

July 16, 1940.

W. THIELICKE

2,208,348

CHARACTER TRANSMITTING DEVICE

Filed Dec. 10, 1937

FIG. 1

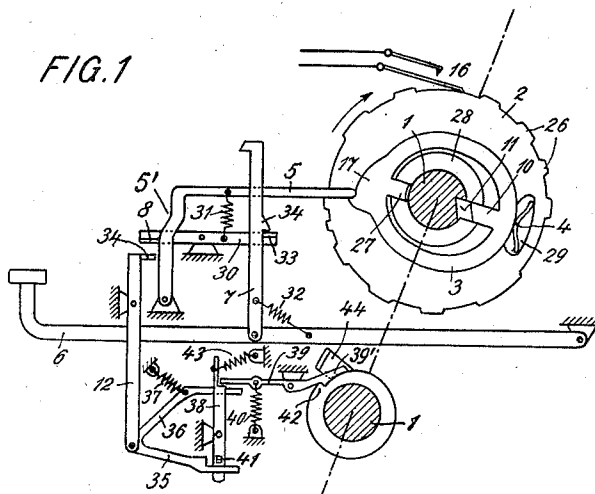
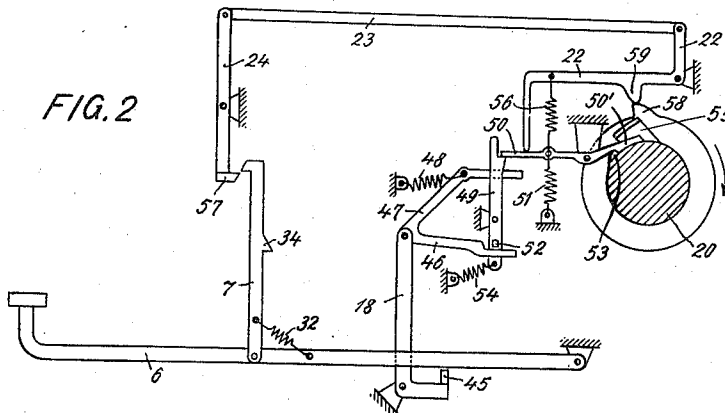


FIG. 2



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UNITED STATES PATENT OFFICE

2,208,348

CHARACTER TRANSMITTING DEVICE

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Application December 10, 1937, Serial No. 179,126
In Germany December 22, 1936

4 Claims. (Cl. 178—83)

The invention relates to the electric transmission of characters composed of a number of image points or current impulses. More particularly the invention is concerned with transmission devices of the kind having key levers each of which when operated causes such number or combination of individual signals to be produced and transmitted, and it consists in certain features of novelty which will appear from the following description and be particularly pointed out in the appended claims, reference being had to the accompanying drawing in which

Fig. 1 is a partially diagrammatic and partially sectioned elevation of part of an embodiment of the invention, Fig. 2 is an elevation of an assembly that constitutes another part thereof.

Each signal or character to be transmitted is represented by circumferential cam portions 26 of a disc 2, which are successively to operate a contact 16, thus causing impulses to be produced and transmitted in accordance with the length of the cam portions. For simplicity only one of such discs 2 is shown. Disc 2 is fixedly mounted on a driving shaft 1 and carries a ring-shaped slide 3 fitted with a cam 17 and two projections 10, 27. The slide 3 is of a somewhat oval form and is arranged to encircle a hub 28 of the disc 2. This hub serves to support and guide the slide 3, the projections 10, 27 thereof being located in grooves formed in the hub. Projection 10 is intended to enter a longitudinal groove 11 provided in the shaft 1. In a recess or cavity 29 of the disc 2 a spring 4 is disposed that acts to press the slide 3 against a lever 5 and thereby to press this lever against a lug 8 of a two-armed lever 30. The levers 5, 30 are interconnected by a spring 31. To each disc 2 a key lever 6 is allotted by the intermediary of an arm 7 carried by lever 6 and pivotally connected therewith. A spring 32 acts to hold arm 7 in engagement with a lug 33 of the lever 30, arm 7 being formed with a tappet 34 to engage this lug.

To the arrangement as thus far described a bar 34 is common that extends along the row of levers 6 and is carried on a two-armed lever 12, pivoted to a push arm 35 and an arm 36 formed integral therewith. The arms 35, 36 are under the action of a spring 37. A two-armed lever 38 is to sustain a two-armed lever 39 against the action of a spring 40 and has a stud 41 for the arm 35 to strike against. Lever 39 is formed with a pawl 39' for cooperation with a ratchet tooth 42 of shaft 1. A spring 43 tends to hold

lever 38 in engagement with the lever 39 and hereby to hold pawl 39' in engagement with the ratchet tooth 42, thus locking the shaft 1 against rotation. Shaft 1 may be provided with a cam 44 adapted to restore the pawl 39' to normal when this is out of engagement with tooth 42.

