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TELEGRAPH RECORDING AND PROJECTING SYSTEM

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2 Sheets-Sheet 2

FIG. 4

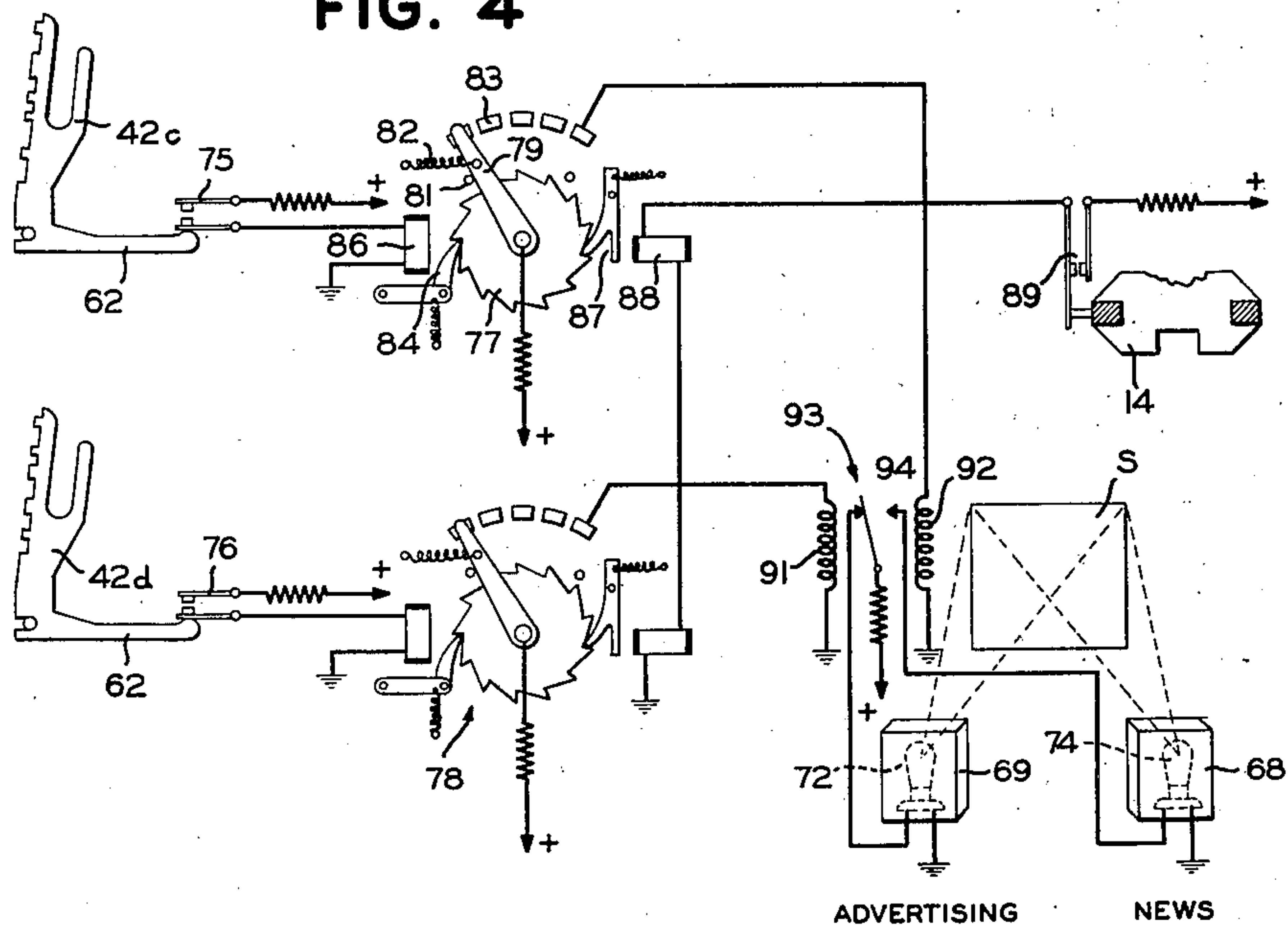


