be pointed out that the machine frame comprises a plurality of uprights **827** extended upwardly from a lower base frame **828** of rectangular form, this base frame in turn being supported on bottom rails **829** that are arranged to engage the floor. The uprights **827** are connected along the rear side of the machine by a plurality of horizontal mounting bars **830**, **831** and **832**, while at the front of the machine the uprights are connected by a pair of horizontal bars **833** and **834**.

At the rear or closed end of the C-shaped plates **825** and **826**, these plates are arranged to be connected to the upper mounting bar **832**, while at the forward end of the lower arm of each such C-shaped plate, a connection is effected with a longitudinal mounting bar **835** which extends parallel to the bar **834** and somewhat rearwardly thereof.

Between the upper arms of the plates **825** and **826**, provision is made for supporting the platen P–2. There a pair of parallel mounting rails **843** and **844**, Fig. 4, are extended between the upper arms of the C-shaped plates **825** and **826**, and these mounting rails are secured in position to afford mounting space within which the roller platen P–2 may be mounted as hereinafter described.

The roller platen P–2 is illustrated in detail in Figs. 4 to 14, inclusive, and it will be evident in these views that the roller platen P–2 embodies a carriage C that is disposed between the rails **843** and **844**, and is mounted for longitudinal reciprocation along a path that is transverse with respect to the printing device guideway **701–702** which is located so that the carriage passes over the position occupied by the anvil **734**. In affording the desired support for the carriage C on the rails **843** and **844**, these rails have horizontally projecting tracks afforded thereon by means of plates **846**, Fig. 4, that are secured to the bottoms of the rails by screws **847**. The arrangement is such that these plates extend toward each other so as to project beyond the adjacent surfaces of the supporting rails **843** and **844**, and the projecting tracks that are thus afforded are arranged to be engaged by supporting and guiding roller means. Thus, near the center of the carriage C, front and rear rollers **848** are mounted so as to ride along the upper faces of the respective rails or tracks **846**. The carriage C also has a pair of front rollers **849** and a pair of rear rollers **850** mounted thereon and arranged to engage the lower faces of the respective tracks **846**, and the rear rollers **850** each have a somewhat larger guide disk **850G** associated therewith so as to extend into a downwardly facing guide groove **846A** formed longitudinally in the lower face of the rear guide rail **846**. Thus, the carriage is guided along an accurately defined path over the printing station defined by the anvil **734**.

The carriage C as herein shown is arranged to afford two positions at which platen rollers PR may be supported, but in most of the views from Figs. 4 to 14, only one such platen roller has been illustrated in the left-hand operating position in the machine, the other or right-hand mounting position having been provided for use in connection with two-column listing work when this is required. Thus, the carriage has a pair of downwardly projecting mounting plates **851** disposed near the front and rear edges thereof, and these mounting plates serve to support certain of the elements of the mechanism. These mounting plates are formed as elements of a bottom casting **852** that is secured to the lower face of the main carriage casting by means such as bolts **853**, Fig. 7. In affording a mounting for a platen roller PR, adjustment in a vertical direction is provided in order that the printing pressure may be accurately determined, and in accomplishing this result, a pair of links **854** are extended generally horizontally to the left, Fig. 6, from aligned pivot points **855** and **856** afforded, respectively, in the lower corners of the mounting plates **851**. These links **854** are extended to the left and are pivotally connected at their left-hand ends to upwardly extending links **857**, the links **857** be-

ing supported at their upper ends on a vertically adjustable cross shaft 860, Fig. 11. Adjustment of the cross shaft 860 is attained by means including a pair of adjusting nuts 861 that are of round form and extend downwardly through the upper parts of the carriage C. A retaining plate 861P engages reduced neck portions on the nuts 861, and screws extend downwardly through the plate 861P and into studs 861S that extend upwardly through the carriage casting so that this structure holds the nuts 861 in fixed longitudinal positions while permitting rotative adjustment by engagement of the kerfed upper ends of the nuts 861. The nuts 861 are internally screw threaded, and engage upwardly extended threaded studs formed on members 862, Fig. 11, that have a pinned connection with the cross shaft 860 as shown at 860A. Thus, by operation of the adjusting nuts 861, the cross shaft 860 may be raised or lowered, and since the adjusting nuts 861 are disposed near the front and rear ends, respectively, of the cross shaft 860, these nuts may also be used for the purpose of leveling the platen structure. The nuts 861 are arranged for normal adjusting operation in unison by a knurled head 863 that is mounted for limited vertical movement in a non-rotative relation on a stub shaft 863M that extends downwardly through the main carriage casting, Fig. 14. This is accomplished by a pin and slot arrangement 863Y, and a spring 863Z beneath the head 863 urges the head toward an upper relation with respect to the shaft 863M. A spring plunger 863P in the shaft 863M, Fig. 14, acts against a stud 863X to urge the shaft 863M upwardly so that a gear 864M fixed thereon is in the plane of and meshed with a pair of idler gears 864G that are carried on the lower ends of the studs 861S. The gear 864M also engages stationary pin 864P when the gear is in its upper position, thereby to be locked against rotation. These idler gears 864G mesh with gears 864H fixed on the nuts 861, and when the head 863 is moved downwardly from its normal position to the end of the lost motion afforded by the pin and slot 863Y, the gear 864M is disengaged from the locking pin 864P while still remaining engaged with the idler pinions. When this is done, the head 863 will actuate the nuts 861 in unison to cause ordinary adjustment of the printing pressure. When a leveling operation is to be performed, the shaft 863M is depressed to disengage the gear 864M from the idlers, and the nuts 861 may then be adjusted independently.

