

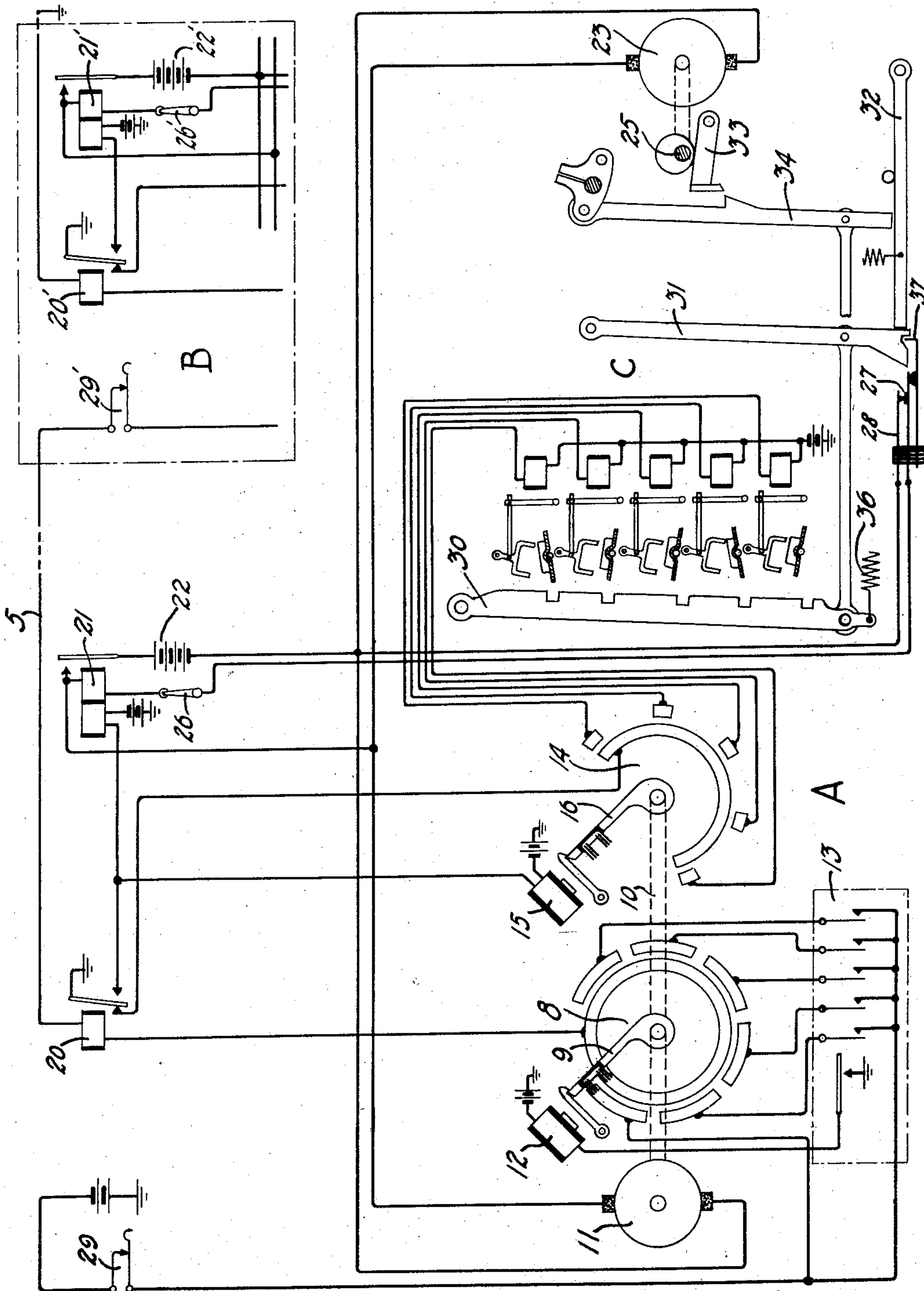
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E. F. WATSON

PRINTING TELEGRAPH SYSTEM

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Inventor:
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by *g. v. folk* Att'y.

UNITED STATES PATENT OFFICE.

