March 25, 1952 G. LANZA 2,590,421

PRINTING TELEGRAPH APPARATUS

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Fig. 1

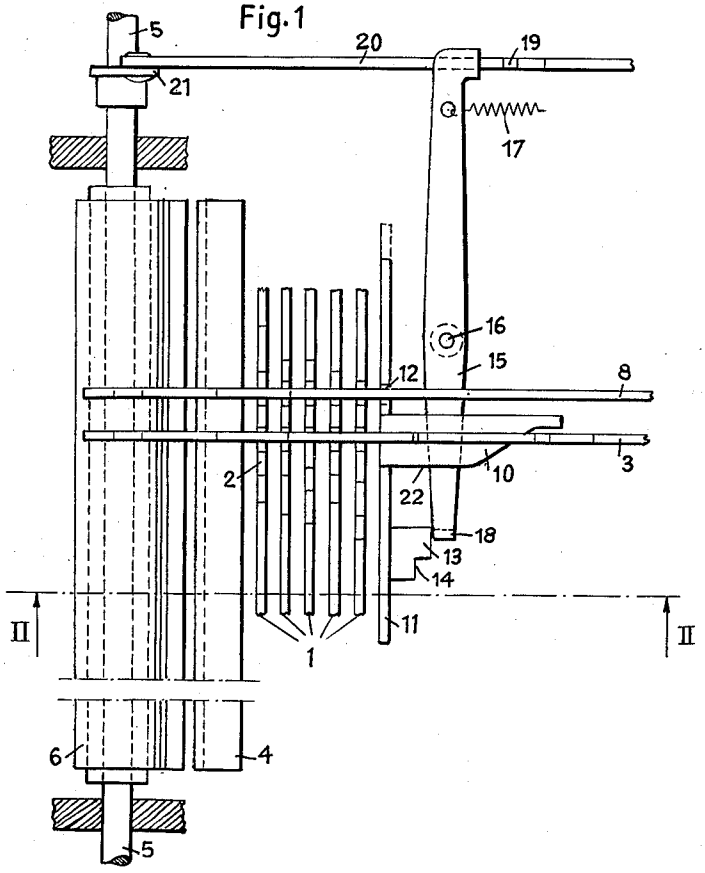
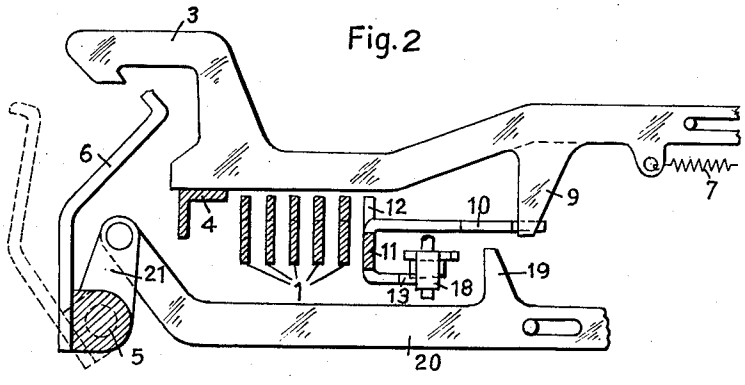


Fig. 2



Inventor
Guglielmo Lanza
By Robert E. Burns
Attorney

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PRINTING TELEGRAPH APPARATUS

Guglielmo Lanza, Turin, Italy, assignor to Ing. C. Olivetti & C. S. p. A., Ivrea, Italy

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7 Claims. (Cl. 178—33)

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The present invention relates to telegraph apparatus and particularly to improvements in printing telegraph apparatus operating on the so-called five unit alphabet.

It is known that in operating on a five unit alphabet 32 different combinations of impulses may be obtained. Normally all the 32 combinations are employed and to each combination of impulses corresponds a given signal, which may be a particular function such as the movement of a typebar. Therefore it is not possible to add further signals, as it is requested in the case, for example, of certain oriental languages having a great number of signs.

It is an object of this invention to provide a printing telegraph apparatus in which different functions may be controlled by means of one combination of impulses, whereby a number of combinations of impulses becomes available for other signals.

