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TELEGRAPH TRANSMITTER

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FIG. 1.

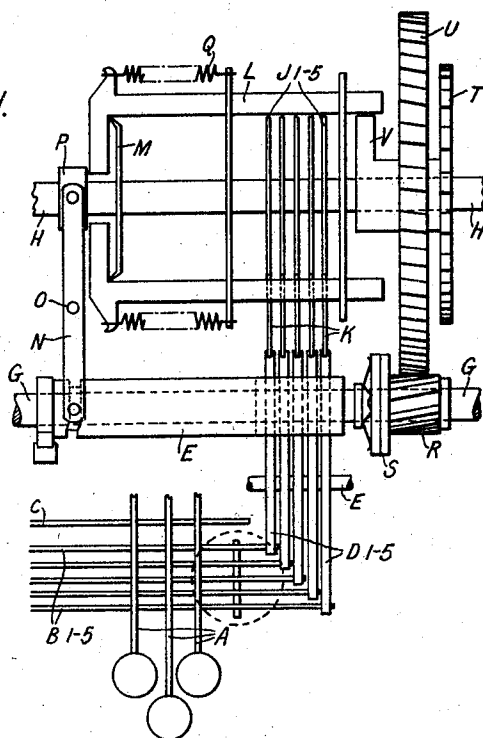
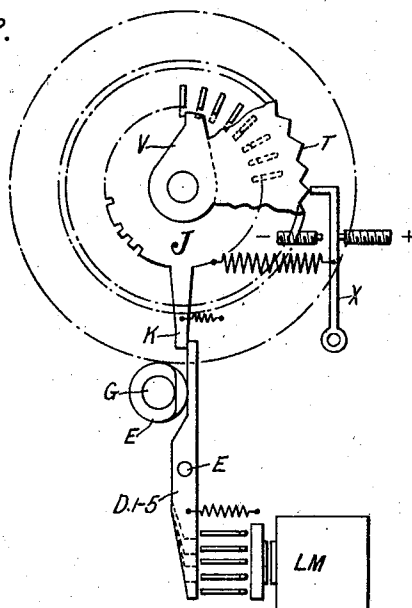


FIG. 2.



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TELEGRAPH TRANSMITTER

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This invention relates to keyboard transmitters for telegraph systems employing a rotatable type wheel at the receiving station.

The printing apparatus at the receiving station in a stock ticker system for example is usually arranged so that the type wheel is normally held stationary by means of an escapement wheel under the control of a polarized line relay. The escapement wheel carries teeth equal in number to the characters on the type wheel. For each complete reversal transmitted by the distant transmitter the polarized line relay is actuated first to one side and then back again, releasing one tooth of the escapement wheel and so allowing the type wheel to rotate a distance equal to that of one character. In series with the polarized relay is a slow acting non-polarized relay which is not sensitive to the reversals of signalling frequency, but operates on a steady direct current to actuate printing mechanism. At the transmitting station a commutator is provided having double the number of segments of the characters on the type wheel, alternate segments being connected to positive and negative battery and a brush connected to the line is arranged to sweep over and to be held on any one segment according to the character that is required to be printed, the brush normally resting on the segment corresponding to the character last selected. The key levers are arranged to control a series of stops arranged around the commutator. Each key when depressed releases the commutator brush from its previous position and allows the brush to rotate until arrested by a stop corresponding to the key depressed.

It will thus be seen that a train of reversals corresponding in number to the characters on the type wheel between the one last printed and the one required is sent at each depression of a key, followed by a steady current interval. The arrangements to control the rotation of the commutator brush from the keyboard in such transmitters may be electrical or mechanical, but a common characteristic feature of such methods is that means individual to each key is employed to connect the key to the commutator controlling means.

Such methods in general are cumbersome and expensive.

According to the present invention a telegraph transmitter comprises, a rotatable member, a plurality of members each corresponding to a particular position thereof, a corresponding plurality of keys, combination members less in number than said plurality of keys and actuated in varying combinations to select one of said plurality of members, and means actuated by said rotatable member for sending a signal in accordance with the particular key depressed.

The method involved has the great advantage that it permits a form of construction utilizing permutation bars, combination discs and selector bars which are standard parts for printing telegraphs operating on the start stop principle.