To all the key levers 6, of which only one is shown, also a bar 45, Fig. 2, is common which is carried by a lever 18 pivoted to a push arm 46 and an arm 47 formed integral therewith. The arms 46, 47 are under the action of a spring 48. A two-armed lever 49 is to sustain a two-armed lever 50 against the action of a spring 51 and has a stud 52 for the arm 46 to strike against. Lever 50 is formed with a pawl 50' for cooperation with a ratchet tooth 53 of a shaft 20. A spring 54 tends to hold lever 49 in engagement with the lever 50 and hereby to hold pawl 50' in engagement with the ratchet tooth 53, thus locking the shaft 20 against rotation. Shaft 20 has a cam 55 adapted to restore the pawl 50' to normal when this is out of engagement with tooth 53. Lever 50 is attached to an angular lever 22 by a spring 56. Lever 22 is jointedly connected with a two-armed lever 24 by a rod 23. Lever 24 carries a bar 57 that extends along the upper or free ends of the arms 7. The arms 7 are hooked at these ends in order to be engaged by the bar 57. Shaft 20 may be provided with a cam 58 intended to cooperate with a cam 59 of lever 22.

When key lever 6 is depressed the lever 7 too is moved downward. As a result, that arm of the lever 30 which has the lug 33 is lowered by tappet 34 acting upon this lug, while the lever arm fitted with lug 8 is raised to face a curvature 5' of lever 5. Consequently spring 4 becomes effective, shifting slide 3 and lever 5 toward the lug 8 until lever 5 comes against this lug. In this way the projection 10 of slide 3 is caused to enter the groove 11, whereby disc 2 is clutched to the shaft 1, projection 10 bearing against hub 28. Immediately thereafter the pawl 39' is lifted out of engagement with tooth 42, thus allowing shaft 1 and disc 2 clutched thereto to revolve in the direction of the arrow and to operate contact 16 in accordance with the cam portions 26. To such end the lever 5 when moved toward the raised lug 8, as described, is acting on the leverage 12, 35, 36, 38, 39 by means of bar 34. Lever 12 causes the arm 35 to come against stud 41, whereby lever 38 is turned to release lever 39. Arm 36 serves to support the released lever 39. Spring 40 now acts to lift the pawl 39' out of engagement with tooth 42. When

shaft 1 is finishing one revolution, cam 44 will restore the pawl 39' into the locking position shown in Fig. 1. At the same time cam 17 bearing against lever 5 acts to restore the system into the normal state represented in the drawing, spring 4 thus getting tensioned afresh, while projection 10 is moved out of engagement with groove 11. The levers 7, 8 reassume their position of rest immediately after lever 6 is relieved of the pressure by which it has been depressed.

When depressing the lever 6 also the leverage 18, 46, 47, 49, 50, Fig. 2, is operated by lever 6 depressing the bar 45. This operation is the same as that described with reference to the leverage 12, 35, 36, 38, 39, Fig. 1, and thus causes the pawl 50' to be lifted out of engagement with the ratchet tooth 53. As a result, shaft 20 is allowed to rotate while at the same time the leverage 22, 23, 24 by means of the bar 57 acts to engage the hooked ends of all the arms 7 except the one that has been depressed. It will thus be impossible after actuating one of the key levers 6 immediately to actuate another. When shaft 1 is finishing one revolution, cam 55 acts to restore the pawl 50' into the position shown, thus locking this shaft against further rotation. Lever 50 bearing against the lever 22 causes the leverage 22, 23, 24, 57 to reassume the state represented in Fig. 2, the arms 7 thus becoming free of the bar 57 so that now any key lever 6 can be depressed. The arrangement is such that at this moment the rotating disc 2 shall have turned only through a small part of one revolution. A second lever 6 may then be actuated, since the appertaining slide 3, that is, the slide that belongs to such second key lever and the respective disc 2, cannot engage the groove 11 until shaft 1 has made a complete revolution.

On depressing this second lever 6 all the other levers 6 are locked in the manner just described. The arrangement thus allows of emitting any desired number of characters or combination signals one after another and in immediate succession, each transmission entailing in a sense another kept ready by the manipulation of one of the key levers. The whole of the discs 2 thus constitutes a sort of rotary storage device.

Means may be provided whereby after the emission of one character further emission is stopped for some time in order that in the case of a key being depressed too long yet the appertaining character shall be emitted only once.

The invention is adapted for use with any teleprinting methods carried out with the aid of a sending keyboard of the kind usual in typewriters.

What is claimed is:

1. A character transmitting device comprising a driving shaft, a number of rotary storage members each representing a definite character, means for clutching each of these storage members to said shaft, an assembly of key levers, each thereof being allocated to one of the said storage members, means under control of these key levers for rendering the said clutching means effective, means under control of a depressed key for rendering any one of such clutching means ineffective while rendering another clutching means effective, and means for rendering any of such ineffective clutching means effective immediately after the termination of the preceding clutching action.

2. A device according to claim 1, having a locking device under control of any one of the key levers and adapted to lock these, except any one thereof that has been operated, during part of one revolution of the driving shaft.

3. A device according to claim 1, having a locking device under control of any one of the key levers and adapted to lock these, except any one thereof that has been operated, such locking device comprising a bar adapted to engage the key levers, a leverage under control of any one of the key levers and joined to this bar, and a cam shaft adapted to control said leverage during part of one revolution of the driving shaft.

4. A device according to claim 1, having a locking device adapted to act upon the driving shaft and means, under control of any one of the key levers, for controlling this locking device.

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