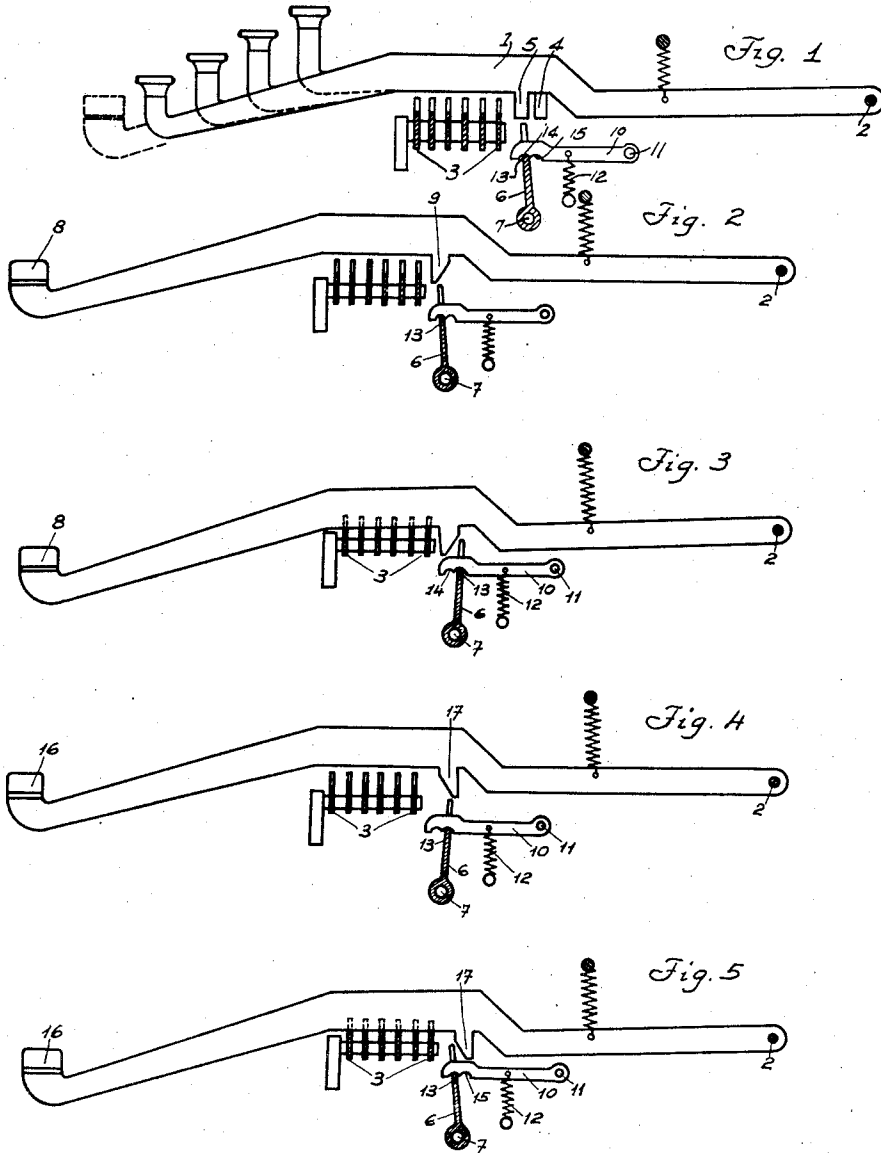


June 1, 1943.

G. MODIGLIANI
SELECTIVE BLOCKING ARRANGEMENT FOR THE KEYBOARDS
OF TELEPRINTERS HAVING COMPLETE KEYBOARDS
Filed Sept. 28, 1939

2,320,637



Inventor

GINO MODIGLIANI

By

Maxwell E. Sparrow

Attorney

UNITED STATES PATENT OFFICE

2,320,637

SELECTIVE BLOCKING ARRANGEMENT FOR
THE KEYBOARDS OF TELEPRINTERS
HAVING COMPLETE KEYBOARDSGino Modigliani, Ivrea, Aosta, Italy; vested in the
Alien Property CustodianApplication September 28, 1939, Serial No. 296,922
In Italy September 29, 1938

3 Claims. (Cl. 197-107)

In telegraphic printers operating on the system of five impulse codes, each possible code combination corresponds in general to two different signs (for example one letter and one figure) the choice between the two being made by operating upon the carriage of the machine. If the keyboard is of the "reduced" type in which each key corresponds to two signs, the operator knows that if he requires to transmit signs corresponding for example to the lower parts of the keys after he has been transmitting signs corresponding to the upper parts of the said keys, or vice versa, it is necessary to operate the shift key of the carriage. If on the other hand the keyboard is of the "complete" type in which each key corresponds to one sign only, the operator may easily be trapped if he forgets to operate the shift key of the carriage in transferring from letter keys to figure keys or vice versa. In order to completely avoid this inconvenience it is necessary that when transmitting letters the keys corresponding to figures and other signs should be blocked against movement until the shift key of the carriage is operated, and similarly the letter keys should be blocked against movement when transmitting figures and other signs.