A further object of this invention is to provide a printing telegraph apparatus in which a combination of impulses may be translated into different functions.

Another object of the invention is to provide a printing telegraph receiving apparatus capable of selectively translating a repeatedly received combination of impulses into different functions.

Still another object of the invention is to embody into a printing telegraph receiving apparatus a mechanism by means of which a repeatedly received combination of impulses may be selectively translated into different machine functions.

Other objects of the invention will be apparent from the specification, drawing and claims accompanying herewith.

Referring to the drawing:

Fig. 1 is a fragmentary plan view of a printing telegraph receiving apparatus operating on a five unit alphabet;

Fig. 2 is a cross-sectional view taken on line II—II of Fig. 1.

Referring now to Fig. 1, 1 are five horizontally receiving code bars or selecting bars each of which is longitudinally movable into two different positions. Under the control of the signals received from a transmitting station the set of bars 1 may assume, therefore, 32 permutative positions, as many as are the possible combinations of impulses.

The upper edges of the code bars 1 are formed with notches 2 which are so arranged that for each permutative position of the set of bars 1 normally one transverse row of notches comes into alignment.

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Above the code bars 1 there is arranged a plurality of pull bars 2, a single one being illustrated in Fig. 1, with the exception of a further pull bar 8 hereinafter described. Each pull bar 3 is adapted by actuation thereof, to effect the operation of a particular function such as the movement of a typebar.

A pull bar lifting frame 4 normally holds the pull bars 1 in a position (Fig. 2), in which they are out of the path of the code bars.

Upon the reception of a signal the code bars 1 assume the positions corresponding to the received combination of impulses and the frame 4 is lowered. While one pull bar 3 is admitted into the row of notches the remaining ones are blocked by one or more of the code bars 1 whose corresponding notch is not in alignment.

5 is a shaft which at each receiving machine cycle rocks first counter-clockwise and then clockwise (Fig. 2.) Rigidly secured to the shaft 5 there is a printing bail 6 which, when rocking counterclockwise with the shaft, engages the pull bar 3 which has been admitted and pulls it toward the left (Fig. 2). The pull bar 3 effects, therefore, its particular function. When thereupon the bail 6 rocks clockwise, the pull bar 3 is permitted to be restored by its spring 7.

Having now described the receiving apparatus of a known type, there will be disclosed hereinafter the mechanism according to the invention.

The notches 2 are so arranged that for a certain permutative position of the code bars 1 two transverse rows of notches instead of one come into alignment. In correspondence of one of these rows there is the pull bar 3, which is now supposed to be adapted to effect carriage return. In correspondence of the other row of notches 2 there is the pull bar 8, which is supposed to be adapted to effect line spacing of the platen roller. Carriage and platen roller are not illustrated in the drawing but are of known construction, such as described in Patent 1,565,165.

The permutative position of the set of code bars 1, for which the two transverse rows of notches come into alignment, is effected upon reception of the combination of impulses corresponding to the carriage return signal. No combination of impulses is provided for the platen roller line spacing signal and at the transmitting station these two machine functions may be controlled by means, as for example, of a single key.

The pull bar 3 has a projection 9 which, if the pull bar is displaced toward the left (Fig. 2), is adapted to act upon an inclined edge of a bent-over lug 10 of a bar 11. This bar 11 is provided with two slots, not illustrated in the drawing, by

means of which it is adapted to slide longitudinally into two different positions. Normally the bar 11 is held by a not illustrated spring in its lower position (Fig. 1), in which a lug 12 projecting from the bar is placed under the pull bar 8.

The bar 11 has a further bent-over lug 13 formed with a step 14. A lever 15, pivoted at 16 and urged by a spring 17 in a clockwise direction (Fig. 1), is provided with a bent-over lug 18 normally resting on the external edge of the lug 13.

The opposite end of the lever 15 may be acted upon by a projection 19 of a lever 20 pivoted on an arm 21 secured to the shaft 5.

If the receiving apparatus receives the carriage return signal, the code bars 1 assume the corresponding permutative position and the two transverse rows of notches come into alignment. Upon lowering of the frame 4 the pull bar 3 is admitted into the corresponding row of notches, whilst the pull bar 8 is arrested by the lug 12 of the bar 11.

