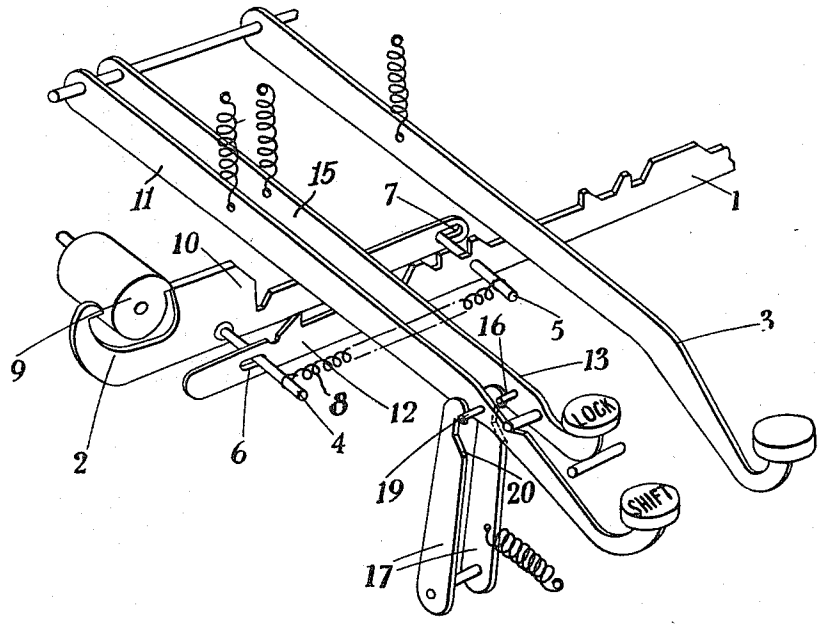
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TELEGRAPH SIGNAL TRANSMITTING APPARATUS

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INVENTOR
RONALD G. GRIFFITH
BY R. G. Hopgood
ATTORNEY

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TELEGRAPH SIGNAL TRANSMITTING APPARATUS

Ronald George Griffith, Croydon, England, assignor to Creed and Company, Limited, Croydon, England

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8 Claims. (Cl. 178—17)

This invention relates to keyboard controlled apparatus for operating according to a code composed of a definite number of permutation signal elements in each character signal combination and each case signal combination, and particularly to such apparatus in which case signalling operations are effected under control of any of a plurality of signal key levers.

Different types of keyboard controlled telegraph apparatus have been evolved and developed for different purposes and to suit different conditions. In certain instances, keyboard controlled signal transmitters have been proposed in which the actuation of any signal keylever in a keyboard effects the transmission of a signal combination composed of a definite number of impulse conditions together with an additional signal impulse or selective condition which serves to identify at a distant receiving apparatus the case group of the characters from which the particular character is to be selected. In such cases the signal combination is composed of two parts, one part effecting at the distant receiving apparatus a selection common to more than one case group of characters, and the other part effecting the selection of the case group from which the final selection of the printing character is to be made and where the first part of the signal is composed as is usual in such instances, of five permutation elements, and the second part a single additional element, such a code is equivalent to a six unit code. In another instance to which the invention more particularly though not exclusively relates a keyboard controlled apparatus has been evolved in which each signal combination is normally composed of only one part for effecting a selection which may be common to more than one case group and in which on actuation of any signal keylever involving a change of case group an appropriate case signal combination is automatically inserted. For further particulars of this latter type of apparatus reference can usefully be made to my U. S. Letters Patent No. 1,921,407.

The majority of start-stop telegraph systems are adapted to operate on a five unit code and case grouping of characters is employed in order to provide the requisite number of selections, letters for instance being assigned to one case group and figures and punctuation marks to a second case group. In keyboard controlled apparatus for such systems it is an advantage to arrange the layout of the keyboard in a similar manner to that known as the standard typewriter keyboard with upper and lower case groups, so that the mode of operation for the different characters is identical from an operator's point of view. A difficulty which arises in this respect is that the case grouping, as already adopted for telegraph purposes, does not agree entirely with that adopted for the standard typewriter. There are, for instance, a greater number of characters in the lower case of the standard typewriter than can be obtained in a single case group selectable by telegraph signals according to a five unit code when, as is usual, each signal element is only of one of two conditions. With the keyboard controlled telegraph apparatus according to the previously mentioned U. S. Letters Patent No. 1,921,407 it will be noted that this difficulty is obviated in that no additional manual operations are normally required on the part of the operator when a change of telegraph case group is involved. A further difficulty, however, is that with this keyboard controlled apparatus no special provision is made in such cases for effecting the required case signal operations to distinguish between two characters corresponding to a single key lever, when a change of typewriter keyboard case group is involved beyond the usual method of allotting particular case shift keylevers which effect the operation of corresponding case signals instead of character signals. As with this method the shift keylevers and the signal keylevers both actuate a series of permutation members common to both sets of keylevers, it is impossible to lock the shift key in the depressed position in the same way as in a typewriter whilst keylevers for characters in the upper case group are operated.

