June 20, 1944. A. H. REIBER 2,351,636

PRINTING TELEGRAPH APPARATUS

Original Filed May 4, 1936

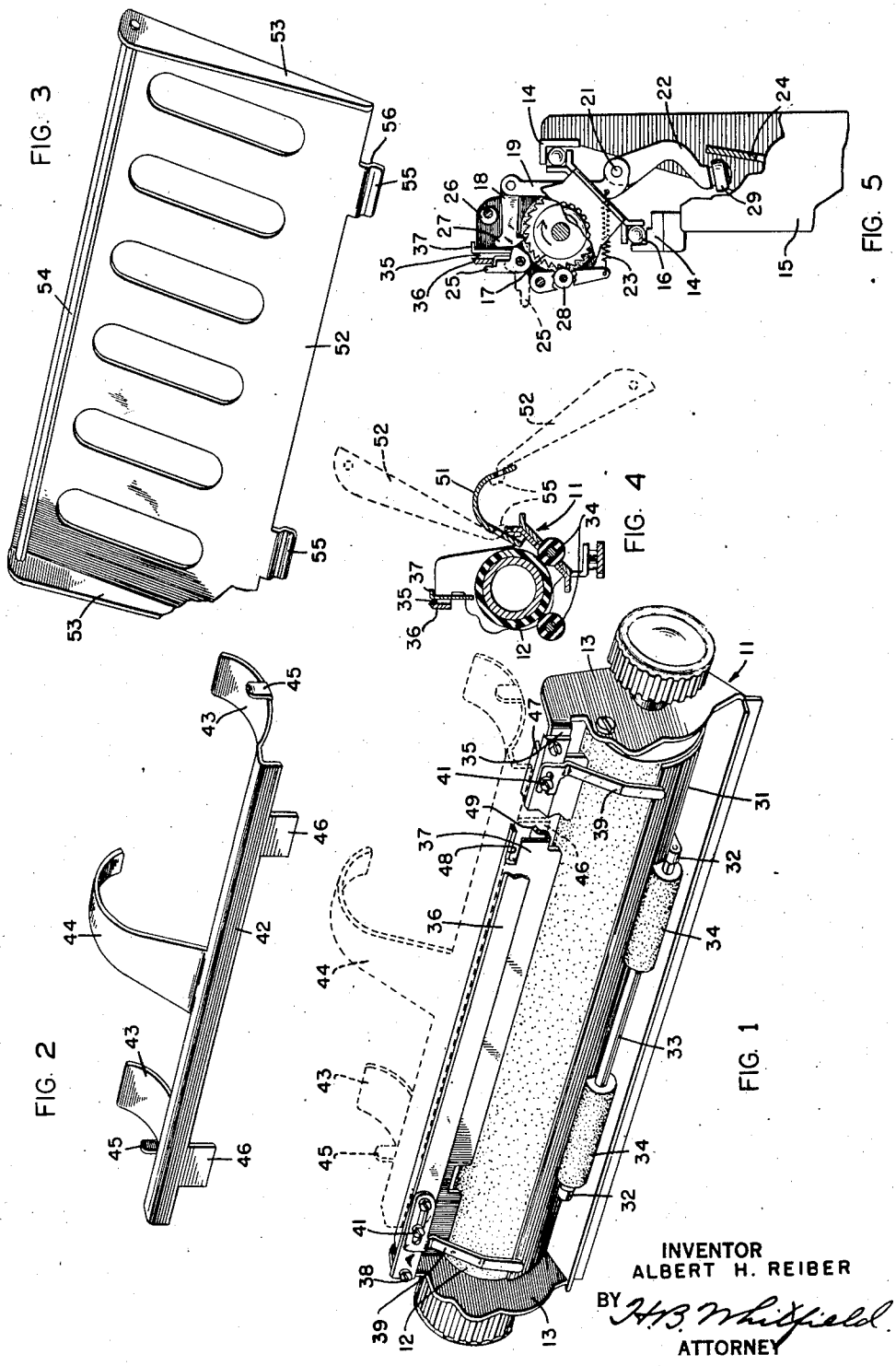


FIG. 3

FIG. 5

FIG. 4

FIG. 2

FIG. 1

INVENTOR
ALBERT H. REIBER
BY H. B. Whitfield
ATTORNEY

Patented June 20, 1944 2,351,636

UNITED STATES PATENT OFFICE

2,351,636

PRINTING TELEGRAPH APPARATUS

Albert H. Reiber, Evanston, Ill., assignor to Teletype Corporation, Chicago, Ill., a corporation of Delaware

Original application May 4, 1936, Serial No. 77,796. Divided and this application November 1, 1941, Serial No. 417,529

1 Claim. (Cl. 197—133)

The present invention pertains to printing apparatus and more particularly to paper controlling instrumentalities therefor.

