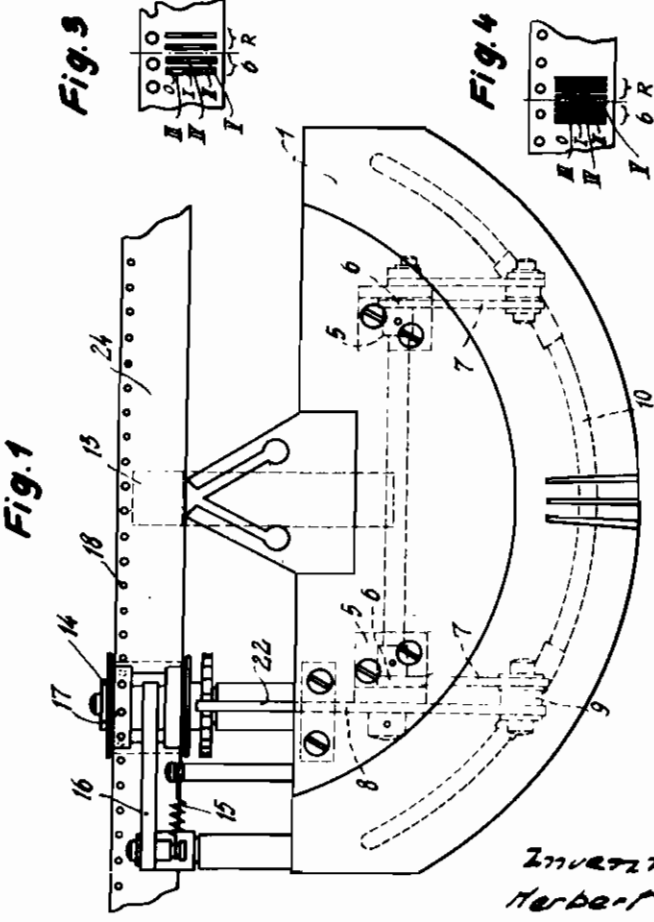
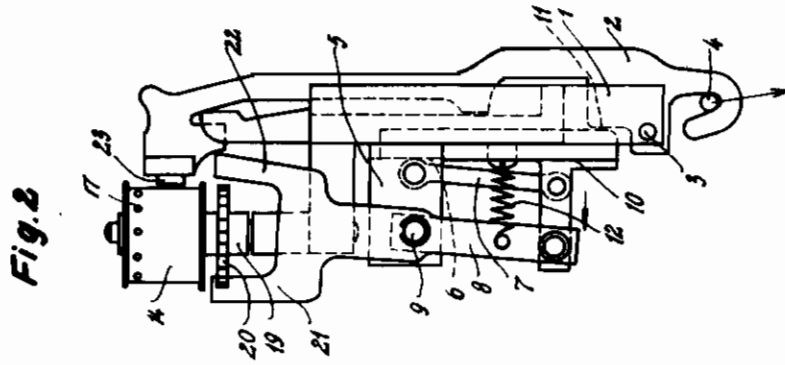


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DEVICES FOR PRODUCING STORING TAPES
FOR TELEGRAPH TRANSMITTERS
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DEVICES FOR PRODUCING STORING TAPES FOR TELEGRAPH TRANSMITTERS

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This invention relates to improvements in devices for producing storing tapes for telegraph transmitters.

In telegraphy, storing tapes are, as a rule, employed which are prepared on a particular device. In general, perforated tapes have hitherto been employed for this purpose which are perforated on the so-called keyboard perforator and transmitted to a perforated tape transmitter.

The known devices for the production of storing tapes, particularly the so-called keyboard perforators are relatively complicated. They necessitate a motor drive, a set of selector bars and devices for the keyboard as is usual in standard teleprinters for the five-unit code.

The object of the invention consists in simplifying the construction of such devices. To this end, the type levers of a normal typewriter carry as types the combination images of a teleprinter code so that upon the depression of the key, the typewriter records the combination images on a tape or sheet.

The device is rendered particularly simple if the impulse images are impressed on the storing tapes in the same manner as the letter images in any standard typewriter. In this case the typewriter may be employed instead of the keyboard perforator without it being necessary to employ the motor drive.

If impulse combinations of the six-unit code are employed according to the invention for the impulse images also all devices for the type case shifting; i. e., the shift bars and the locking bars may be dispensed with on the keyboard perforator. To maintain the tapes and types narrow the impulse images are arranged side by side in various, preferably in two rows.

The construction of the typewriter need insofar be altered as it is provided instead of with the roller and carriage with guiding and stepping mechanisms for a paper tape.

The control motion for the actuation of the stepping mechanism may be derived in a simple manner from the devices of the typewriter which control in the case of a standard construction the step by step advancement of the carriage. To produce the impulse images on the tape in an accurately defined position, it is preferable to employ a tape which is preperforated and which is advanced by a correspondingly toothed roller.