EDWARD F. WATSON, OF YONKERS, NEW YORK, ASSIGNOR TO AMERICAN TELEPHONE AND TELEGRAPH COMPANY, A CORPORATION OF NEW YORK.

PRINTING-TELEGRAPH SYSTEM.

Application filed October 17, 1922. Serial No. 595,122.

To all whom it may concern:

Be it known that I, EDWARD F. WATSON, residing at Yonkers, in the county of Westchester and State of New York, have
5 invented certain Improvements in Printing-Telegraph Systems, of which the following is a specification.

This invention relates to a control system.

10 An object of the invention is the provision of means for automatically starting and stopping the driving motors of automatic machines, such as printing telegraph receivers, automatic transmitters, and the
15 like.

The invention, according to the above and other objects, comprises a plurality of stations interconnected by a transmission line and having at each station a motor driven
20 instrument, such as a printing telegraph receiver, or the like, each of the motors being controlled by electro-responsive means which are provided for automatically closing the motor circuits, such circuits being
25 maintained closed until subsequently opened by manual or selectively operated mechanisms.

One embodiment of the invention is illustrated in the drawing.

30 Each of the stations A and B, connected by the line conductor 5, is equipped with complete transmitting and receiving mechanisms. For the sake of simplifying the drawing the transmitting and receiving
35 equipment at only one station has been shown.

The transmitting equipment comprises a transmitting distributor 8 which has a brush arm 9 frictionally mounted on a shaft 10
40 driven by a motor 11 and which is arranged to be stopped periodically by a release magnet 12. The brush arm 9 is provided with a brush for consecutively bridging a plurality of segments with a continuous ring,
45 the segments being connected with the contacts of a transmitter 13 which may be either of the automatic or manual type. The receiving mechanism comprises a receiving distributor 14 which, like the transmitting
50 distributor 8, is provided with a release magnet 15 for periodically arresting the rotation of a brush arm 16 also frictionally mounted on the shaft 10. The segments of the distributor 14 are connected with the

selecting magnets of a receiving printer C. 55 Only so much of the printer is shown as is necessary for a clear understanding of the invention. For a complete description of the printer, reference should be had to the application of Harry Pfannenstiehl, Serial
60 No. 397,903, filed July 21, 1920.

Each of the stations is provided with a line relay 20 which controls, through its front contact, the energization of the selecting magnets of the printer C, upon the pas-
65 sage of the brush carried by the brush arm 16 over the segments to which the selecting magnets are connected. Relay 20 through its back contact controls the release magnet 15 of the receiving distributor 14 and a
70 power control relay 21. This power control relay 21 upon being energized establishes a locking circuit for itself through its armature, contact, right hand winding, switch 26 and contacts 27 and 28 which form a part
75 of the printing mechanism whereby it is maintained energized independently of relay 20. Upon the energization of relay 21 a circuit is also established including the source of power with the windings of driv-
80 ing motors 11 and 23, the former being associated with the distributing mechanisms 8 and 14 while the latter is associated with the printer and serves to drive a cam shaft 25 as is described in detail in the previously
85 referred to application. The operating circuit of the motors 11 and 23 may be traced from the positive pole of battery 22, armature and contact of relay 21, and the wind-
90 ings of the motors 11 and 23 in parallel to the negative pole of the battery 22. The operating circuit of the motors 11 and 23 being completed, these motors respond for driving their associated mechanisms.

When it is desired to cause the operation 95 of the motors 11 and 23 a key 29, which is located at each of the stations, is operated whereby an impulse is transmitted over the line conductor 5 for causing the deenergization of the line relays 20 at each of the
100 stations. These relays respond to the operation of the key 29 for closing their back contacts and consequently causing the energization of the power control relays 21. Relays 21, upon being energized close the
105 operating circuit for motors 11 and 23. With the operating circuit of the motors closed the transmitting and receiving

mechanisms may be operated for the transmission and reception of messages as is well understood by those skilled in the art.

