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R. F. DIRKES ET AL

2,027,026

CONTROL MEANS FOR TELEGRAPH PRINTERS AND PROJECTORS

Filed Nov. 25, 1931

2 Sheets-Sheet 1

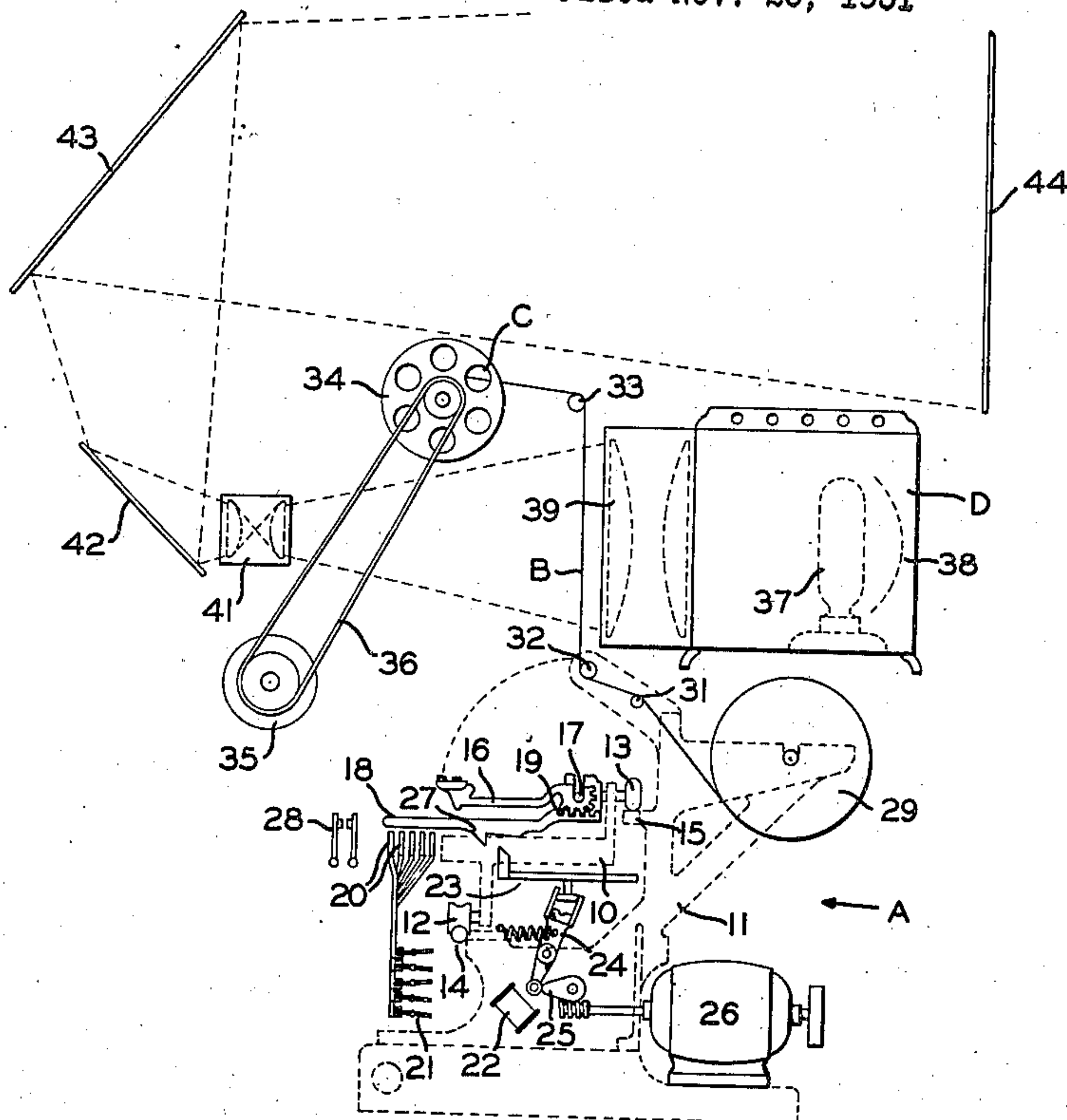


FIG. 1

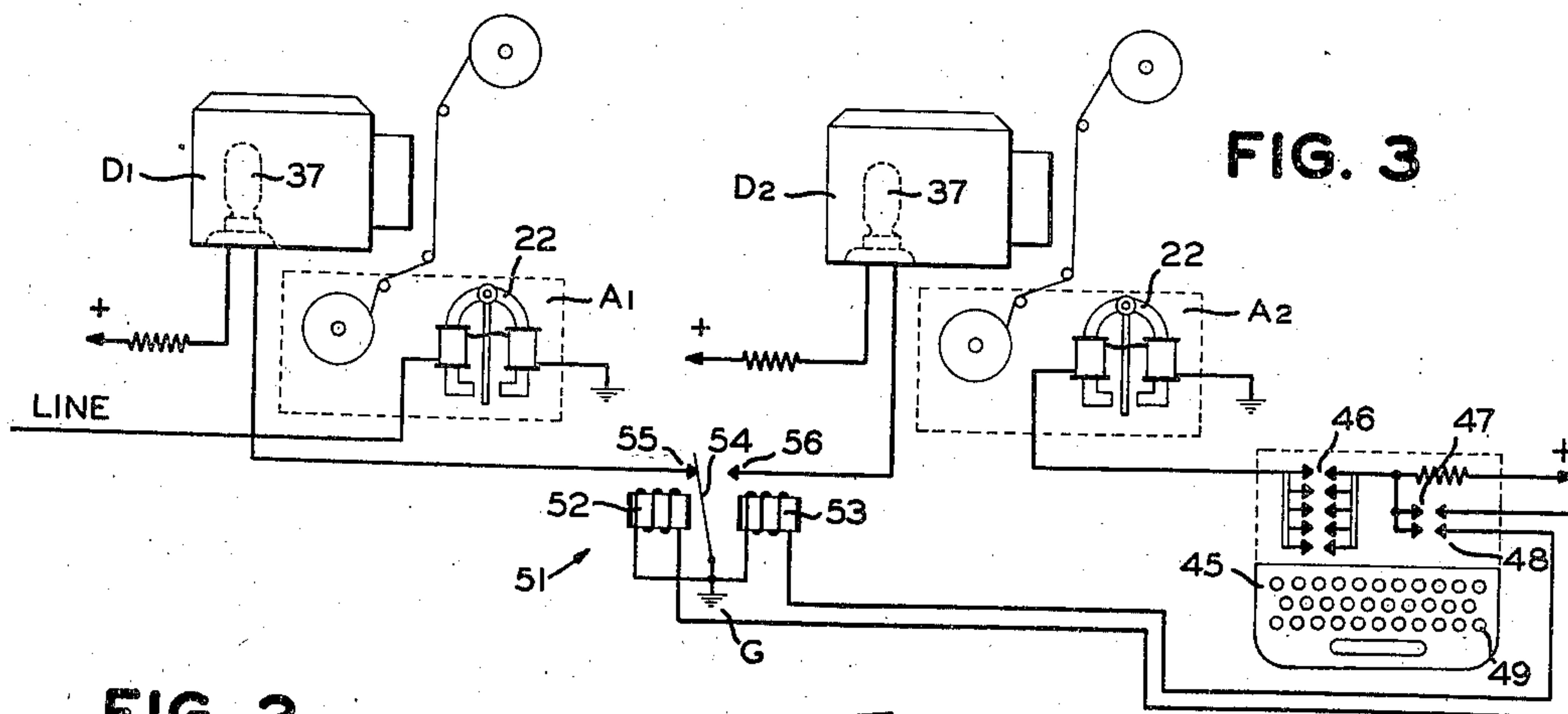
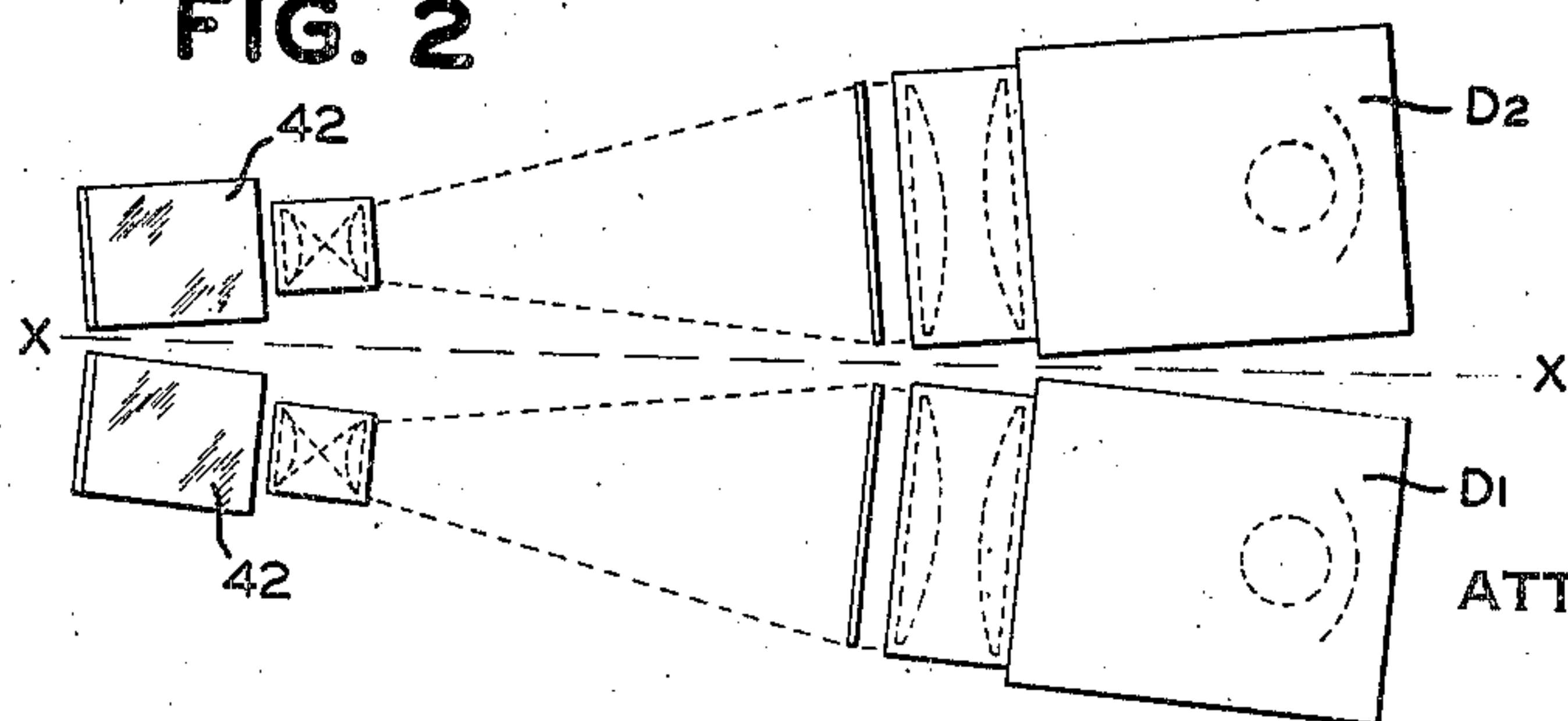