FIG. 3

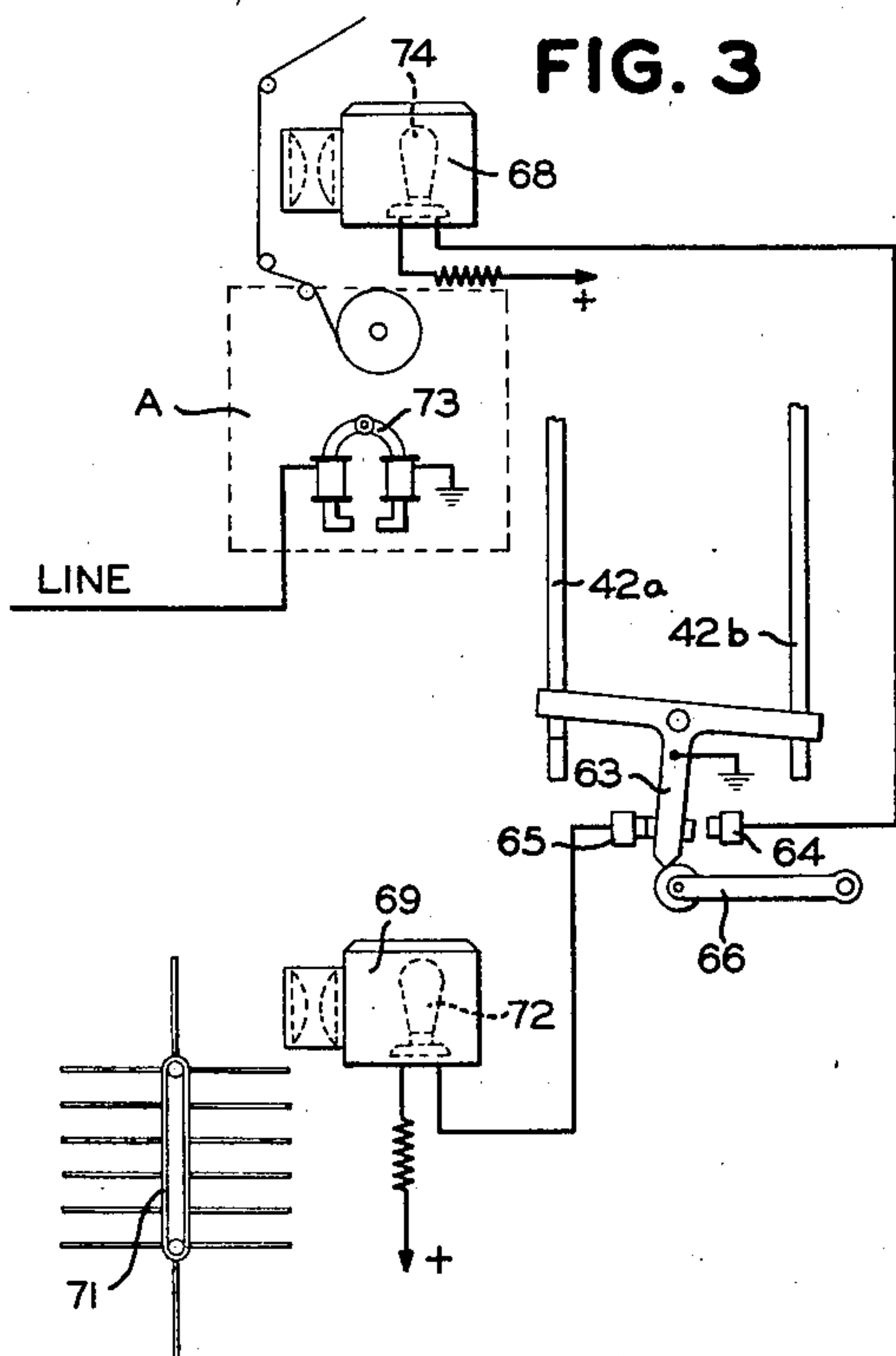
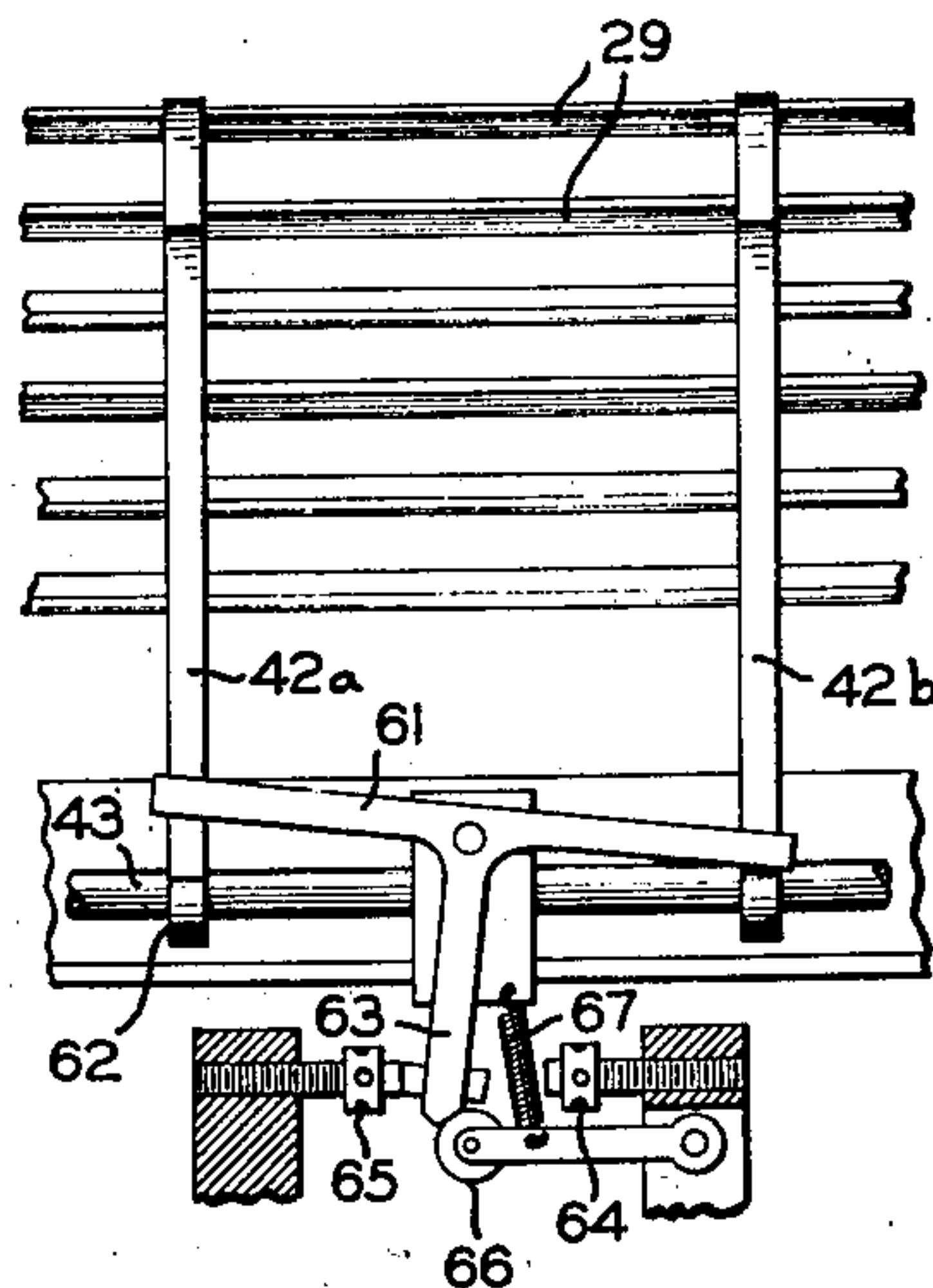


