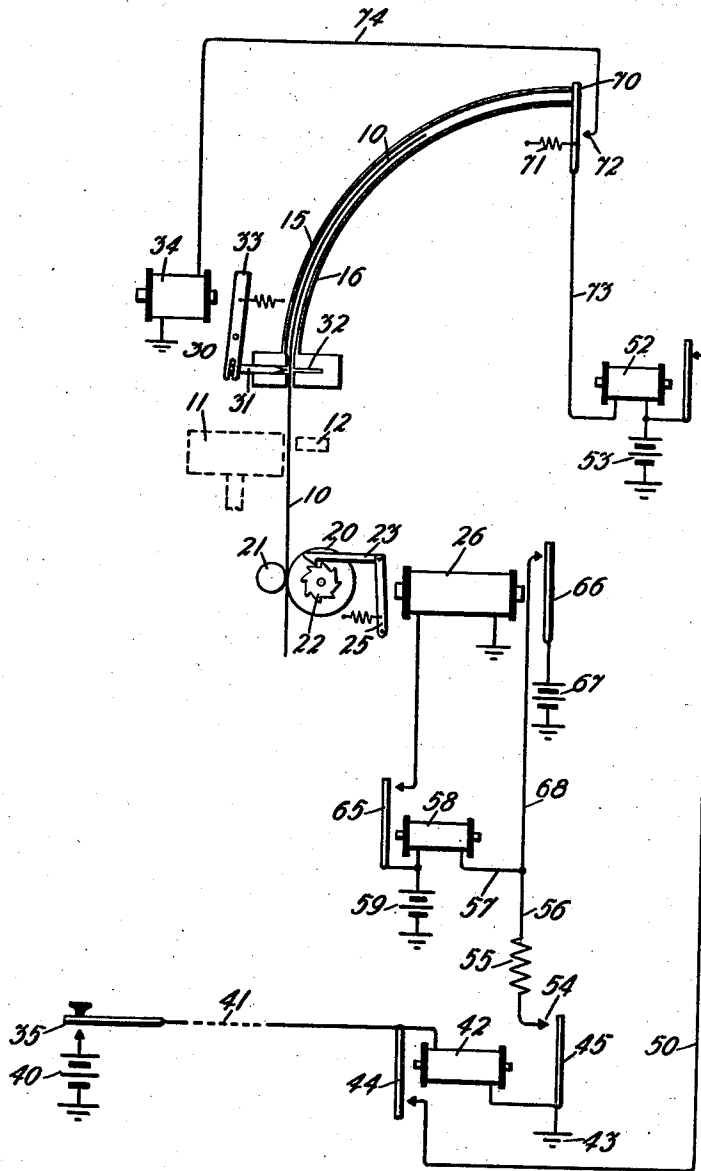


A. F. DIXON.
PAPER FEED CONTROLLING SYSTEM.
APPLICATION FILED MAR. 19, 1914.

1,161,850.

Patented Nov. 30, 1915.



Witnesses:
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UNITED STATES PATENT OFFICE.

AMOS F. DIXON, OF NEWARK, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, OF NEW YORK, N. Y., A CORPORATION OF ILLINOIS.

PAPER-FEED-CONTROLLING SYSTEM.

1,161,850.

Specification of Letters Patent.

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Application filed March 19, 1914. Serial No. 825,825.

To all whom it may concern:

Be it known that I, AMOS F. DIXON, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Paper-Feed-Controlling Systems, of which the following is a full, clear, concise, and exact description.

10 This invention relates to paper feed controlling systems and is particularly adapted for use in page printing telegraph systems, although obviously not exclusively limited to such use.

15 One of the objects of this invention is to provide an automatic paper feeding and measuring device wherein it is unnecessary to employ perforated or otherwise previously prepared sheets of paper to effect the control.

20 Another object is to provide means whereby message blanks may be automatically prepared from a continuous sheet of paper without the employment of tear lines therein.

25 To the above ends, an automatic paper feeding device is provided in combination with means, influenced by the margin of the paper, for effecting control over the feeding operation and shearing means for automatically severing the sheet of paper into separate message blanks.

30 The above and other objects of this invention will be fully set forth in the following description and claims, and will be more readily understood by reference to the accompanying drawing, in which the system of connections and the apparatus are shown diagrammatically.