FIG. 2



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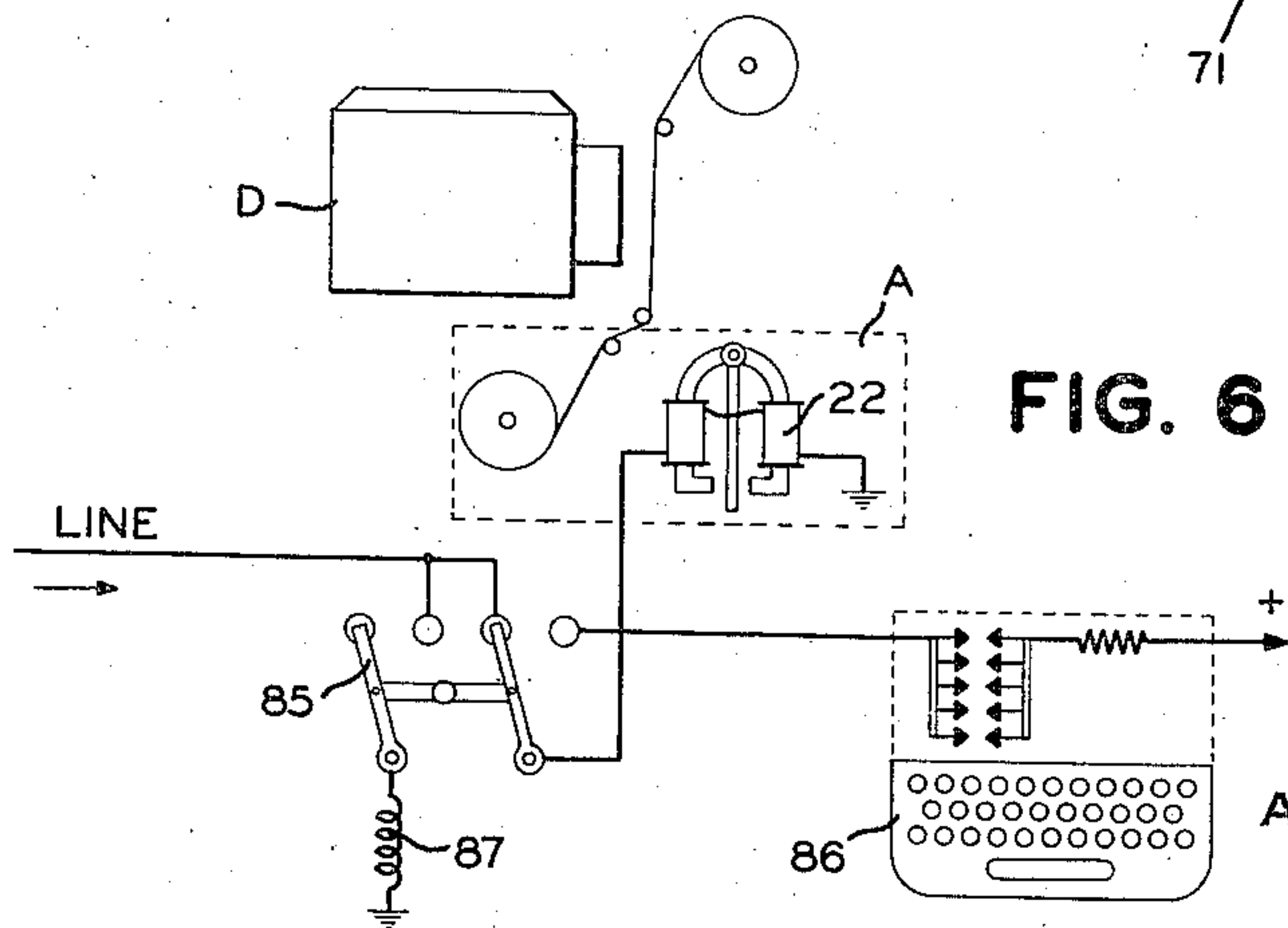