A tape as just described is preferably prepared in a transmitter which scans the impulse combinations of the six-unit code in a manner well known in the art, but transmits the impulse combinations of the five-unit code and inserts upon

the shifting of the type case the corresponding shift combination automatically. For the photo-electrical utilization the transmitter must be correspondingly constructed; however, also such photo electrical scanning devices are well known.

In the accompanying drawings is shown in Figs. 1 and 2 the device according to the invention in diagrammatic form. The complete typewriter is not shown but only the parts which are essential to the invention.

In a type segment 1 are mounted as indicated at 2 the type levers 2. Only one type lever 2 is shown. The type lever is pulled as indicated at 4 in the direction of the arrow by the key lever and the intermediate articulated joint, thus bringing it into the position shown. To the segment 1 is secured a bearing block 5 on which is mounted a lever 7 as indicated at 6. On the same block is arranged a control lever 8 as indicated at 9. The two levers 7 and 8 are pivotally secured at their lower ends to a stepping ring 10 which under the action of the type lever stop is displaced in parallel relation to itself. The type lever contacts the stepping ring 10 as indicated at 11 shortly before it attains the stop position shown and presses it upon depression of the key lever into the position shown. The control lever 8 is rotated in counter-clockwise direction by the spring 12 secured to the segment 1 as soon as the type lever returns to its initial position. The stepping ring 10 is designed in the form of an arc as shown in Fig. 1 and is therefore actuated by all type levers.

Instead of a roller the typewriter is provided with a stop plate 13 over which passes a paper tape 24. The paper tape is supplied through rollers from a pay-out receptacle in a manner as is usual in teleprinters and is advanced by a feed reel 14. This reel is pressed under the action of a spring 15 by a lever 16 against a counter-roller (not shown) so that upon its rotation the tape is advanced by a step. The feed reel 14 is arranged on the same axis 19 with a gear 20 with which two fork-shaped ends 21 and 22 of the control lever 8 come into engagement. In this manner upon each reciprocation of the lever 8, i. e., upon each stop of the type, the feed reel is advanced by a step. To maintain an accurate division a ratchet wheel may be provided in a known manner for the feed shaft.

When using a typewriter with motor drive, the feed shaft is preferably driven by the motor and released by the lever 8 only step by step.

The feed reel 14 is provided with feed pins 17 and the paper tape is preperforated as indi-

cated at 18 so as to attain an exact division. In this manner the type print appears always at a point which is accurately fixed with respect to the perforation so that the scanning which is effected in a transmitter with the aid of a photoelectrical scanning may be considerably simplified. However, the preperforation of the strip may also be dispensed with. In this case the transmitter must be provided with a device which permits upon the commencement of the scanning to adjust the proper position of phase of the tape with respect to the scanning point and to maintain it during the passage of the tape.

The types 23 of the type lever are so designed that combination images as shown in Fig. 3 are produced on the tape. Consequently, the tape lever carries the combination images of the six-unit code instead of letters and figures. The combination images of the six-unit code are denoted in Fig. 3 in succession by 0, I, II, III, IV and V. At first the number "6" is represented which belongs to the figure case. It is assumed that the characteristic impulse, i. e., the impulse which determines the type case is a current impulse for the figures.

The corresponding point of the storing tape is therefore not printed. In the same column as the characteristic impulse are represented the two first impulse combinations of the figure "6," i. e., "no current" — "current." The impulse combinations III to V are printed in the next column. They consist of "not current" — "current" — "no current." Let "R" be the next impulse combination. By depressing the type lever the impulse combination --+--+--+ (+ corresponds to "current," — to "no current") is printed. To enable the printing of figures which are

produced in a typewriter by depressing the shift key and another key two impulse combination images may be arranged one over the other on separate type levers and the selection of the various impulse combinations is then effected by raising and lowering the stop plate 13 and the tape 14.

The use of the six-unit code removes all these difficulties which would otherwise be presented as a result of the type case shift to be inserted when using a standard typewriter for printing impulse combinations according to the five-unit code.

The tape printed according to the six-unit code may, however, be scanned in a known manner by a transmitter which transmits impulse combinations of the five-unit code and which inserts the shift combinations automatically when shifting the type case.

To avoid faults from occurring as a result of faults in the paper or of dust falling into the telegraph transmitter and the like, the impulse combinations may be printed as shown in Fig. 4 side by side in the reverse sense. The same figures are chosen as in Fig. 3. In the first column are printed the first three impulses of the impulse combination for the figure "6." Then follows the repetition of this line in the reverse sense which is naturally printed by the same type levers. Instead of a space not printed there appears upon this repetition always a printed space and instead of a printed space a space not printed. The telegraph transmitter which scans these impulse images photoelectrically must be so designed that the impulse is transmitted only if the impulse images correspond to the original impulse combination and to the repetition.

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