Therefore, only pull bar 3 is actuated and carriage return is effected. During the displacement of the pull bar 3 its projection 9 engages the inclined edge of the lug 10 and causes the bar 11 to be displaced upwards. (Fig. 1). Upon this displacement the lug 18 of the lever 15 is permitted to fall into the step 14.

At the same time, during the counterclockwise rocking of the shaft 5, the arm 21 pulls the lever 20 toward the left (Fig. 2) and the projection 19 engages the upper end of the lever 15 (Fig. 1). Thus the lever 15 is rocked counterclockwise (Fig. 1) and the lug 18 is lifted again from the step 14. Nevertheless, the bar 11 is held in its upper position by the projection 9 by which it has been displaced and which, during the counterclockwise rocking of the shaft 5, after having passed the inclined edge of the lug 10, is now sliding along the edge 22 of the lug itself.

Upon the return rocking of the shaft 5 in a clockwise direction, the projection 19 of the lever 20 disengages the upper end of the lever 15, whose lug 18 may now fall again into the step 14 of the lug 13, the lever 15 being urged by the spring 17. The mechanism is so timed that the lug 18 falls into the step 14, thus locking the bar 11 in its upper position, before the projection 9, when sliding toward the right along the edge 22, reaches the inclined edge again.

If now at the transmitting station the carriage return signal is repeated, the code bars 1 assume the same permutative position as before and this time both pull bars 3 and 8 are admitted, as the lug 12 of the bar 11 is now out of the path of the pull bar 8.

Upon actuation of both pull bars 3 and 8, the pull bar 3 runs idle, as the carriage has already been returned during the preceding receiving cycle, and the pull bar 8 effects line spacing of the roller platen. Also at the end of this receiving cycle the bar 11 remains locked in its upper position, because during the same the lug 10 was acted upon by the projection 9 of the pull bar 3. Therefore, if the signal is further repeated, the roller platen will be spaced again and so forth during all the following repeated carriage return cycles.

But if a different signal is received, the code bars 1 assume a permutative position for which pull bars 3 and 8 are no more admitted. Therefore, as this time the projection 9 doesn't engage the bar 11, this bar, when unlocked from the lug 18 during the counterclockwise rocking of the shaft 5, will be lowered by its spring and reset its lug 12 into the path of the pull bar 8.

It has been supposed hereinbefore to control by means of one combination of impulses two machine functions as carriage return and roller platen line spacing. These are two particular functions which, after the first machine cycle in which only carriage return is effected, may be actuated together without in any way restraining the performances of the machine. As a matter of fact, whilst on one hand by repeatedly sending the carriage return signal the platen roller may be spaced several times, it is obvious that it would be nonsense to want to repeat the carriage return.

Of course, there may be more different embodiments of the invention in one receiving apparatus, whereby one combination of impulses becomes available for each embodiment. In another embodiment two further machine functions as "Figures shift" and "Bell" may be controlled by means of one combination of impulses. In this case, if the machine is in "Letters" position and the bell should be actuated, the signal "Figures" is sent twice. During the first receiving cycle the machine shifts to "Figures," during the second receiving cycle the pull bar of the figures shift works idle and only the bell signal is actuated. If, in the alternative, the machine is already in "Figures" position, the signal "Figures" is sent twice too, whereby during the second receiving cycle the bell signal is actuated. Like the preceding case, it is obvious that it would be nonsense to want to repeat the figures shift.

Also more than two machine functions may be controlled by one combination of impulses. In this case a cascade system may be employed, by providing between the second and the third pull bars a mechanism identical with that one hereinbefore described for the first pull bar 3 and the second pull bar 8.

What I claim is:

1. In a printing telegraph receiving apparatus, a set of receiving code bars individually movable into two different positions upon reception of a combination of impulses, a plurality of operating members arranged adjacent said code bars, each operating member being adapted, upon actuation thereof, to operate a particular machine function of a plurality of machine functions, said code bars being formed with notches for selecting said operating members, one operating member being normally selected for each permutative position of said set of code bars, and means for operating further machine functions, said means being associated with one of said operating members and conditioned thereby upon actuation thereof to operate said further machine functions upon repeated actuation of said last named operating member.