This application is a division of application Serial No. 77,796 filed May 4, 1936, which matured as Patent No. 2,296,874, September 29, 1942.

The principal object of the present invention is to provide in a typewriting machine, features which are conducive to reliable and efficient operation.

The present invention features novel paper controlling devices which facilitate the handling and disposal of record material for printing machines. Briefly, the printer to which the device according to the present invention is applicable is adapted to print upon page width paper, and the paper may be in the form of single sheets or a continuous web. The arrangement disclosed for supporting a roll of paper comprises a bar having at the ends thereof rearwardly extending concave roll supporting arms, and intermediate the arms there is provided a rearwardly extending oppositely curved roll retaining arm. The paper supply roll holder is adapted to readily receive and retain a roll of paper, and is readily detachable and replaceable on the platen carriage structure. When it is desired to supply paper in the form of a web which is not supported on the platen carriage, but which is stationarily mounted upon any suitable support behind the carriage, the present invention provides a detachable paper chute or guide capable of being supported in a plurality of different positions.

The foregoing objects and features of the invention will appear from the following detailed description taken in conjunction with the accompanying drawing, in which

Fig. 1 is a perspective view of the platen carriage showing particularly the paper holding and guiding means;

Fig. 2 is a perspective view of the removable paper roll holder shown in broken lines in Fig. 1;

Fig. 3 is a perspective view of a paper guiding plate;

Fig. 4 is a vertical sectional view through the platen carriage showing the manner of mounting the platen shown in Fig. 3 upon the carriage; and

Fig. 5 is a vertical cross sectional view showing the line feeding mechanism.

Having reference to the drawing in which like reference characters indicate similar parts throughout the several views, the platen carriage mechanism to which the paper controlling instrumentalities of the present invention are applicable is indicated generally as 11 in Fig. 1. The printing platen 12 is rotatably mounted in end plates 13 of the reciprocating carriage 11. The carriage 11 is supported in adjustable rails 14 at the top of the main frame member 15. Anti-friction balls 16 (Fig. 5) are disposed between the carriage 11 and the rails 14 and provide free movement of the carriage with respect to its supporting rails. The rotatable platen is provided with a feed ratchet 17 (Fig. 5) with which there cooperates a feed pawl 18.

The platen feeding pawl is articulated to a lever 19 that is fixed to a rock shaft 21. The rock shaft 21 is rotatably journalled in the carriage 11 and has fixed thereto at a point substantially midway between the ends of the carriage 11 an operating lever 22. The lever 19, rock shaft 21, and operating lever 22 are biased counterclockwise by a spring 23. Feeding of the ratchet 17 in the direction indicated by the arrow is effected by clockwise rotation of operating lever 22, by a power actuated bail 24 (in the manner described in the afore-mentioned parent application Serial No. 77,796), against the tension of spring 23, which subsequently acts to reciprocate the pawl 18 to pick up the next tooth or teeth for the next line feeding operation. A lever 25, pivoted on the carriage end plate 13, provides two abutments for deflecting the pawl at different points in its travel to idle or unoperated position to establish single or double line spacing. When the lever is in the position shown in full line, it permits the pawl to travel sufficiently far in engagement with the ratchet 17 to pick up two teeth, whereas if the lever is in the dotted line position the pawl is deflected from the ratchet and is permitted, when it operates, to pick up only one tooth. An adjustable eccentric 26 (Fig. 5) is mounted on the carriage end plate 13 and is disposed in the path of a camming lug 27 on the pawl 18 for wedging the pawl against the ratchet to prevent over-travel of the ratchet and platen. A spring biased jockey roll 28 bears against the ratchet 17 and controls the positioning of the platen 12.

The carriage 11 is moved to its right-hand position by a belt (not shown), which has one end connected to a carriage return drum which contains a spiral spring, and which has its other end connected to a pin carried by the carriage 11. The carriage 11 is moved leftwardly by spacing mechanism (described in the parent application) against the action of the spiral spring. The return of the carriage to its extreme right-hand position, in response to the carriage return func-

tion, is cushioned by a dash pot (in well-known manner).

The line feed function, as is known, is a function accomplished by rotating the printing platen 12 to advance a sheet or web of paper upon which printing is to be effected through a distance sufficient to present a line of blank paper to the printing position. The bail 24 is pivotally mounted in suitable brackets on the frame 15 and extends slightly above the lower end of the previously described line feeding lever 22. The lever 22 travels with the carriage 11 and the extent of the bail 24 transversely of the machine is slightly greater than the travel of the lever 22, so that the lever may be engaged by the bail at any position in the travel of the carriage. The line feed lever 22 is provided with an anti-friction roll 26 which constitutes means for engagement of the bail 24 with the lever 22.