Another advantage shown in the present arrangements is that a source of mechanical power being already necessary in such transmitters to effect rotation of the rotatable member, the same source may be utilized to effect the actual movement of the stops under the control of the key levers. This relayed action has a certain value in maintaining the touch of the key levers as light as possible.

The accompanying drawings Figures 1 and 2 represent diagrammatically such an arrangement according to the present invention. Many of the details referred to are shown and explained at greater length in the specifications above referred to, so that it is not considered necessary to repeat them here. All the elements incorporated in the present invention will be readily comprehended by those conversant with the art and only the new combination of these elements for the purpose outlined above will be given.

Key levers A are set above and at right angles to five notched combination bars B1—5 and a universal bar C in the usual manner. The five combination bars B1—5 are adapted to be actuated in varying combinations on depression of a key lever. Each actuated bar moves to the right whereby its end intercepts the movement of one of a series of selector bars D1—5 which are loosely pivoted on the common pivot E. The opposite ends of these

selector bars D1—5 press under the tension of springs on the cam surface of a sleeve E situated above such selector bars. Sleeve E is rotatably mounted on a shaft G which is maintained in continuous rotation by a motor or other source of mechanical power (not shown) and is clutched to the shaft G for one revolution only at each depression of a key lever A by the actuation of the universal bar C. A second but stationary shaft H carries five independently rotatable notched combination discs J1—5, each disc having an arm K fixed thereto which engages with the extremity of one of the selector bars D1—5. Arranged around the notched combination discs J1—5 is a series of spring actuated latches L, each pivoted on disc M and moving in radial slots in suitably arranged fixed discs, each individual latch L corresponding to one of the key levers A. A cam groove in the sleeve E actuates a lever N pivoted at O which slides a bush P on shaft H thereby raising the arms of all the latches L or letting them rest under the tension of individual springs Q on the notched combination discs J1—5. On the motor driven shaft G is a pinion R driven from shaft G through a yielding friction clutch S. Pinion R meshes with spur wheel U which is rotatably mounted on the fixed shaft H and carries an arm V which revolves clear of the latches L but is arrested by any latch which has been permitted to fall into aligned notches of the combination discs J1—5. A disc T having a series of V shaped notches equal in number to the latches L, is also fixed so as to rotate with spur wheel U and arm V. A spring pressed movable contact arm X is adapted to be oscillated between positive and negative contact screws by the cam notches in the disc whereby one complete reversal is sent to line for each angular space traversed by arm V corresponding to the separation of adjacent latches L.

The operation is as follows:—When a key lever A is depressed certain of the combination bars B1—5 are moved longitudinally and intercept the movement of their corresponding selector bars D1—5. The universal bar C causes sleeve E to be clutched to shaft G for one revolution only. During this revolution lever N first actuates bush H and raises all the latches L from the notched combination discs J1—5. Cam sleeve E then permits all of the selector bars D1—5 simultaneously to rock on pivot E under the tension of their springs. The movement of certain of these bars will be intercepted by the extremity of the combination bars B1—5 as above mentioned so that no appreciable movement will be communicated to their corresponding discs J1—5, but those bars D1—5 not intercepted will now rotate their associated discs J1—5 by arms K through a certain angle. This aligns the notches in all of the discs

for one latch L only which is then permitted by the retraction of bush P to fall into a position to arrest arm V. Selector bars D1—5 are then returned to normal and sleeve E comes to rest. The combination discs J1—5 which have been actuated are held against spring tension by the latch L and pinion R continues to drive spur wheel V, thus sending reversals corresponding in number to the latches L traversed by arm V until arm V is rearrested in the new position. A locking magnet LM in the circuit of contact arm X is adapted to actuate on the direct current which is sent to line during a pause between trains of reversals, thereby unlocking the combination bars B1—5 and permitting a fresh combination to be set up. The magnet releases however during a train of reversals and locks the combination bars.

The actual details of construction and the arrangement of parts may be variously modified in stock ticker and like telegraphic transmitters employing a method of control of a commutator from a keyboard through a small number of intermediate levers actuated in varying combinations. The arrangements as described have the additional advantage of utilizing parts which are also employed in the construction of the telegraphic apparatus shown in the two above mentioned specifications but it will be understood that the invention as shown by the following claims is not limited to this one particular arrangement.

