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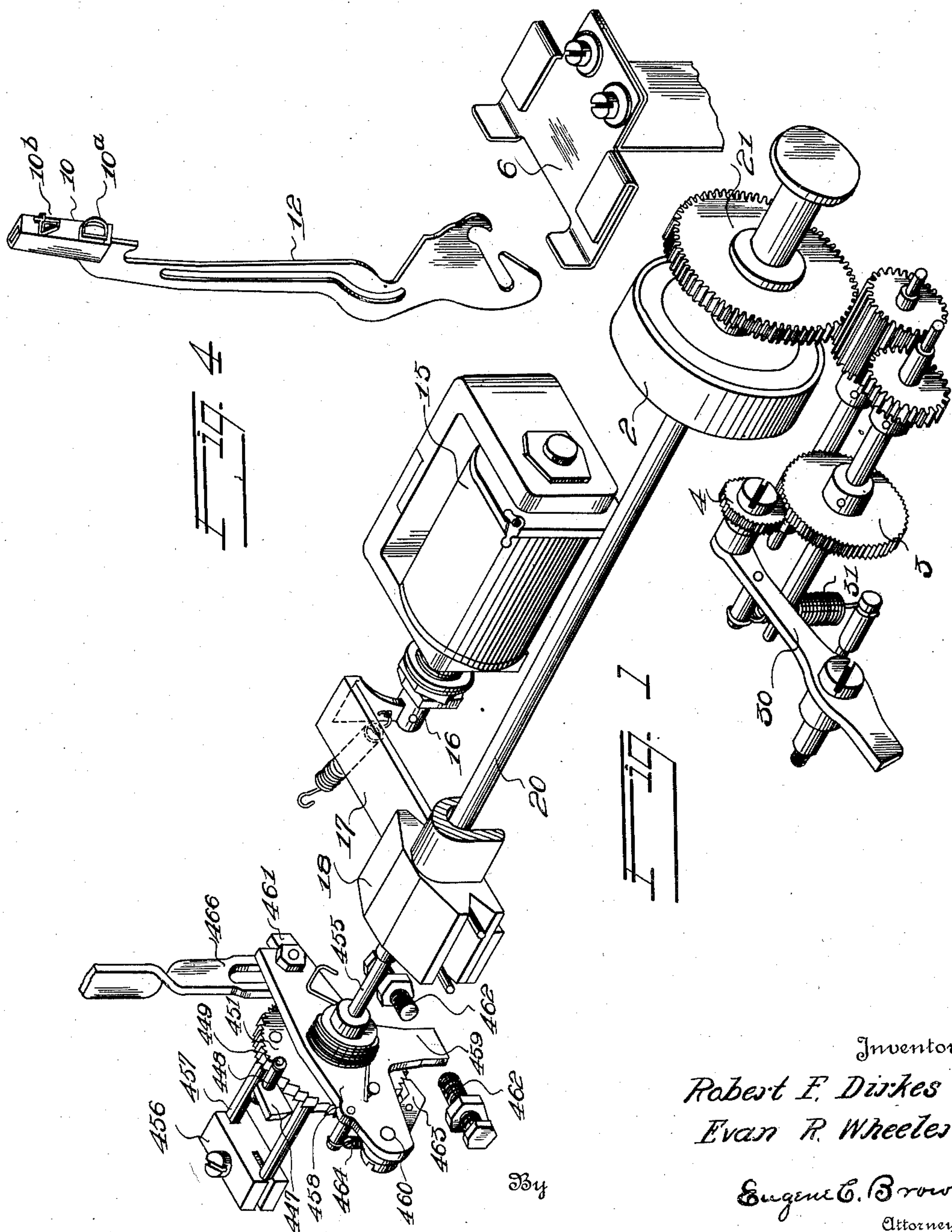
R. F. DIRKES ET AL