2. In a printing telegraph receiving apparatus, a set of receiving code bars individually movable into two different positions upon reception of a combination of impulses, a plurality of operating members arranged adjacent said code bars, each operating member being adapted, upon actuation thereof, to operate a particular machine function of a plurality of machine functions, said code bars being formed with notches for selecting said operating members, one operating member being normally selected for each permutative position of said set of code bars, and means for operating further machine functions, said means being associated with one of said operating mem-

bers selected upon reception of a given combination of impulses and being conditioned thereby upon actuation thereof to operate said further machine functions upon repeated reception of said given combination of impulses.

3. In a printing telegraph receiving apparatus, a set of receiving code bars individually movable into two different positions upon reception of a combination of impulses, a plurality of operating members arranged adjacent said code bars, each operating member being adapted, upon actuation thereof, to operate a particular machine function of a plurality of machine functions, said code bars being formed with notches for selecting said operating members, one operating member being normally selected for each permutative position of said set of code bars, and an additional operating member for operating a further machine function, said additional operating member being adapted to be selected together with one of said normally selected operating members upon reception of a given combination of impulses and being conditioned by said last named operating member, upon actuation thereof, to operate said further machine function upon repeated reception of said given combination of impulses.

4. In a printing telegraph receiving apparatus, a set of receiving code bars individually movable into two different positions upon reception of a combination of impulses, a plurality of operating members arranged adjacent said code bars, each operating member being adapted, upon actuation thereof, to operate a particular machine function of a plurality of machine functions, said code bars being formed with notches for selecting said operating members, one operating member being normally selected for each permutative position of said set of code bars, an additional operating member for operating a further machine function said additional operating member being adapted to be selected together with one of said normally selected operating members upon reception of a given combination of impulses, and means associated with said normally selected operating member for preventing actuation of said additional operating member during the first receiving cycle of said given combination of impulses and for permitting actuation of said additional operating member upon repeated reception of said given combination of impulses.

5. In a printing telegraph receiving apparatus, a set of receiving code bars individually movable into two different positions upon reception of a combination of impulses, a plurality of operating members arranged adjacent said code bars, each operating member being adapted, upon actuation thereof, to operate a particular machine function of a plurality of machine functions, said code bars being formed with notches for selecting said operating members, one operating member being normally selected for each permutative position of said set of code bars, an additional operating member for operating a further machine function, the notches formed in said code bars permitting selection of said additional operating member together with one of said normally selected operating members upon reception of a given combination of impulses, and means controlled by said normally operating member and associated with said additional operating member, said means being normally enabled to prevent actuation of said additional operating member and being disabled to permit actuation of said additional operating member upon repeated reception of said given combination of impulses.

6. In a printing telegraph apparatus as set forth in claim 5, locking means for locking said controlled means in a disabled position substantially during the return stroke of each receiving cycle and for unlocking same substantially during the forward stroke of each receiving cycle.

7. In a printing telegraph receiving apparatus, a set of receiving code bars individually movable into two different positions upon reception of a combination of impulses, a plurality of operating members arranged adjacent said code bars, each operating member being adapted, upon actuation thereof, to operate a particular machine function of a plurality of machine functions, said code bars being formed with notches for selecting said operating members, one operating member being normally selected for each permutative position of said set of code bars, an additional operating member for operating a further machine function the notches formed in said code bars permitting selection of said additional operating member together with one of said normally selected operating members upon reception of a given combination of impulses, a control means movable into two positions, said control means in one of its positions preventing actuation of said additional operating members and in the other of said positions permitting actuation of same, means for normally holding said control means in said first named position, means actuated by said normally selected operating member for moving said control means into said second named position and for retaining same in said position upon reception of said given combination of impulses, and locking means for locking said control means in said second named position, said locking means first unlocking said control means and then locking same substantially within the lapse of time during which said control means are retained in said second named position by the means actuated by said normally selected operating member.

GUGLIELMO LANZA.

REFERENCES CITED

The following references are of record in the file of this patent:

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