FIG. 2



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TELEGRAPH RECORDING AND PROJECTING
SYSTEM

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18 Claims. (Cl. 88—24)

This invention relates to a telegraph recording and projecting system, and particularly to the remote control of two or more projectors, at least one of which has a telegraph recorder associated therewith.

More specifically it is concerned with the joint control of a page telegraph printer and associated projector for displaying news items on a screen in enlarged characters and a second projector alternating therewith for displaying previously prepared material such as advertising, news pictures and the like.

One of the objects of the present invention is to provide means at the receiving station responsive to signals transmitted over the telegraph circuit for selectively operating either of said projectors.

Another object is to provide means responsive to the transmitted signals for alternating shifting from one projector to the other.

A still further object is to provide mechanism for projecting previously prepared material, such as advertising matter, on to a suitable screen during the printing of at least a portion of a news item and then to shift the projection to the record produced by the telegraph printer.

Still other objects and advantages will appear from the following description taken in connection with the accompanying drawings, in which

Figure 1 is a vertical sectional view of a telegraph page printer and associated projector showing the principal operating mechanism thereof;

Figure 2 is a detailed view of the control switching arrangement provided on the receiving printer;

Figure 3 is a diagrammatic view of the news and advertising projectors and associated mechanism for controlling the operation thereof from the telegraph recorder; and

Figure 4 is a diagrammatic showing of a modification of the projector control system.

The invention is concerned with the operation of news projectors for use in public places such as hotels, restaurants, show windows, etc. for displaying on a screen current news items transmitted telegraphically to the projecting apparatus. The telegraph signals are recorded on a telegraph page printer from which they are advanced into the field of the projector. After the completion of each news item the news projector may be discontinued and a second projector operated for displaying locally prepared material on the screen during the course of the succeeding news item. The locally prepared mate-

rial may consist of lantern slides arranged in a suitable magazine and automatically fed into projecting position.

Referring first to Figure 1, the essential parts of a telegraph page printer which may be employed in carrying out the present invention, are shown. The printing and projecting apparatus comprises the printer A, a web B of transparent or translucent material, such as specially prepared paper, cellophane, etc., a take-up mechanism C and a projecting system D.

The telegraph printer A is of a type well known in the art under the designation of Page Type Bar Printer, model 15, manufactured by the Teletype Corporation, and the disclosure thereof has, therefore, been restricted to so much of the printer as is necessary for an understanding of the operation thereof, and the changes in the construction required in carrying out the preferred embodiment of the invention.

The printing telegraph machine comprises a main frame having irregular shaped side plates or castings 10. A rectangular rail or track 11 and a circular track 12 extend transversely across in front of the frame and serve to support the type bar carriage assembly 13. The type carriage assembly includes a frame 14 carrying at the front supporting rollers 15 riding on track 12, and at the rear a supporting roller 16 riding upon track 11. The web B remains stationary during the printing of each line, the type carriage moving along the tracks 11 and 12 transversely of the web.

Secured to the vertical flange 17 of the frame 14 is an arcuate type bar segment 18 in which the bank of type bars 19 are pivoted. At their outer ends the type bars rest on an arcuate pad 21.

Individual pull bars 22 are disposed immediately below each type bar, the outer ends of the pull bars being arranged above a group of six notched code bars 23 supported in such manner as to be shiftable transversely in accordance with the received signal impulses, as will be more fully explained hereinafter, so as to line up the notches therein with a single pull bar, to permit the pull bar to drop therein.

The machine is of the start-stop type, each character group of signals comprising a start signal, six selecting impulses and a stop signal. In order to avoid shifting of the web to effect printing of either upper or lower case characters, a single printing position is employed, a separate type bar being provided for each figure or character. This requires the use of a six unit code and the consequent employment of six code bars.

An arcuate pull bar bail 24 is disposed below the bank of pull bars and is actuated first forwardly and then rearwardly, in a manner which will appear later, for each group of character signals transmitted. The code bars having been shifted in accordance with the particular character code combination transmitted, one of the pull bars drops into the path of the bail, which on its forward stroke engages the notch 25 of the pull bar, forcing the same forward and thereby drawing the rack 26 of the pull bar against the pinion formed on the end of the type bar, whereby the type bar is thrown upwardly into printing position against the platen 27.

The printing and selecting mechanism is driven from a main shaft 28 extending transversely across the rear of the machine. The shaft 28 is driven from a continuously running motor, not shown, start-stop mechanism of the usual type being provided for releasing the shaft for one revolution upon the reception of the start impulse of each signal group.

The selecting mechanism which responds to the received code signals, is of the usual sword and T-lever type operated under the control of a single line magnet by a series of cams on the main shaft. This form of selector is well known in the art and is fully disclosed in Patent No. 1,745,633 to Morton et al., granted February 4, 1930, and therefore has not been shown herein. It is sufficient to say that each T-lever is connected to the rear of one of a series of six transverse vanes 29 pivoted at each end to the main frame so as to rock the vanes either upward or downward depending upon whether a spacing or marking impulse is received.