Accordingly, the present invention comprises a keyboard controlled apparatus for telegraph systems in which character signals and case shift signals consist of signal combinations each comprising a like number of permutation signal elements, characterized in this that on the one hand certain pairs of characters corresponding to opposite characters in different case groups in the receiving apparatus are allotted individual key levers and on the other hand other pairs of characters corresponding to opposite characters in different case groups in the receiving apparatus are allotted common key levers, means being provided whereby on the one hand the transmission of the appropriate case shift signal combination is initiated by the depression of a first-mentioned individual key-lever involving a case shift without any further operation on the part of the operator, whilst on the other hand the transmission of the appropriate case shift combination on the depression of a second-mentioned common key lever involving a case shift

is brought about by the actuation of a separate shift lever.

In telegraph apparatus of the class referred to the most convenient means for controlling the operation for the signal elements in a signal combination is through a corresponding series of permutation members operable on actuation of a signal keylever in the keyboard, and the most convenient means of effecting the control of case signalling operations from the beyboard is by means of an additional member which is operable from the keyboard in a similar manner to the permutation members. For the purpose of the present invention, therefore, this case signal controlling member may be stated to be operable by any one of a plurality of signal key levers and by a case shift key lever independently of the simultaneous actuation of any said signal key lever.

In the example hereinafter shown and described the case signal control member is composed of two portions, one portion being operable by any one of a plurality of signal keylevers, the second portion being normally movable by the first said portion and a case shift keylever is adapted to actuate the second portion independently of the first portion.

It is believed that the main application of the invention will be to keyboard controlled signal transmitters for start-stop telegraph systems, but it will be appreciated that the principles described are equally applicable to the analogous case of tape perforators for such systems.

The accompanying drawing shows an example of the manner in which the invention may be carried out. Only those parts necessary for comprehending the invention are shown, the remaining portions of the keyboard controlled apparatus being already known in the art, it is not considered necessary to include in the present specification.

Referring to the drawing, a case signal control member is composed of two portions, 1 and 2, the first portion 1 being selectively operable in opposite longitudinal directions by any of a plurality of key levers of which one only, 3, is shown, in a keyboard acting on inclined cam notches in the same manner as the usual permutation bars of such keyboard mechanism, and the second portion 2 being movable relatively to the first portion in the same longitudinal direction on pins 4 and 5 attached to portions 2 and 1 and sliding in slots 6 and 7 in portions 1 and 2 respectively. A helical spring 8 attached at each extremity thereof to the pins 4 and 5 on portions 1 and 2 respectively of the case signal control member tends to move these portions relatively to the positions shown in the drawing, when further relative movement in that direction is prevented by the ends of slots 6 and 7. Under these conditions the two portions of the case signal control member normally move together; portion 2 forming the operating portion of the case signal control member which in moving from one to the other of its two extreme longitudinal positions effects the case signalling operations as described in the U. S. patent referred to and indicated in the present drawing by the cam clutch 9 which effects movement of a half revolution at each movement of portion 2.

On the upper edge of the second portion 2 is an inclined cam notch 10 which is adapted to be engaged by the under edge of a shift key lever 11 on depression of this key lever when portion 2 is in the right hand position shown in the drawing and thus to actuate this portion 2 to its other or left hand position. This movement takes place independently of the position to which portion 1 may be actuated by a character keylever such as keylever 3. The shift key 11 may thus be held depressed, therefore, with the operating portion 2 of the case signal control member maintained in the position which effects the corresponding case shift signalling operation and independently of the simultaneous actuation of any keylever which may actuate portion 1 in the opposite direction and which would normally effect the opposite or reshift signal operation. In order to relieve any character keylever of the load of tensioning helical spring 8 in these circumstances, a cam fall 12 inclined in the opposite direction to that of cam face 10 is preferably provided on portion 1 under case shift keylever 11 so that the two portions are positively actuated in opposite directions against tension of spring 8 by the case shift lever 11 itself. On releasing the lever 11 spring 8 releases portion 1 to the left hand position whilst portion 2 is still held from movement in its left hand position by case lever 12 engaging the vertical face adjacent cam face 10.