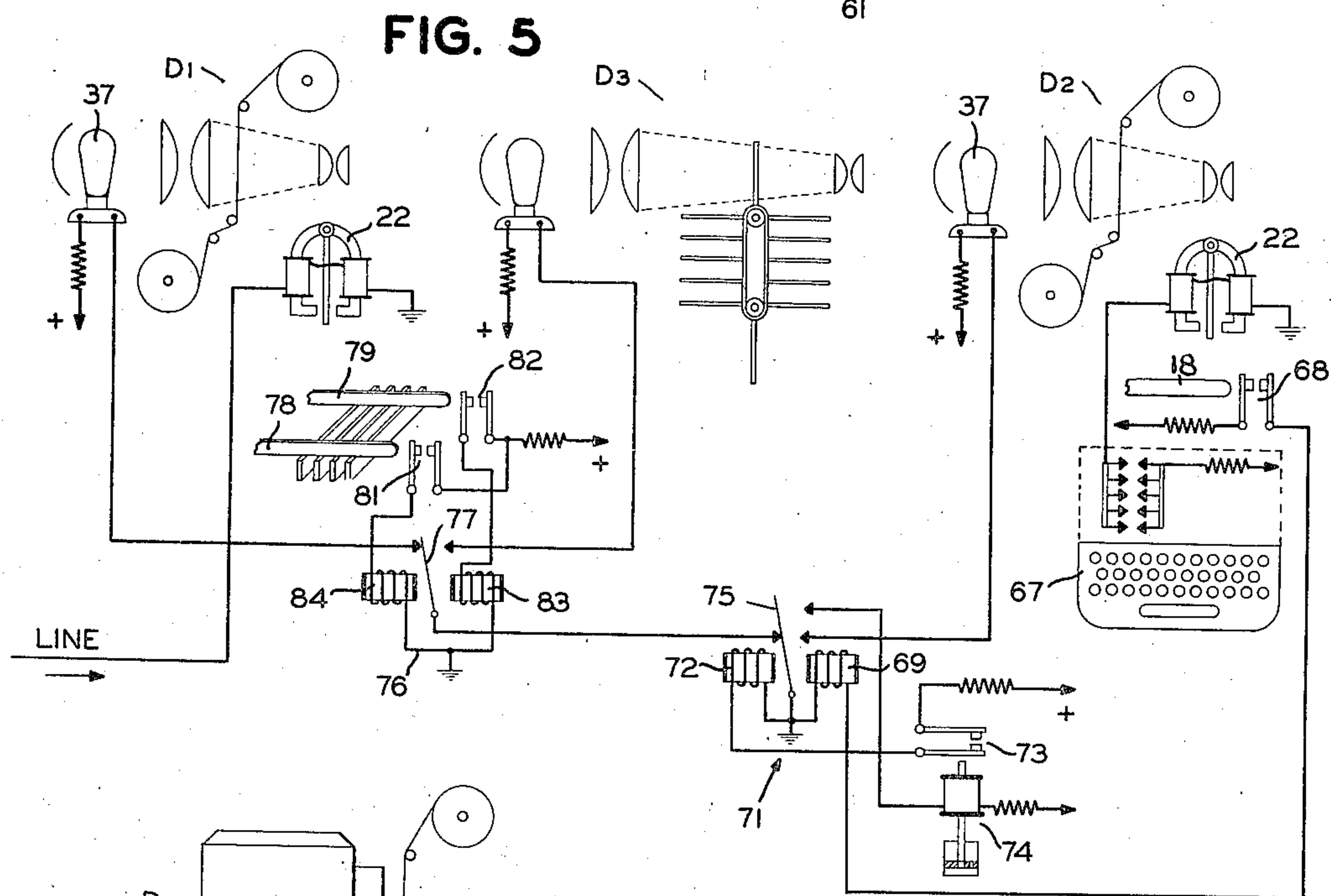
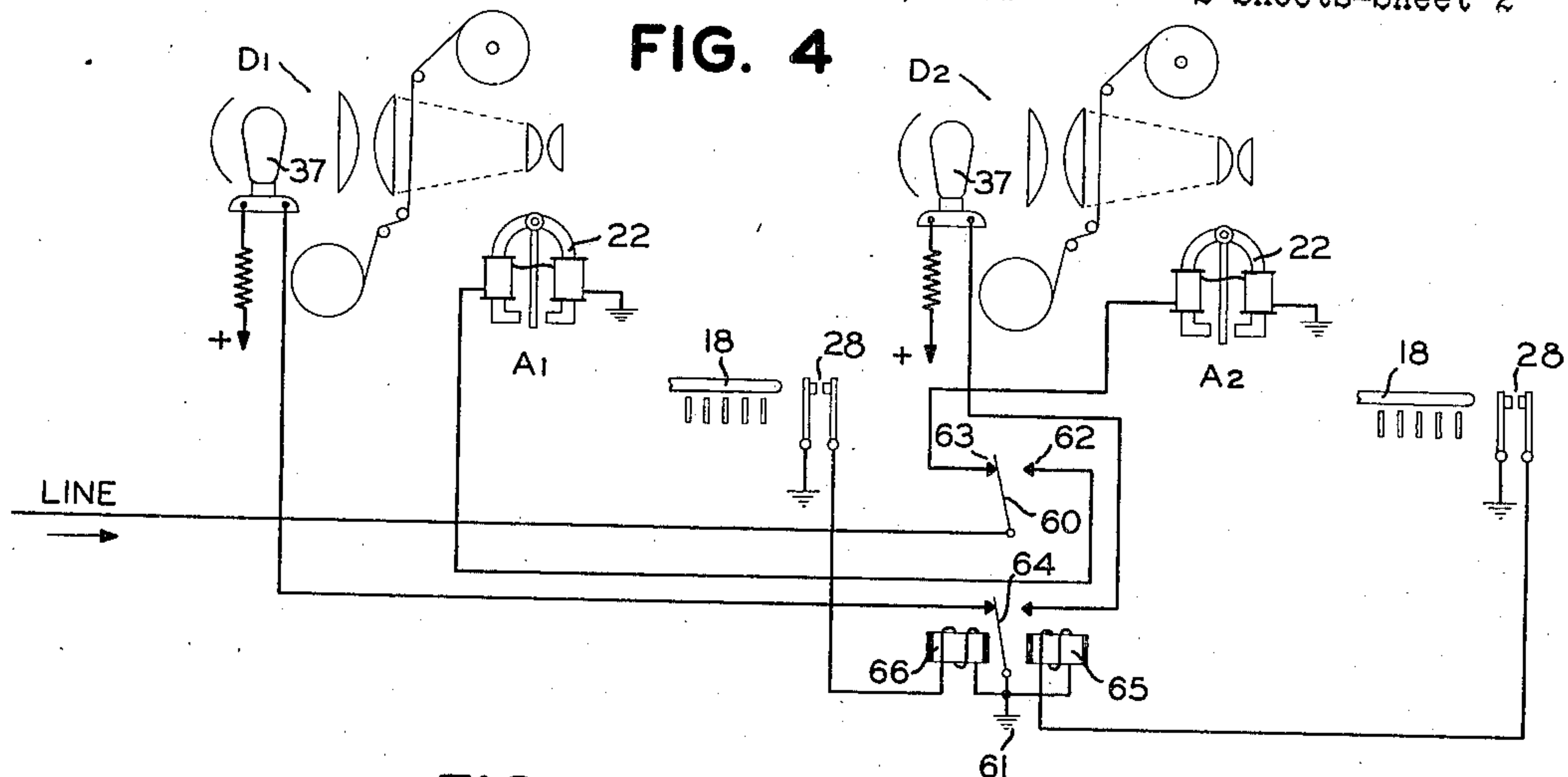
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CONTROL MEANS FOR TELEGRAPH PRINTERS AND PROJECTORS