1,754,985

TELEGRAPH PRINTER TAPE FEED MECHANISM

Filed March 15, 1927

2 Sheets-Sheet 1



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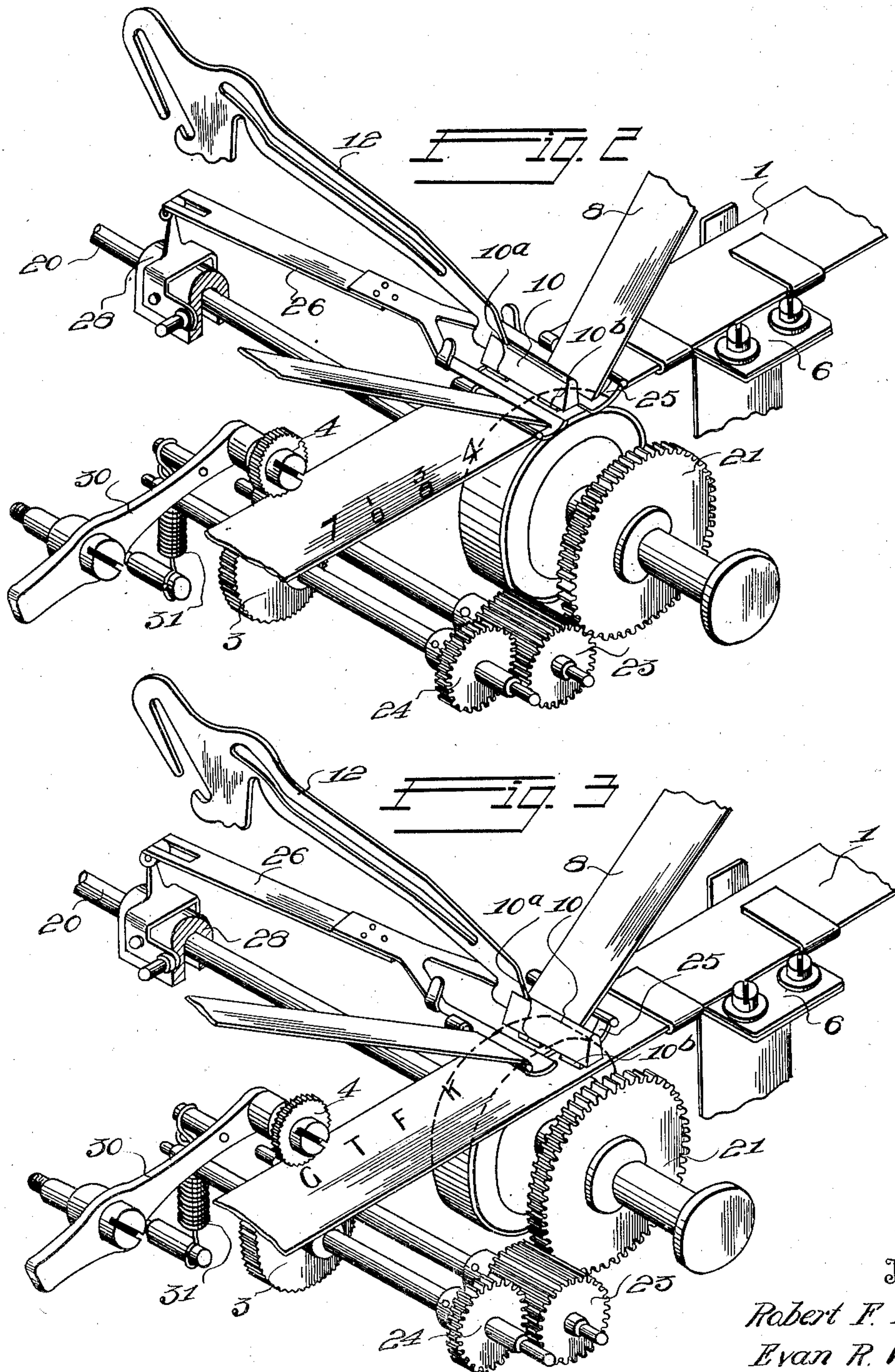
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UNITED STATES PATENT OFFICE

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TELEGRAPH-PRINTER TAPE-FEED MECHANISM

Application filed March 15, 1927. Serial No. 175,587.

This invention relates to feeding mechanism for the tape of type-bar printing telegraph machines and its objects are to enable the printed copy to be read immediately as it is being printed, and to eliminate all tape movement except forward spacing.

In all prior tape printers it has been difficult to read the printed characters close to the type bar or printing element partly due to the projecting parts of the feeding mechanism and especially due to the lateral shifting movements of the tape either horizontally or vertically.

Our invention entirely eliminates both of these annoying features. The tape is maintained in the same straight line without any lateral shifting and is free from all obstructions so that the printing is clearly legible from the last printed character until the tape is beyond the printer.

While our improvements may be applied to different types of telegraph typewriters, we have shown an embodiment which may be applied to a machine such as that shown in U. S. patent to Kleinschmidt, No. 1,567,599, Dec. 29, 1925, and reference thereto will be made for the operation of certain co-operating parts.

In the accompanying drawings, Figure 1 is a perspective view showing the general arrangement of the essential parts of our tape feeding mechanism; Figures 2 and 3 are fragmentary perspective views showing the platen, together with the ribbon guiding mechanism in position for printing figures and letters, respectively, and Figure 4 is a perspective view of one of the type levers.

The tape 1, upon which the characters are printed, is drawn across the platen 2 by knurled rollers 3 and 4, the tape on the feeding side passing over a guide member 6, having projections to engage the edges of the tape. The tape is held perfectly flat free from loops between the guide 6 and the knurled rollers, barely touching the platen and passes onto a table not shown. The knurled pulling rollers engage the tape near one edge and hence do not obstruct any of the printed characters.