35 A continuous sheet of paper 10, on which the messages are to be printed, passes upward between a type wheel 11 and a printing platen 12 of any suitable construction. The paper after being printed upon passes 40 into a suitable guide-way formed by curved walls 15 and 16, the upward movement being effected by a feed roller 20 and a pressure roller 21. Feed roller 20 is provided with a ratchet 22, the teeth of which are 45 adapted to be engaged by a pawl 23. Pawl 23 is pivotally carried by a spring-tensioned armature 25 of a feed magnet 26. Preferably, feed magnet 26, through the agency of armature 25, pawl 23, ratchet 22 and 50 wheels 20 and 21, may be used for the line-

to-line feed required by the printer in addition to the message blank feed, to be presently described.

In order to separate each message blank from the remaining sheet of paper, the 60 sheet 10 upon entering between walls 15 and 16 passes a paper shearing device 30. This device comprises a knife 31, die block 32, actuating armature lever 33 and shearing magnet 34. When a message has been 65 printed by the type wheel 11 and printing platen 12, any suitable apparatus or circuit arrangement may be utilized to effect the momentary closing of contacts 35. This completes a circuit from grounded battery 70 40, contacts 35, conductor 41 and feed control relay 42 to ground 43. Feed control relay 42 thereupon attracts both its armatures 44 and 45. Armature 44 completes a holding circuit for relay 42 from ground 43 by 75 way of conductor 50 and back contact and armature of clear-out relay 52 to grounded battery 53. Armature 45 completes a circuit from ground 43, armature 45, front contact 54, resistance 55, conductors 56 and 57, in- 80 terrupting relay 58 to grounded battery 59. Interrupting relay 58 attracts its armature 65 providing an energizing circuit for the feed magnet 26 from grounded battery 59. Feed magnet 26 now becomes active pulling 85 up both its armatures 25 and 66. Armature 25, as previously explained, causes the advancement of the paper sheet 10. Armature 66 completes a shunt about interrupting relay 58 by means of conductor 68, front contact and armature 66 and battery 67. Inter- 90 rupting relay 58 thereupon becomes deenergized, releases its armature 65 and consequently opens the energizing circuit for feed magnet 26. Armature 25 thereof is returned 95 by its spring ready to engage the next tooth of ratchet 22 while armature 66, returning, removes the shunt from around interrupting relay 58, which thereupon again becomes energized and the cycle of operations just 100 outlined is reproduced. The paper 10 continues to be automatically fed step-by-step up between the walls 15 and 16 until the proper length of a message blank is reached, when the advance edge thereof engages a 105 contact lever 70 moving it against the tension of its spring 71 into engagement with a contact 72.

The engagement of contacts 70 and 72 closes an energizing circuit from grounded 110

battery 53, clear-out relay 52, conductor 73, contacts 70 and 72 conductor 74, and shearing magnet 34 to ground. Shearing magnet 34 attracts its lever armature 33 and forces the knife 31 through the paper 10, into the die block 32, severing the prepared message from the remaining sheet. The energization of clear-out relay 52 opens the previously traced holding circuit for the control relay 42 and with the removal of the prepared blank to allow the disengagement of contacts 70 and 72, all of the apparatus is again at normal.

What is claimed is:

15 1. A paper feed controlling system comprising feeding mechanism, an automatically acting electromechanical system for operating said mechanism, means to initiate the action of said system, and means controlled by the advancing edge of the paper for influencing said system to stop the feeding action.

20 2. A paper feed controlling system comprising electromagnetic means for feeding a sheet of paper step-by-step, an interrupter relay cooperating with said electromagnetic

means to establish automatic feeding action, means for initiating the feeding action, contacts adapted to be controlled by the advancing edge of a sheet of paper, and means controlled thereby for stopping the feeding action. 30

3. A paper feed controlling system comprising electromagnetic means for feeding a sheet of paper step-by-step, electromagnetic paper shearing means, an interrupter relay cooperating with said feeding means to establish and maintain automatic feeding action, means for initiating the feeding action, contacts adapted to be controlled by the edge of a sheet of paper, means controlled thereby for arresting said feeding action, and means also controlled thereby for causing the action of said shearing means. 45

In witness whereof, I hereunto subscribe my name this 17th day of March A. D., 1914.

AMOS F. DIXON.

Witnesses:

E. EDLER,

NANON E. LUTHITT.