As has been previously stated, the printing platen 12 is rotatably supported in the end plates 13 of a movable carriage 11 (Fig. 8). Carriage 11 supports an arcuate paper guiding plate 31 which extends around the lower portion of the platen and is conformed to the contour thereof. The arcuate plate 31 is provided with bearing members 32 in which are supported shafts 33 (Fig. 1). The shafts 33 have mounted thereon pressure rolls 34 and the plate 31 is provided with apertures in registry with the pressure rolls 34 to permit the rolls to frictionally engage the platen when no paper is inserted in the carriage and to frictionally engage paper upon which characters are to be printed.

The end plates 13 are provided with inwardly turned ears 35 which support in abutment with the forward faces thereof a paper tear-off blade 36 and which support in abutment with the rearward faces thereof a paper guiding plate 37. Mounting screws 38 secure the blade 36 and guide plate 37 to the ears 35 and the blade 36 and plate 37 are spaced apart a distance equal to the thickness of the ear 35, whereby there is provided a space through which may be guided paper passing upwardly from the platen after having been fed between the platen 12 and arcuate guide plate 31. The lower edge of the guide plate 37 is disposed in close proximity to the platen 12 and the plate functions after the manner of a stripper to guide the paper away from the platen. Guide fingers 39 are adjustably mounted by screws 41 upon the tear-off blade 36 and the fingers extend downwardly and overlap the arcuate plate 31 so that paper emerging from between the platen 12 and arcuate plate 31 is guided to the passage space between the tear-off blade 36 and the guide plate 37.

The printer herein described is adapted to print upon page width paper and the paper may be in the form of single sheets or a continuous web. An arrangement for supporting a roll of paper is shown in Figs. 1 and 2 and comprises a bar 42 having at the ends thereof rearwardly extending concave roll supporting arms 43 and intermediate the arms 43 a rearwardly extending oppositely curved roll retaining arm 44. The roll supporting arms 43 are provided with upwardly turned ears 45 which prevent axial displacement of a supply of paper in the form of a roll. The roll supporting member just described is removably supported on the carriage 11 by means of downwardly extending projections 46 carried by the bar 42 to be received in retaining means now to be described.

It will be observed by reference to Fig. 1 that the guide plate 37 is provided at the top thereof with a horizontal flange 47 in which are formed slots 48 spaced apart a distance equal to the spacing of the projections 46 of the roll supporting bar 42. At the lower edge of the guide plate 37 and below each slot 48, two slits or cuts are made whereby tongues 49 are formed and these tongues are bent backwardly and upwardly to form pockets to receive and retain projections 46 on the bar 42. The paper roll holder may be easily removed from the carriage by lifting it vertically to withdraw the projections 46 from the pockets formed by the tongues 49 and from the slots 48.

Under some circumstances it may be desired to supply paper in the form of a web which is not supported on the carriage but which is stationarily mounted upon any suitable support behind the carriage. There is shown in Figs. 3 and 4 a guide member supportable in either of two positions and means on the carriage for supporting the guide member. As shown in Fig. 4, the carriage 11 has secured thereto and extending across the rear thereof a convexly formed plate 51 in which are formed spaced slots near the forward edge thereof and other similar slots near the rearmost edge thereof. A guide plate 52 which is adapted to be received by the convex plate 51 (Figs. 3 and 4) is provided at its opposite ends with flanges 53 between which there extends a paper retaining rod 54 in spaced relation to the plate 52. The plate 52 is provided at the foremost edge thereof with tongues 55 spaced apart a distance equal to the spacing of the slots in the convex plate 51, each tongue 55 having an offset 56. The plate 52 may be supported in an upwardly inclined position on the convex plate 51 by inserting the tongues 55 in the forward set of slots so that the foremost portions of the tongues abut the inner surface of the plate 51 with the offsets 56 disposed within the slots. This manner of mounting the guide plate 52 is disclosed in broken lines in the upper portion of Fig. 4. The plate 52 may also be supported in a downwardly inclined position by similarly inserting the tongues 55 in the rearmost slots in the convex plate 51. This mounting is shown in broken lines in the lower part of Fig. 4.

Although a particular embodiment of the invention has been described herein, it will be understood that the apparatus is capable of many modifications and substitutions in the various elements and combinations thereof within the scope of the appended claim.

What is claimed is:

In a recorder having a demountable paper supply roll holder, a stationary frame, a platen carriage movably supported by said frame, a cylindrical platen rotatably supported by said carriage, said carriage having end plates for journalling said platen therein, an angle bar comprising a depending flange and a rearwardly directed flange extending between said end plates and secured thereto having its depending flange positioned immediately above said platen and disposed parallel thereto to form a stripper for positively deflecting the record material from the periphery of said platen, and integral supporting means comprising tongues struck from said depending flange and conformed into U-shaped receptacles disposed below and cooperatively related to apertures in the rearwardly directed flange of said angle bar to facilitate the demountability of said roll holder on said carriage.

ALBERT H. REIBER.