When a letters character is being printed,

as shown in Fig. 3, the platen 2 and inking ribbon 8 are moved to the inner side of the tape, so that they are only under that part of the type bar 10, which carries the letters character 10^a, the portion of the type bar which carries the figures character 10^b projecting beyond the platen and ribbon. Hence there can be no smearing of the tape by the portion of the type bar which is not printing.

When printing a figures character, as shown in Fig. 2, an electrical impulse is first sent through solenoid 15, which attracts its plunger 16, and pulls the arm 17 and saddle member 18 forward. The shaft 20 is secured to the saddle member and is therefore moved forward, carrying the platen 2 and the gear 21, from the position shown in Fig. 3 to the position shown in Fig. 2, the teeth of the gear 21 sliding along the teeth of the wide idler gear 23.

Now when the type lever 12 swings downward into the position shown in Fig. 2, the platen 2 and ribbon 8 will only be under the portion of the type bar 10, carrying the figures character 10^b, the letters character 10^a being entirely free and not covered by either the platen or the ribbon. During these movements of the platen and ribbon, the tape 1 is not moved and hence the printed characters can be easily read.

The ribbon shuttle 25 which guides and positions the ribbon over the platen, is carried on the end of the lever 26 and is shifted forward or rearward by the saddle 28, which is fastened to the shaft 20 in front of the saddle 18.

The tape is fed forward during the return stroke of the type lever 12. The shaft 20 is rotated slightly by the mechanism shown at the left side of Fig. 1, in a manner fully described in said Kleinschmidt Patent No. 1,567,599 and hence it is not necessary to describe the same in detail herein. The parts referred to have been designated by the same reference characters used in said patent, for convenience. The rocker arm 459 is actuated and causes the pawl 463 to step the ratchet wheel 451 around one tooth. This

causes shaft 20 to revolve, and hence also platen 2 and gear 21.

The rotation of gear 21 causes knurled rollers 3 and 4 to revolve, through idler gear 23 and pinion 24. The small idler knurled roller 4 is carried on the end of pivoted lever 30 and is yieldingly pressed toward knurled roller 3 by a spring 31. The tape is thus stepped ahead the proper amount by the rotation of the knurled rollers. Inasmuch as the tape is gripped near one edge, the printed characters are not obscured to the slightest degree. Furthermore, there is no blurring or unsteadiness of the characters by lateral shifting movements of the tape, as in prior machines, since the tape is maintained taut and always moves along a straight line.

We claim:—

1. In a type-bar printing telegraph machine wherein the printing elements are pivotally mounted type-bars which are provided with a plurality of longitudinally spaced characters and are always rocked to the same printing position, tape feeding means for moving a receiving tape forwardly after each character is printed and maintaining the same continuously in the same plane and which imparts no other motion to the tape at any time, and means for causing one or the other character to be printed.

2. In a type-bar printing telegraph machine wherein the printing elements are pivotally mounted type-bars which are provided with a plurality of longitudinally spaced characters and are always rocked to the same printing position, tape feeding means for moving a receiving tape forwardly after each character is printed and maintaining the same continuously in the same plane and which engages the portion of the tape on which characters have been printed while maintaining the printed characters entirely unobstructed from the last printed character.

3. In a type-bar printing telegraph machine as set forth in claim 2, means for maintaining the tape taut without any lateral shifting at any time as it passes through the machine.

4. In a type-bar printing telegraph machine as set forth in claim 2, means for stepping the tape forward and maintaining it taut comprising gripping rollers engaging the tape adjacent one edge only and leaving the remaining surface of the tape unobscured.

5. In a type-bar printing telegraph machine, wherein the printing elements are pivotally mounted type-bars which are provided with a plurality of longitudinally spaced type characters which are always rocked to the same printing position, a platen having an arcuate periphery forming a stop for the type-bar characters, means for moving a tape across said platen and maintaining the tape taut and substantially tangential to

said arcuate periphery and always in the same plane.

6. In a type-bar printing telegraph machine as set forth in claim 5, means for maintaining the tape stationary while shifting said platen in the same plane laterally of the tape so that the platen shall be engaged by only one of the type-bar characters as desired.

7. In a type-bar printing telegraph machine, as set forth in claim 5, an inking ribbon movable across the platen, and means for maintaining the tape stationary while simultaneously shifting said platen and ribbon laterally of the tape while maintaining them in the same respective horizontal planes in order that the platen and ribbon shall be engaged by only the desired type character of a printing element, the other character or characters extending beyond the platen and ribbon.

In testimony whereof we affix our signatures.

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