The platen roller PR is of the positive gear driven type so that the platen roller rolls along the lines of embossed characters on the printing device D in timed relation to the movement of the platen carriage C, and in such rolling action the desired cutoff action is attained by affording a resilient platen facing 865 as shown in Fig. 7 of the drawings. In accordance with the present invention, the platen carriage C is moved through a stroke in one direction to accomplish a particular printing operation, and at the end of the stroke, comes to rest in the position shown in Fig. 6, wherein the edges 865–1 and 865–2 are both spaced away from the table top of the machine. Then after advancing movements of the sheets to be printed and related elements, the next printing operation is performed by moving the carriage C in the opposite direction to a position wherein the platen roller PR occupies the position shown in dotted outline in Fig. 6, in which position the edges of the resilient platen facing are similarly spaced from the paper so that the desired sheet feeding operations on the web W may take place.

The gearing arrangement through which such positive rotative movements may be applied to the platen roller PR in the course of the aforesaid reciprocating movements of the carriage C are illustrated in Figs. 6 to 9 and 11 and 13. Thus, the rear vertical link 857 carries a platen mounting bearing structure which includes a pinion 867, and this pinion 867 is meshed with a pinion 868 that is carried by the link 854. The pivot pin 856, Fig. 13, carries a pinion 869 that meshes with the pinion

868, and this pinion 869 meshes with a pinion 870 that is mounted on a shaft 871 that extends from front to rear through the mounting plates 851. The pinion 870 is fixed on the forward end of a sleeve 872, and at its rear end this sleeve carries a gear 873. The gear 873 is disposed so as to underlie and be meshed with a rack 875, Fig. 9, that extends substantially parallel to the path of movement of the carriage C. The left hand end of the rack 875 is pivoted at 876 on a bracket 877 that extends downwardly from the rear face of the mounting rail 844, it being observed that in Fig. 9 this structure is shown in a reverse relationship. The sleeve 872 has a guiding bracket 877 rotatably associated therewith, and this bracket is extended upwardly and bent around the upper edge of the rack 875 as indicated at 877G. Thus, when the carriage C is moved longitudinally, the guide 877 moves with the carriage C and along the rack 875 and assures that the rack 875 is maintained in mesh relationship with respect to the gear 873. With the arrangement that is thus afforded, the free end of the rack 875 that is meshed with the gear 873 is able to follow the up and down adjusting movements of this gear 873 when the platen pressure is being adjusted and, hence, the pressure adjustments are attained without changing the cutoff relationship of the platen face 685. The mounting, adjusting and driving arrangements just described are in effect duplicated at the right-hand end of the carriage C to afford another platen roller position.

The carriage C is actuated through the desired reciprocating stroke by a pair of links 880 that are pivoted on pivots 881 near the front and rear edges of the carriage C, and these links 880 are extended to the left and are respectively pivoted at 882 to a pair of similar arms 883 that are extended in parallel relation from opposite ends of a mounting sleeve 884. The mounting sleeve 884 is fixed on a mounting shaft 885 that is extended horizontally through the mounting rails 843 and 844, and on the projecting rear end of the shaft 885, a bevel gear segment 886 is fixed. This bevel gear segment is meshed with a bevel gear segment 887 that is fixed on a horizontal shaft 888 that is supported by a bearing bracket 889 and by a bearing in the left-hand plate 825. Just to the left of the plate 825, an arm 890 is fixed on the shaft 888, and the upper end of an actuating link 595 is pivotally associated with the arm 890. Thus, when the link 595 is moved in a downward direction, the carriage C is moved to the left to the position shown in Fig. 5, while movement of the link 575 in an upward direction actuates the carriage C to the right and into the position shown in Figs. 6 and 7.

It will be recognized from the above that movement of the drive link 595 actuates the platen mechanism P–2, and this action of the link 595 is controlled by a bell crank lever 593, Fig. 16, which in turn is driven by a motor 375, Fig. 3. Thus, there is a main drive shaft 380, Fig. 3, which extends through the machine 200 generally parallel to the horizontal mounting bars 830—834, and this shaft is continuously rotated by a belt and pulley connection 376, 378 running from the shaft 380 to the motor 375. As shown in Figs. 15 and 16, a pinion gear 563 in mesh with a larger gear 564 driven by it is carried at one end of the drive shaft 380. The gear 564 is loosely mounted on a shaft 565 and constitutes the driven element of a one-revolution clutch 570, Fig. 16, which, when coupled as described in the said Curtis application, imparts a driving movement to the driven element of the clutch 570 in the form of a pinion gear 586. The pinion 586 is meshed with a larger gear 588 which it drives on a shaft 589.