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2 Sheets-Sheet 2



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CONTROL MEANS FOR TELEGRAPH
PRINTERS AND PROJECTORS

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9 Claims. (Cl. 88—24)

This invention relates to a telegraph projecting system and more particularly to the control of two or more telegraph page printers having projectors associated therewith and arranged to project news or similar items produced by the printers, alternately or selectively upon a common screen.

In telegraph page projectors as heretofore proposed, a single printer responsive to telegraph signals transmitted over a line is arranged adjacent a projector so that each line as it is printed, passes into the field of the projector, the printed lines moving upwardly across the screen in an intermittent or step-by-step movement.

In news or bulletin printing systems it is usual to divide up the news matter into short paragraphs or separate items. These items are ordinarily of such length that the complete item may be projected on to a screen of convenient size at one time and therefore, in the projection of such news items, it is desirable, in some instances, to withhold the displaying of an item until it has been completely printed and then to project the complete item on to the screen, holding it motionless thereon for a long enough period to enable it to be read and then replacing it with another complete item. For this purpose it has been found advantageous, in news projecting systems to employ a plurality of printers, one printer responding to signals to produce a copy or record during the period of projection of the record from the other printer, both projectors being disposed so that the copy may be projected selectively upon a common screen. One printer may be remotely controlled, as part of a general news distributing system and the other printer may be locally operated and used to intersperse, between such general news items, items of local interest. In such case, it is obvious that the copy must be projected from only one printer at a time, one printer preferably being given preference over the other. For instance, the general news printer may be normally in operation to provide successive news items for projection, the local printer being arranged to cut in on the projection whenever a local item is to be displayed. In another arrangement both printers may be remotely controlled, successive items being recorded upon alternate printers whereby the record from one printer may be displayed on the screen during the printing of the following item on the other printer, after which the record of the last printer may be fed into the field of its projector and

the image of one item on the screen caused to fade into the image of the other.

One of the objects of the present invention is, therefore, to provide a telegraph projecting system in which the above operations may be readily obtained.

Another object is to provide a telegraph printing and projecting system in which the control of the projecting apparatus may be effected selectively by line signals.

Another object is to provide an arrangement in which two or more printing and projecting devices may be selectively controlled by line signals and in which a locally controlled projector may be given preference thereover at the will of the local operator.

Other objects and advantages of the invention will appear as the description proceeds.

In the accompanying drawings, which illustrate preferred embodiments of our invention;—

Figure 1 is a diagrammatic view of the projector and printer;

Figure 2 is a plan view of the projectors located side by side;

Figure 3 is a diagrammatic view of the transmitting unit and the receiving unit;

Figure 4 is a diagrammatic view showing the inter-control feature between the two printers;

Figure 5 is a view showing another form of inter-control between a plurality of printers; and

Figure 6 is a further diagrammatic view showing the switching device.

Referring first to Figure 1 we have shown a telegraph projector comprising a printer A, a web B of transparent or translucent material, such as special prepared paper, "Cellophane", etc., a take up or winding mechanism C and a projection system D. The printer is of the type bar type, well known in the art under the designation of page type bar printer, model 15, manufactured by the Teletype Corporation. It is more fully shown with reference to a page projector in application of G. R. Benjamin and J. W. Long, Serial No. 523,372 filed March 17, 1931 and which has become Patent No. 1,980,160, dated November 13, 1934 and entitled "Projector for type bar printers." Briefly, it consists of a type bar carriage 10 supported upon the main frame 11 by rollers 12 and 13 riding upon rails 14 and 15, respectively, whereby the carriage may be moved transversely across the page as each successive character is printed. The web remains stationary during the printing of each line and moves upwardly into the field of the

projector one line space as each line is completed.

The type bars 16, pivoted at 17, are actuated by individual pull bars 18 through the rack and pinion 19. The pull bars normally rest upon a group of notched code bars 20, actuated by individual vanes 21 positioned in accordance with received code signals by means, not shown, controlled by a polarized magnet 22 in the line circuit. A pull bar bail 23 is disposed below the bank of pull bars and is reciprocated by a pivoted lever 24, in turn actuated by a cam 25 driven by the motor 26. As each pull bar drops into the aligned notches of the code bars 20, when a predetermined code combination is set up therein, a shoulder 27 on the pull bar moves downwardly into the path of the bail 23, whereupon the pull bar is forced forwardly to rock the type bar lever upwardly into engagement with the web B. A pair of contacts 28 may be disposed in the forward path of certain of the pull bars so as to be closed thereby, for a purpose which will hereinafter appear.

The paper or web B passes from a reel 29 over an idler roller 31, platen 32, thence through the field of the projector D and over a roller 33 to the take up reel 34. The reel 34 may be operated in known manner by an electric motor 35, through a belt 36 and a slip clutch, not shown.

The projection system comprises an enclosed light source 37, reflector 38, condenser lens system 39, and an objective lens system 41. The images are reflected by a small mirror 42 upwardly on to a larger mirror 43 and thence horizontally on to the rear of a translucent screen 44.

Referring now to Figure 2 it will be seen that two projectors D1 and D2 may be disposed side by side, in angular relation so as to cause their light beams to converge towards the mirrors 42, which are also inclined towards the center line X-X of the projectors in such manner as to throw the image from each projector on to the same area of the screen 44. The mirror 43 may be common to both projectors.

In Figure 3 we have diagrammatically illustrated the control arrangement for the two projectors D1 and D2. Each projector D1 and D2 is provided with individual printer A1 and A2 respectively. Printer A1 is remotely controlled over an incoming telegraph line and printer A2 is controlled by a local keyboard transmitter 45 having the usual complement of transmitting contacts 46 connected to the operating magnet 22 of printer A2, and a pair of auxiliary contacts 47 and 48 controlled by the key levers 49. The light source 37 of each projector is controlled by a polarized relay 51 having two magnets 52 and 53. The tongue is grounded at G and operates between contacts 55 and 56. One of the magnets 52 is controlled by closing of contact 47 and the other magnet 53 by closing of contact 48. Normally the tongue of the relay rests against the contact 55 connecting the ground G, in the energizing circuit of lamp 37 of projector D1 so that the printed record on the web of printer A1 is projected on to the screen 44.