In order to hold the shift key 11 in the depressed position a locking key 13 for shift key 11 is shown in the drawing, the operation for locking and release of which are similar to that of a standard typewriter. Normally as in a typewriter the key 11 will remain depressed as long as it is held down by the finger piece. If, however, the shift lock key 15 is depressed either to depress shift key 11 or following the depression of the latter key a pin 16 on the locking key 15 permits a tooth in a U-shaped spring actuated member 17 to engage the pin 16 and hold the shift key in the depressed position. To release the shift key it is momentarily depressed still further when a pin 19 thereon engages an inclined cam face 20 on the spring actuated member 17 and actuates this member against its spring tension to release pin 16 on locking key 15 which is thereupon returned by its spring to the normal position when pin 16 prevents member 17 engaging pin 19 on the shift key 11.

The constructional details of the above described mechanism are given by way of example and the invention is not to be considered as limited to this specific construction. It will be seen that with the means outlined in the present specification the operation of the keyboard controlled apparatus can be more closely approximated to that of a typewriter, and a member for controlling case signalling operations from any of a plurality of character keylevers, can also be positively actuated by a case shift keylever independently of and simultaneously with the said character keylevers.

What is claimed is:

1. In a keyboard controlled apparatus for a start stop telegraph system, a plurality of signal keylevers, a case signalling member controlled from said keylevers in accordance with the case grouping of the character of a depressed keylever, and a separate case shift keylever in said keyboard effective to actuate said case signalling member independently of the simultaneous actuation of any of said plurality of keylevers.

2. In a keyboard controlled apparatus for a start stop telegraph system, a plurality of signal keylevers, a case signal control member having two portions, one portion being operable by any

of said plurality of signal keylevers, the second portion being normally movable by the said first portion, and a case signalling keylever effective to actuate said second portion independently of said first portion.

3. In a keyboard controlled apparatus for a start stop telegraph system, a case signalling member, a control member therefor movable between one and the other of two positions, a case shift keylever effective on depression to move said control member to one of said positions, a plurality of keylevers, a member selectively operable by any of said keylevers to one or another of two positions, and spring means connecting the latter said member to said control member.

4. In a keyboard controlled apparatus for a start stop telegraph system, a case shift keylever, a case signal control member having an inclined cam face and a vertical face by which the control member is set and locked on depression of said case shift keylever, a separate operating portion for said control member and movable relatively thereto between two extreme positions; and spring means connecting said operating portion and said control member.

5. In a keyboard controlled apparatus for a start stop telegraph system, a case shift keylever, a case signal control member, a separate operating portion therefor, and movable relatively thereto between two extreme positions, spring means connecting said operating portion and said control member which latter are adapted to be actuated in opposite relative directions on depression of said case shift keylever.

6. In a keyboard controlled telegraph apparatus in which certain characters in opposite case groups are allotted individual keylevers and certain other pairs of characters each in opposite case groups are allotted common keylevers, a case shift keylever, and case signalling means selectively controlled by the depression of any of the first mentioned said individual keylevers and also by said case shift keylever when a change of case is required for any character of one of said pairs allotted to common keylevers.

7. In a keyboard controlled apparatus the combination according to claim 1 characterized by the provision of means for locking said case shift keylever in a depressed position.

8. In a keyboard controlled apparatus for telegraph systems in which character signals and case shift signals consist of signal combinations each comprising a like number of permutation signal elements, individual key levers on the one hand allotted to certain pairs of characters corresponding to opposite characters in different case groups in the receiving apparatus, common key levers on the other hand allotted to certain other pairs of characters corresponding to opposite characters in different case groups in the receiving apparatus, a shift lever, means whereby on the one hand transmission of the appropriate case shift signal combination is initiated by the depression of a first-mentioned individual keylever involving a case shift without any further operation on the part of the operator, and means whereby on the other hand the transmission of the appropriate case shift combination on depression of a second-mentioned common key lever involving a case shift is brought about by the actuation of said shift lever.

RONALD GEORGE GRIFFITH.

DISCLAIMER

1,928,421.—*Ronald George Griffith*, Croydon, England. TELEGRAPH SIGNAL TRANSMITTING APPARATUS. Patent dated September 26, 1933. Disclaimer filed February 26, 1935, by the assignee, *Creed and Company, Limited.*

Hereby enters the following disclaimer:

In claim 1, no claim is made to the combination recited except when the case signalling member controls the transmission of the code combinations of impulses for each shift and unshift condition.

In claim 6, no claim is made to the combination recited except when the case signalling means controls the transmission of the code combinations of impulses for each shift and unshift condition.

"7. In a keyboard controlled apparatus the combination according to claim 1 characterized by the provision of means for locking said case shift keylever in a depressed position."

[*Official Gazette March 19, 1935.*]