The gear 589 has a cam 590 fixed thereto so that the cam is rotated with gear 588 so long as the clutch 570 is engaged. The cam 590 is arranged to cooperate with a pair of cam followers 591 and 592 which are carried, respectively, on either end of the bell crank 593 which is mounted for rocking movement on a shaft 594.

The lower arm 593A of the bell crank is connected to the lower end of the drive link 595, and it will be readily seen that rotation of the cam 590 in cooperation with the followers 591 and 592 is effective to rock the bell crank 593 and reciprocate the drive link 595, reciprocable movement of the latter in turn accounting for reciprocable movements of the roller platen P–2 as above described.

From the foregoing it will be apparent that the present invention affords an improved and simplified roller platen structure, and in accordance with the present invention a roller platen structure is provided which attains its printing cooperation with the printing means of the printing devices simply through movement of the platen in a horizontal plane, thereby to attain the described printing cooperation without the necessity for imparting upward or withdrawing movements to the platen roller at the end of its printing operation.

What is claimed is:

1. In a printing machine, a platen carriage, means supporting and guiding said carriage for horizontal movement during printing strokes, a platen roller mounted on said carriage on a rotative axis and for vertical adjustment, gearing for imparting controlled rotative movement to said platen roller during reciprocation of said carriage, and including an initial member in the form of a rack disposed generally parallel to the path of movement of said carriage and pivoted on a fixed pivot at one end to enable said rack to pivot as required during said adjustment, said platen roller having a segmental resilient surface terminating in spaced cut-off edges parallel to said axis and spaced substantially from each other, said platen roller being so related to said gearing that said spaced edges are faced downwardly and substantially in the same horizontal plane when the carriage is at opposite ends of its stroke, a rock shaft operatively connected to said carriage for reciprocating the same, and means for rocking said shaft operable in successive cycles to move said carriage through printing strokes in opposite directions.

2. In a printing machine, a platen carriage, means supporting and guiding said carriage for horizontal movement during printing strokes in opposed directions, a platen roller mounted on said carriage on a rotative axis and for vertical adjustment to regulate the printing pressure, means for imparting controlled rotative movement to said platen roller during reciprocation of said carriage and including an initial member in the form of a rack disposed generally parallel to the path of movement of said carriage and pivoted on a fixed pivot to enable said rack to pivot as required during said vertical adjustment, said carriage having gearing operatively connected between said rack and platen roller for rotating the platen roller during reciprocation of said carriage, means for feeding a sheet to be printed beneath said platen, said platen roller having a segmental resilient surface terminating in spaced cutoff edges parallel to said axis and spaced substantially from each other, said platen roller being so related to said gearing that said spaced edges face downwardly and are spaced above the path of said sheet when the carriage is at opposite ends of its stroke, a rock shaft operatively connected to said carriage for reciprocating the same in opposed directions, and means for rocking said shaft operable in successive cycles to move said carriage through printing strokes in opposite directions.

3. In a printing machine, a reciprocable platen carriage at a printing station, means supporting and guiding said carriage for horizontal straight forward movement at the printing station during printing strokes, a platen roller mounted on said carriage on a rotative axis, means for adjusting vertically and levelling the axis of the platen roller, means to feed a sheet to be printed through the printing station and along a path that extends beneath said platen roller, said platen roller having an uninterrupted segmental resilient surface terminating in spaced apart edges that are substantially parallel to said axis, said roller being positioned in said carriage so that said spaced edges are in substantially a horizontal plane spaced above the path of such sheet when the carriage is at opposite ends of its stroke thereby enabling such sheet to be freely fed beneath the platen roller between strokes without engaging the platen roller, and means for reciprocating said carriage to move said carriage through printing strokes in opposite directions and causing said uninterrupted segmental portion of the platen roller to bear on and travel across such sheet, the last-named means including gearing on the carriage for rotating the platen, a pivotally mounted rack for driving the gearing upon reciprocation of the carriage and enabling adjustment of the platen roller to be easily accomplished, a rock shaft, and a drive arm connected to and between the rock shaft and carriage.

4. In a printing machine, a platen carriage, means supporting and guiding said carriage for horizontal movement during printing strokes in opposite directions, a platen roller mounted on said carriage on a rotative axis and for vertical adjustment to regulate the printing pressure, gearing mounted on said carriage for imparting controlled rotative movement to said platen roller during reciprocation of said carriage, drive means for the gearing including a rack disposed generally parallel to the path of movement of said carriage and pivoted on a fixed pivot at one end to enable said rack to pivot as required during said adjustment, said platen roller having a segmental resilient surface terminating in spaced cut-off edges parallel to said axis and spaced substantially from each other, said platen roller being so related to said gearing that said spaced edges are faced downwardly and substantially in the same plane when the carriage is at opposite ends of its stroke, and drive means including a rock shaft under control of a one-revolution clutch operable in successive cycles of the machine to move said carriage through printing strokes in opposite directions.

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