When it is desired to stop the motors 11 and 23 it is necessary either to operate contacts 27 and 28 by the transmission of a special group of impulses from the transmitting station or for the operator at the distant station to actuate key 26. In order to operate contacts 27 and 28, it is necessary that the printing platen (not shown) be in the shifted position. When the pull bar 34 is moved downwardly by the action of the reciprocating striking bar 33, the extension member 32 moves out of the path of bar 31. Thus, when the code bar 30 is selected, the bar 31 is moved to the right by the action of spring 36 whereupon member 37 forming a part of the contacts 27 and 28 is operated and separates these contacts. Contacts 27 and 28 being opened, the locking circuit of the power control relay 21 is opened, whereupon the operating circuits of the motors 11 and 23 are also opened. When it is desired to stop the motors manually it is necessary to open key 26 which accomplishes the same function as the opening of contacts 27 and 28, that is, the locking circuit of the power control relay 21 is opened for causing the disconnection of the battery 22 from the operating windings of the motors 11 and 23.

Although the invention has been illustrated as applied to a particular type of system, it is, of course, obvious that variations may be made without departing from the spirit and scope of the present invention.

What is claimed is:

1. In combination, a line connecting a plurality of stations, recording means associated with said line including shifting mechanism and a motor, a circuit for said motor, normally closed contacts included in said motor circuit, means responsive to impulses from a distant station for closing said motor circuit, and selectively operated means controlled from a distant station for operating said shifting mechanism to permit the opening of said normally closed contacts to thereby open the motor circuit.

2. A control system comprising a line connecting a plurality of stations, recording apparatus located at each of the stations and operative over said line, an electric motor for continuously supplying motive power to said recording apparatus, an operating circuit for said motor, and means responsive to a predetermined alteration of the normal conditions of said line for controlling the closure and opening of said operating circuit.

3. In combination, an electric motor, an operating circuit therefor, a relay responsive to predetermined conditions for closing said operating circuit, a locking circuit for said

relay established upon the energization thereof for maintaining said relay energized, and means selectively operated for opening said locking circuit to open the operating circuit of said motor.

4. In combination, a line connecting a plurality of stations, printing telegraph receiving mechanism at each of said stations including an operating motor, a circuit for said motor, a relay connected in said line at each of the stations, and means responsive to the operation of said line relay for closing said circuit and maintaining it closed during the period of operation of said printing telegraph receiving mechanism.

5. In combination, a line connecting a plurality of stations, recording mechanism at each of said stations including an operating motor for supplying unidirectional motive power to said recording mechanism, a circuit for said motor, a relay connected in said line at each of the stations, a relay responsive to the deenergization of said line relay for closing said circuit, and locking means for said last-mentioned relay effective upon its energizing for maintaining the circuit of said motor closed.

6. In combination, a line connecting a plurality of stations, recording mechanism at each of said stations including a motor, a circuit for said motor, a relay connected in the line at each of the stations, a relay responsive to the deenergization of said line relay for closing said motor circuit, a locking circuit for said last mentioned relay established upon its energization for maintaining the circuit of said motor closed, and selectively operated means for opening said locking circuit whereby said motor circuit is likewise opened.

7. In combination, a unidirectional electric rotating motor, an operating circuit therefor, a relay responsive to predetermined conditions for closing said operating circuit, a locking circuit for said relay established upon the energization thereof for maintaining said relay energized, and means for opening said locking circuit to open the operating circuit of said motor.

8. In combination, a line connecting a plurality of stations, a receiving printer associated with said line including type carrying means and a motor, a circuit for said motor, contacts included in said motor circuit, means responsive to impulses from a distant station for closing said motor circuit, and means operated independently of said type carrying means for opening said motor circuit.

9. In combination, a line connecting a plurality of stations, recording means including shifting mechanism and a motor, a circuit for said motor, contacts included in said motor circuit and controlled by said shifting mechanism, means at a distant station

responsive to an impulse from the other station for controlling the closure of said motor circuit, and selectively operated means for operating said shifting mechanism to
5 permit the opening of said motor circuit.

10. In combination, a line connecting a plurality of stations, recording means including shifting mechanism and a motor, a
10 circuit for said motor, contacts included in said motor circuit and controlled by said

shifting mechanism, means operated in response to a shift signal for operating said shifting mechanism, and further means operated following the operation of said shifting mechanism for operating said contacts. 15

In testimony whereof, I have signed my name to this specification this 16th day of October, 1922.

EDWARD F. WATSON.