With the arrangement here shown, each line as it is printed passes upwardly into the field of the projector. If it is desired to project a local news or advertising item, the same may be printed upon the web of the printer A2 and after it has been completed and moved into the field of the projector, the switch 48 of the keyboard transmitter 45 may be closed, energizing the magnet 53 and drawing the tongue 54 against the contact 56, thereby interrupting the operation of

the projector D1 and starting projector D2 into operation. Due to the lag in the cooling of the lamp filament, the effect of extinguishing one lamp and lighting the other in rapid succession, is to cause an overlapping in the operation of the projectors whereby the image from the projector D1 appears to fade into the image from the projector D2. After the item has been displayed for the desired time, contact 47 of the printer magnet may be closed, by manipulation of the keyboard, to energize the magnet 52 and thereby returning the control to the projector D1.

It is obvious that the remote operator, not being aware of the discontinuance of the operation of the projector D1 will continue to transmit to the printer A1. However, since the projector normally provides for a display of from ten to fifteen lines on the screen at one time, it is evident that, unless the local item is retained on the screen for an undue period, the projector D1 will again be brought into operation before the last line previously displayed thereby passes beyond the field of the projector. Ordinarily, the local operator will observe the operation of the printer A1 and switch over to the local item at the end of one of the general news items and will return the control to the projector D1 as soon as the next general news item has been completed.

In Figure 4 I have shown an arrangement in which the projectors D1 and D2 are both remotely controlled, one serving to project an item or paragraph while the succeeding item is being printed by the printer associated with the other projector. In this case the incoming line is connected to the tongue 60 of a polarized relay 61, the opposite contacts 62 and 63 being connected to the control magnets 22 of the printers A1 and A2 respectively. The light source 37 of each projector is controlled through the tongue 64 of relay 61. In the position of the relay shown the lamp associated with projector D2 is extinguished, the line signals being directed to the printer A2 to produce a printed copy and the light source of projector D1 is energized to project the item previously recorded by the printer A1 on to the screen. The printer A1 is idle at this time so that the projected item remains stationary on the screen. Upon the completion of the printing of the item by the printer A2, a special character signal may be transmitted to select a predetermined pull bar 18 of printer A2 having a contact 28 disposed opposite the end thereof, whereby the contact is closed, completing a circuit from the ground to the magnet 65 of relay 61, reversing the position of the tongues 60 and 64, thereby interrupting the operation of projector D1 and starting the operation of projector D2. At the same time the line is switched from the printer A2 to the printer A1. Similarly, at the termination of the next item a predetermined pull bar of printer A1 may be selected to close the contact 28 of this printer and thereby complete a circuit to the magnet 66 to return the control to the projector D1. Each item remains stationary on the screen for its full projection period and then fades into the other item with no movement of the lines across the screen.

Figure 5 shows a modification using a remotely controlled printer projector D1 and lantern slide projector D2. As in the form shown in Figure 3, the locally controlled projector has preference and for this purpose the local printer D2 has a pair of contacts 68 arranged to be closed by a predetermined pull bar 18. The contacts 68, when

closed, complete a circuit to one magnet 69 of a relay 71. The opposite magnet 72 is energized through the normally open contacts 73 of a dash pot solenoid 74. The winding of the solenoid 74 is energized through a circuit completed to ground through the upper right contact and tongue 75 of relay 71. The lower right contact of relay 71 is connected to the lamp 37 of projector D2 and the left contact is connected to the tongue of a relay 76, which determines whether the projector D1 or D3 is to be operated.

In the position shown, ground at the tongue relay 71 is connected through the tongue 77 of relay 76 to the lamp 37 of projector D1 and consequently this projector is in operation. The line is connected to the operating magnet 22 of the associated printer and each line as it is printed is advanced into the field of the projector. The control of projectors D1 and D3 is effected by line signals through the selection of one or the other of two pull bars 78 or 79, controlling contacts 81 and 82 respectively. If it is desired to discontinue news projector D1 and start the telegraph projector D3 into operation, pull bar 79 is selected, closing switch contacts 82, thereby energizing magnet 83 of the relay 76 and moving the tongue 77 to its right contact. This interrupts the ground to the lamp of projector D1 and completes it to the lamp of projector D3. When it is desired to return the control to projector D1, pull bar 78 is selected closing contact 81 and energizing magnet 84 to return tongue 77 to its left contact.