The vanes serve through a series of bell cranks 31 to shift the code bars 23 longitudinally to select a particular type bar corresponding to the received signals.

The pull bar bail 24 by which each of the pull bars is forced forwardly, as it drops into the aligned slots of the code bars, is reciprocated by the main printing bail 32 extending transversely of the machine, through mediation of a roller 33 depending from the pull bar bail plunger 34. The bail 32 is pivoted on a transverse shaft 35 and is actuated by a cam 36 on the main shaft 28. The cam 36 engages a roller 37 carried by a lever 38 secured to the bail 32 by an adjustable screw connection 39. The bail is urged forward by a strong spring 41 and is normally held in the rearmost position by the cam 36.

At the end of the printing of each line it is necessary to permit the carriage to be returned to its initial or left hand position and to operate the paper feed mechanism to advance the paper upwardly one line space. These and other auxiliary functions are performed by means of one or more function levers 42 pivoted behind the vanes 29 on a shaft 43 and urged forwardly towards the vanes by individual springs 44. The levers 42 are notched so that they can rock forward in only one position of the vanes and are normally held out of contact with the vanes by a bail 45 carried by an extension of the lever 38. They are released for movement towards the vanes upon each forward stroke of the printing bail.

The paper feed is obtained by the selection of one of the function levers which serves through mechanism not shown to raise a link 46 upwardly. The link 46 extends to adjacent a paper feed roller 47 located above the projecting mechanism. A ratchet wheel 48 fixed to the feed roller is engaged by a pawl 49 pivoted to one arm

of a bell crank lever 51, the opposite of which is connected to the upper end of the link 46. The web passes from a roller 52 mounted at the rear of the machine below the line of printing, and extends around rollers 53 and 54 and thence vertically upward past the platen 27 and around the feed roller 47. A pressure roller 55 holds the web in contact with the feed roller.

The projecting system comprises a suitable light source 56, a condensing lens series consisting of a pair of plano-convex lenses 57 and 58 and an objective lens system 59 located at the opposite side of the web, at the proper focal length therefrom.

Two spaced function levers 42a and 42b serve to switch the control from the news projector to a second projector. The levers are controlled by special code combinations not regularly employed for the printing functions. Disposed behind the levers 42a and 42b, and pivoted on a shaft 43 therebetween, is a T-lever 61 having its opposite arms disposed immediately above the rearward extensions 62 of the function levers. A vertical switch arm 63 of the T-lever plays between two contacts 64 and 65 and is held in shifted position by a detent 66 pressed against the beveled end of the switch tongue by a spring 67. Obviously when the function lever 42a is selected and moved forward by its spring 44 the extension 62 thereof is thrown forward engaging the left end of the T-lever 61 (Figure 3) moving the tongue 63 to its contact 65. Upon the selection of function lever 42b the tongue 63 is similarly moved to its right contact 64.

In Figure 3 we have shown diagrammatically a projector 68 associated with the telegraph printer A, and a second projector 69 which may be a locally controlled printing projector, a moving picture projector or an automatic lantern slide projector. The latter form has been diagrammatically illustrated as provided with an endless slide carrier 71 arranged to feed the slides one at a time into the field of the projector. A projector of this type is shown in patent to Patterson, No. 1,352,471, granted September 14, 1920. The slides may embody advertising matter, news pictures, written or printed notices or any other desired material.

While we have not shown in this figure a screen cooperating with the projectors 68 and 69, it is to be understood that both projectors are disposed relative to a common screen so as to illuminate the same area thereof.

Assuming the switch arm 63 to be in the position shown in Figure 3, a circuit is completed to the lamp 72 of the advertising projector 69 so as to project the slides upon the screen. During the period of this projection the printer A may be operated over the telegraph line L, under the control of the line magnet 73 to produce a number of printed lines, each of which as produced may pass into the field of the projector. After a complete news item or a portion thereof has been printed the control may be transferred to the news projector by transmitting a special code combination to select the function lever 42b. As this lever operates, the switch tongue 63 is moved to its right hand contact extinguishing the lamp 72 of the advertising projector and illuminating the lamp 74 of the news projector 68, so as to project the printed record on to the screen. As each succeeding line of printing is produced it is advanced into the field of the projector and after the item has been completed the advertising projector may again be placed

in operation by transmitting a special code combination representative of the function lever 42a. In this manner the news and advertising projectors may be caused to operate alternately at the will of the transmitting operator.