The present invention is concerned with a selective blocking arrangement for the two groups of keys of a keyboard, actuated by means of keys controlling the carriage.

In the accompanying drawing there is illustrated a mechanism according to the invention which is of great simplicity and operates with certainty. In the accompanying drawing Fig. 1 shows the blocking arrangement and Figs. 2 to 5 illustrate various phases in the operation thereof.

It will be seen from Fig. 1 that each of the key levers 1 pivoted at 2 controls the code bars 3 in well known manner. The levers are provided with downward projections so arranged that the downward projections 4 of all the levers corresponding to letters are arranged in alignment, whilst the downward projections 5 of all the levers corresponding to figures are also arranged in alignment but in a row parallel to that of the projections 4. A flap 6 extends across the whole width of the keyboard and is so arranged as to be capable of a certain angular rocking movement about an axis 7 between two different positions, one of which is related to the alignment of the projections 4 and the other to the alignment of the projections 5. It will readily be seen that when the flap 6 is in position beneath the projections 5 as shown in Fig. 1, the corresponding keys cannot be depressed,

such keys however being rendered free when the flap is moved to a position beneath the line of projections 4, in which case of course the keys corresponding to the projections 4 are blocked against movement. Two shift keys for the carriage are arranged at opposite sides of the keyboard, either one of which may determine upon the code bars 3 the combination corresponding to the transmission which is desired.

Each of these two levers includes a downwardly projecting tooth, the positions of which correspond, respectively, to the positions of the projections 4 and 5 on the keyboard levers, but these two teeth (Figs. 2 to 5) are of angular profile such that they do not make an abutting engagement with the flap 6 but they operate to push laterally upon the said flap. Let it be supposed by reference to Figs. 2 and 3 that the lever of the key 8 determines upon its operation the code combination which corresponds to the transfer from the position "letters" to the position "figures and signs," and let it be supposed that previously a series of letters have been transmitted, then the arrangement will be in the position corresponding to that shown in Fig. 1 in which the flap 6 prevents the depression of "figure" keys. If now the key 8 is depressed the angular tooth operates upon the upper edge of the flap 6 and the latter is caused to turn in a clockwise direction so that after such depression is completed the various parts occupy the position shown in Fig. 3 in which the flap 6 has been moved to release the levers bearing the projections 5 and block the levers bearing the projections 4.

To retain the flap 6 in the position to which it has been moved by operation of the carriage shift lever, there is provided a retaining device comprising a lever 10 pivoted at a point 11 and urged downwardly by means of a spring 12. This lever is provided at its free end with two recesses 14 and 15 which are adapted to engage with the edge of a lateral projection 13 provided on the flap 6. The sides of these depressions or recesses co-operate with the edge of the said lateral projection 13 in such a manner as to determine with exactitude the position in which the flap 6 is to be retained.

The parts being in the position shown in Fig. 3, if after figures have been transmitted it is desired to transmit letters the "letters" key 16 is depressed, the lever of which determines the code combination which corresponds to the shift from the position "figures and signs" to the position "letters," and which lever, through its

tooth 17 of angular form and oppositely arranged with regard to the tooth of the lever corresponding to the key 8, returns the flap 6 into the position of Fig. 1; thus freeing the letter keys and blocking the figure keys. It will also be noted that the mechanism is self-acting, since the flap 6 cannot be displaced if one or another of the keys 8 or 16 is depressed whilst any other key of the keyboard is down.

It will be understood that the arrangement of the various parts may be varied without departing from the spirit of the invention.

Having now particularly described and ascertained the nature of the invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a teleprinting or like apparatus having a keyboard with at least two key groups; shiftable blocking means positioned below said key groups, said key groups being provided with projections, the projections of one of said key groups being engageable with said blocking means when the latter is shifted into a predetermined position, the projections of the other of said key groups being engageable with said blocking means when the latter is shifted into another position, and means adjacent said key groups for shifting said blocking means selectively into either of said positions to impede movement of one of said key groups and to free the other of said key groups for operation.