What is claimed is:

1. A telegraph transmitter comprising a rotatable member, a plurality of members each corresponding to a particular position thereof, a corresponding plurality of keys, combination members less in number than said plurality of keys and actuated in varying combinations to select one of said plurality of members, and means actuated by said rotatable member for sending a signal in accordance with the particular key depressed.

2. A telegraph transmitter comprising a plurality of key levers, a series of combination bars actuated in accordance with a particular key depressed, a corresponding series of combination discs actuated therefrom, a plurality of movable members of which one is selected according to the setting of said combination discs, and a rotatable member cooperating therewith to send a corresponding signal.

3. A telegraph transmitter comprising a plurality of key levers, a series of combination bars actuated in accordance with a particular key depressed, a corresponding series of combination discs actuated therefrom, a plurality of movable stop members of which one is selected according to the setting of said combination discs, and a rotatable member controlled thereby to send a series of impulses

or reversals in accordance with the number of stop members traversed.

4. In a telegraph transmitter the combination comprising a rotatable member, a plurality of members each corresponding to a particular position thereof, a corresponding plurality of keys, a series of combination bars less in number than said plurality of keys, a corresponding series of combination discs and to select one of said members a series of intermediate levers mechanically actuated on depression of one of said keys to set said discs in accordance with the setting of said bars.

5. In a telegraph transmitter the combination comprising a rotatable member, a plurality of members each corresponding to a particular position thereof, a corresponding plurality of keys, a series of combination bars, less in number than said plurality of keys, a corresponding series of combination discs, levers intermediate said bars and said discs, a cam sleeve clutched to a rotating shaft for 1 revolution on each depression of a key to release said intermediate levers for setting said discs in accordance with the setting of said bars, and means also controlled by said cam sleeve for replacing any one of said members previously selected.

6. A telegraph transmitter comprising a plurality of key levers, a series of combination bars, a corresponding series of combination discs, a plurality of movable members of which one is selected according to the setting of said discs, levers intermediate said bars and said discs, a driving shaft, a cam sleeve clutched thereto for 1 revolution on each depression of a key to raise a previously selected one of said movable members and to release said intermediate levers for setting said discs in accordance with the setting of said bars, a pinion yieldingly driven from said driving shaft, a spur wheel meshing with said pinion and carrying a stop which engages with a selected member and contact means operated thereby to transmit a series of impulses or reversals in accordance with the number of stop members traversed.

7. In a telegraph transmitter a plurality of key levers, a series of combination bars actuated therefrom, a corresponding series of combination discs, a cam sleeve clutched to a driving shaft for 1 revolution on depression of a key, and a series of intermediate levers released on rotation of said cam sleeve to bear under spring tension against said bars and said discs at opposite extremities under spring tension so that those levers not intercepted by its combination bar actuates its corresponding combination disc.

8. A telegraph transmitter comprising a plurality of key levers, a series of combination bars actuated in accordance with a particular key depressed, a corresponding series of combination discs actuated therefrom, a plurality of movable members of which one

is selected according to the setting of said combination discs, a rotatable member co-operating therewith to send a corresponding signal, and means for locking said combination bars against movement during the transmission of said signal.

9. A telegraph transmitter comprising a plurality of key levers, a series of combination bars actuated in accordance with a particular key depressed, a corresponding series of combination discs actuated therefrom, a plurality of movable stop members of which one is set according to the setting of said combination discs, a rotatable member controlled thereby to send a series of impulses or reversals in accordance with the number of stop members traversed, and a magnet de-energized during said impulses or reversals to lock said combination bars against movement.

10. A telegraph transmitter comprising a plurality of key levers, a series of combination bars, a corresponding series of combination discs, a plurality of movable members of which one is selected according to the setting of said discs, levers intermediate said bars and said discs, a driving shaft a cam sleeve clutched thereto for 1 revolution on each depression of a key to raise a previously selected one of said movable members and to release said intermediate levers for setting said discs in accordance with the setting of said bars, a pinion yieldingly driven from said driving shaft, a spur wheel meshing with said pinion and carrying a stop which engages with a selected member, contact means operated thereby to transmit a series of impulses or reversals in accordance with the number of stop members traversed and a magnet de-energized during said reversals to lock said combination bars against movement.

In witness whereof I hereunto subscribe my name this twelfth day of September, 1930.

REGINALD DENNIS SALMON.