In Figure 4 we have shown a modification in which the special function levers are dispensed with and the control of the projector effected by two of the regular function bars. In the present instance we have selected the function bar 42c controlling the figures shift operation, and the function lever 42d controlling the carriage return operation for effecting the control of the news and advertising projectors. In place of the T-lever switch 61 we provide separate switches 75 and 76 disposed to the rear of the function bars 42c and 42d respectively so as to be closed by the extensions 62 when the function bars are operated. Stepping switches 77 and 78 are provided for the projectors 68 and 69, each stepping switch having a brush arm 79 normally held against a stop 81 by means of a spring 82 and a set of five or any other convenient number of contacts 83 over which the arm is stepped by means of a pawl 84 acting on a ratchet wheel 85, rigid with the brush arm. The pawl 84 is actuated by a magnet 86 included in circuit with the associated switch 75 or 76. A holding pawl 87 retains the ratchet wheel in each set position as the operating pawl is withdrawn. The holding pawl forms the armature of a magnet 88 included in circuit with a pair of contacts 89 adapted to be opened by the type bar carriage frame 14 when it is in its extreme left hand position at the beginning of a line. The fifth contact of each switch arm is connected by individual conductors to the operating windings 91 and 92 respectively of a relay 93, the contacts of which are grounded through the lamps 72 and 74 of the advertising projectors 69 and the news projector 68, respectively. Battery is applied to the contacts through the relay tongue 94.

The operation of the modification in Figure 4 is as follows. Assuming the relay tongue 94 to rest against its left contact so as to operate the advertising projector 69 and several lines to have been printed by the recorder associated with the news projector 68 so that it is desired to transfer from the advertising to the news projector, the type carriage frame 14 is first returned to its initial position at the beginning of the new line by transmitting a carriage return signal. The switch contacts 89 are thus opened to interrupt the circuit to the restoring magnets 83. A group of five "figures shift" combinations is then transmitted over the line to select the figure shift function lever 42c and successively close contact 75, thereby stepping the switch 77 around to its last contact. The "figures shift" combination, unlike the regular character code combinations, does not advance the carriage across the sheet. Consequently the switch 89 remains open during the reception of the series of "figures shift" combinations and allows the brush arm to be stepped around. When the brush arm arrives on the fifth contact of the group the circuit to the operating winding 92 of relay 93 is completed, attracting the relay tongue to its right contact and thereby interrupting the advertising projector lamp circuit and completing the news projector lamp circuit.

As soon as the first character of the next line of printing is recorded the type bar carriage moves to the right permitting the switch 89 to close and thereby energizing restoring magnets

88 to actuate their holding pawls so as to release the brush arm and permit its return by the spring 82 to its initial position in readiness for the next transfer operation. It is to be understood, of course, that the operating pawl 84 is connected to the holding pawl, in the usual manner, so as to release the operating pawl at the same time the holding pawl is released. The relay 93 is polarized so as to retain the tongue on its last engaged contact after the relay circuit is interrupted.

When it is desired to transfer to the advertising projector a series of five "carriage return" signals are transmitted over the line to select the function lever 42d thereby to step the switch 78 around to its live contact and thus to energize the opposite operating winding 91 of relay 93 to switch in the advertising projector and discontinue the operation of the news projector. We have shown in Figure 4 the news projector 68 and the advertising projector 69 disposed so as to illuminate a common screen S.

It is obvious, of course, that numerous changes and modifications may be made in the details of the apparatus shown and described without departing from the essential attributes of the invention, and therefore we do not desire to be limited to any specific details except as required by the terms of the appended claims.

What we claim is:

1. In a telegraph system, a line, a receiving printer in said line responsive to telegraph code signals, a screen, a projector associated with the printer to project the record produced thereby on to said screen, said printer embodying selecting mechanism, and a switch controlled by said selecting mechanism in one position thereof for initiating the operation of said projector.

2. In a telegraph system, a line, a receiving printer in said line, a selecting mechanism responsive to telegraph code signals, a screen, a projector associated with the printer to project the record produced thereby on to said screen, and a starting device for said projector controlled by said selecting mechanism, when actuated by predetermined telegraph signals for bringing said projector into and out of operation.