2. In a teleprinting or like apparatus having a keyboard with at least two key groups; shiftable blocking means extending below and transversely of said key groups, one of said key groups being provided with projecting means, the other of said key groups being provided with projecting means positioned in a plane different from that of said projecting means of said one key group, said projecting means being adapted for engagement with said blocking means, and two selectively operable members, first and second, respectively, positioned adjacent said key groups and being coordinated with said key groups respectively, said first member including a portion engageable for actuation with said blocking means to shift the latter to a position for permitting operation of one of said key groups and for engagement with the projecting means of the other of said key groups to impede movement of said other key group, said second member including a portion engageable for actuation with said blocking means to shift the latter to a position for permitting operation of said other key group and for engagement with the projecting means of said one key group to impede movement of said one key group.

3. In a teleprinting or like apparatus having a keyboard with at least two key groups; swingably supported blocking means extending below and transversely of said key groups, projecting means for each of said key groups and arranged in two different planes, said projecting means being respectively engageable with said blocking means to block their respective key groups, and lever means facing said blocking means, each lever means being provided with a cam and being selectively operable for actuation of said blocking means, the cam of one of said lever means being adapted to engage with said blocking means upon actuation of said one lever means to swing said blocking means from a position in which one of said key groups is blocked to a position in which said latter key group is freed for operation and the other of said key groups is blocked, the cam of the

other of said lever means being adapted to engage with said blocking means upon actuation of said other lever means to swing said blocking means from a position in which the other of said key groups is blocked to a position in which said latter key group is freed for operation and the one of said key groups is blocked.

4. In a teleprinting or like apparatus having a keyboard with at least two key groups; blocking means extending transversely of said key groups, projections extending from said key groups, respectively, and being adapted for engagement with said blocking means to impede movement of the respective key groups, said blocking means including a first swingable bar provided with an extension, a second swingable bar engaging said first bar and resting on the extension thereof to hold said first bar in position, and key lever means, each key lever means being provided with a cam, said cams being engageable, respectively, with said first bar upon actuation of said respective key lever means to swing said first bar from a position engaging the projection of and blocking one of said key groups to a position engaging the projections of and blocking the other of said key groups and to free said one of said key groups for operation.

5. In a teleprinting or like apparatus having a keyboard with at least two key groups, each key group having respective aligned projections; blocking means swingable into respective positions opposite said projections and extending transversely of said key groups, and key lever means adjacent said key groups and adapted to selectively operate said blocking means, each key lever means being provided with a cam for engagement thereof with said blocking means to swing the latter from a position wherein the projections of one of said key groups engage said blocking means, to a position to free said one of said key groups for operation and to cause engagement between said blocking means and said projections of the other of said key groups for impeding movement thereof.

6. In a teleprinting or like apparatus having a keyboard with two key lever groups; blocking means extending transversely of said key lever groups, said blocking means including a bar arranged to rock about an axis into two positions, projections joined to the levers of the first key lever group and facing said bar when in one of its positions, projections on the levers of the second key lever group and facing said bar in another of its positions, a first member including a portion engageable with and actuating said blocking means to shift the latter to said one position for permitting operation of the second key group, and a second member including a portion engageable with and actuating said blocking means to shift the latter to the other position for permitting operation of the first key group.

7. In a teleprinting or like apparatus having a keyboard with two key lever groups, each key lever group being provided with respective aligned projections; a blocking member extending transversely of said projections and being swingable into two positions, and two key levers adapted to control the movement of said blocking member, each of said two key levers being provided with a cam for engagement with said blocking member to shift the same from one of said two positions in which the aligned projections of one of said two key lever groups engage said blocking member to the other of said positions to free said one key lever group for operation and to bring said

blocking member into engagement with said aligned projections of the other of said key lever groups for impeding movement thereof.

8. In a teleprinting or like apparatus having a keyboard with two key lever groups, each key lever group being provided with respective aligned projections; a blocking member extending transversely of said key lever groups and being swingable into two predetermined positions

for cooperation with the aligned projections of the respective key lever groups, a projection positioned on said member, two key levers each adapted to shift said member into one of its positions, and a swingable lever engaging said projection of said blocking member to maintain said member in each of its positions.

GINO MODIGLIANI.