3. In a telegraph system, a line, a receiving printer in said line, a screen, a projector associated with the printer to project the record produced thereby on to said screen, and a selecting mechanism controlled by code signals received over said line, said selecting mechanism acting to operate said printer alone, said projector alone, or said printer and projector together.

4. In a telegraph system, a line, a receiving printer in said line, a screen, a projector associated with the printer to project the record produced thereby on to said screen, and a stepping mechanism actuated by a predetermined telegraph code signal successively repeated over said line a predetermined number of times to effect the starting and stopping of said projector.

5. In a telegraph system, a line, a receiving printer, and a projector associated with the printer, said printer embodying selecting mechanism controlled by predetermined signals received over said line for initiating the operation of said projector.

6. In a telegraph system, a line, a receiving printer, a projector associated with the printer, a switch controlled by predetermined printer operating signals transmitted over said line for initiating the operation of said projector, said switch also being responsive to other signals

transmitted over said line to stop the operation of said projector.

7. In a telegraph system, a line, a receiving printer in said line, a screen, a projector associated with said printer to project the record produced thereby on to said screen, a stepping switch arranged, in a predetermined position thereof, to control the operation of said projector, and means controlled by said printer for stepping said switch for each repetition of a predetermined code signal.

8. In a telegraph system, a line, a receiving printer, a selecting mechanism therefor, a first projector associated with the printer, a second projector, and means controlled by predetermined operation of said selecting mechanism in response to telegraph signals received over said line for stopping the operation of the second projector and starting the operation of the first projector.

9. In a telegraph projecting system, a plurality of projectors, a selecting mechanism responsive to telegraph code signals and means controlled by said selecting mechanism for selectively bringing any projector into or out of operation.

10. A telegraph printer responsive to code signals to produce a printed record, a screen, a projector associated with said printer, a second projector disposed relative to the first so as to illuminate a common area of the screen, means for operating one of said projectors at a time and means controlled by said printer in response to predetermined telegraph code signals for transferring the operation from one projector to the other.

11. In a telegraph system, a line, a telegraph printer in said line, a projector associated with said printer, a second projector, and means including said printer mechanism controlled by predetermined telegraph signals received over said line for operating either projector separately and for operating the printer simultaneously with the operation of either projector.

12. In a telegraph projecting apparatus, a telegraph line, a telegraph printer associated therewith, a news projector for projecting matter printed thereby upon a suitable screen, a second projector having previously prepared objects for projection, and a selecting mechanism controlled by telegraph signals received over said line for selectively operating either of said projectors.

13. In a telegraph system, a line, a printer in said line, a projector associated with said printer, a second projector, a separate control circuit for

each projector, means controlled by said printer in response to one code signal received over the line for completing one control circuit to operate the associated projector, and other means also controlled by said printer in response to another code signal for completing the other circuit to operate the second projector.

14. In a telegraph system, a line, a receiving printer in said line, a plurality of projectors, at least one of which is associated with said printer to project the record produced thereby and a selecting mechanism controlled by line signals for selectively bringing a desired projector into and out of operation.

15. In a telegraph system, the combination with a line and a receiving selector in said line, having a plurality of code elements selectively positioned in response to telegraph signals, of a projector and means controlled by said code elements when they are set in a predetermined position by said telegraph signals for bringing said projector into operation.

16. In a telegraph system, the combination with a line and a receiving selector in said line, having a plurality of code elements selectively positioned in response to telegraph signals, of a projector and means controlled by said code elements when they are set in a predetermined combination for bringing said projector into operation, and when said code elements are set in another combination for discontinuing the operation of the projector.

17. In a telegraph system, the combination with a line and a receiving recorder in said line having a character selecting mechanism, of a projector associated with the recorder to project the record produced thereby and means controlled by said character selecting mechanism, for bringing said projector into and out of operation.

18. In a telegraph system, the combination with a line and a receiving selector in said line having a plurality of code elements selectively positioned in response to telegraph signals, of a plurality of projectors, means for rendering at least one of said projectors active, and means controlled by said code elements when they are set in a predetermined combination for bringing another of said projectors into operation and for terminating the operation of the active projector.

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