Should the local operator, after printing an item for the projector D2 desire to take control, the contact 68 is closed by selecting the proper pull bar 18, thereby energizing magnet 69 of relay 71 and thereby throwing tongue 75 to its right side. This removes ground from the lamps of both projector D1 and D3 and completes the circuit to the lamp of projector D2 starting this projector into operation. At the same time a circuit is completed to the slow acting solenoid 74, which after a predetermined interval, preferably of about one-half minute, causes contacts 73 to close, energizing magnet 72 and returning the tongue 75 to its left contact to restore the control to one or the other of the projectors D1 or D2.

The projector D3 may be of the type shown in the patent to Patterson, No. 1,352,471 granted September 14, 1920, or it may be a combined printer and projector operating alternately with the projector D1, as shown in Figure 4.

In Figure 6 we have shown a single printer employed for both local and remote operation. With the manual switch 85 in the position shown, the incoming line is connected to the operating magnet 22 of a printer A. When it is desired to break in with a local item, the switch is moved to its right contacts, connecting the keyboard transmitter 86 to the magnet 22 and at the same time inserting a compensating coil 87 in the line circuit. During the operation of the local keyboard, signals transmitted over the line do not actuate the receiving printer. The switch 85 obviously may be controlled either from a contact of the keyboard transmitter or by a contact controlled by one of the pull bars or otherwise selected by the printer.

Obviously many variations and modifications may be made in the construction and arrangement of the apparatus shown without departing from the invention and therefore we do not

desire to be limited to the details described and shown herein.

What we claim is:

1. A telegraph projecting system comprising a telegraph printer responsive to code signals to produce a printed record, a screen, a first projector associated with said printer, a second printer controlled by code signals, a second projector for the second printer, a third projector, said projectors being disposed relative to each other so as to illuminate a common area of the screen, means for operating one of said projectors at a time, means controlled by code signals transmitted to the first printer for selectively operating either the first or third projectors, means for starting the operation to the second projector and for rendering a first and third projector inoperative and means acting after a predetermined time for interrupting the operation of the sound projector and restarting the operation to either the first or third projector.

2. A telegraph projecting system comprising a plurality of record producing devices, a projector for each device, and means controlled by either one of said record producing devices for selectively operating said projectors to project from a desired record.

3. A telegraph projecting system comprising a plurality of projectors, a telegraph recorder individual to each projector, a source of telegraph signals common to said recorders, each of said recorders being responsive to said signals to produce a printed record, means for passing each of said records through the field of one or another of said projectors, and means controlled by a predetermined selective operation of any of said recorders in response to received telegraph signals for terminating the operation of one of said projectors and initiating the operation of another projector.

4. A telegraph projecting system comprising a screen, a pair of projectors disposed so as to illuminate a common portion of said screen, a telegraph recorder for each projector, a common source of telegraph signals for said recorders, said recorders being responsive to said signals to produce printed records, means for passing said records through the field of one or the other of said projectors, and means controlled by a predetermined selective operation of either of said recorders in response to received telegraph signals for terminating the operation of one of said projectors and initiating the operation of the other projector.

5. In a telegraph projecting system, a pair of projectors, a pair of telegraph recorders, a telegraph line common to said recorders, means controlled by telegraph code signals received over said line for connecting the line selectively to one or the other of said recorders to produce a printed record thereby, means for passing the record produced by each recorder through the field of an individual one of said projectors, and means also controlled by said received telegraph signals for selectively starting and stopping the operation of said projectors.

6. A telegraph projecting system comprising a plurality of projectors, a telegraph recorder, a source of telegraph signals, said recorder being responsive to said signals to produce a printed record, means for passing said record through the field of one of said projectors, means controlled by a predetermined selective operation of said recorder in response to received telegraph signals for terminating the operation of one of said pro-

jectors and initiating the operation of another projector, and a timing mechanism for automatically terminating the operation of said last mentioned projector and restarting the operation of
5 said first projector after a predetermined time.

7. A telegraph projecting system comprising a plurality of projectors, a telegraph recorder, a source of telegraph signals, said recorder being responsive to said signals to produce a printed
10 record, means for passing said record through the field of one of said projectors, means controlled by a predetermined selective operation of said recorder in response to received telegraph signals for terminating the operation of
15 one of said projectors and initiating the operation of another projector, and means independent of said received telegraph signals for terminating the operation of said last mentioned projector and restarting the operation of said
20 first mentioned projector.

8. A telegraph projecting system comprising a plurality of record producing devices, a common

source of telegraph signals for operating said devices, a projector for each device, and means controlled by either one of said devices for associating said other device with said common
5 source of signals and for selectively operating said projectors to project from a desired record.

9. A telegraph projecting system comprising a plurality of telegraph recorders responsive to code signals to produce a printed record, a projector associated with each of said recorders,
10 an auxiliary projector, a screen common to said projectors, means controlled by code signals received on one of said recorders for selectively controlling either the projector associated there-
15 with or said auxiliary projector, and means controlled by said signals received by said other recorder for operating the projector associated therewith and for discontinuing the operation of the operating one of said selectively controlled
20 projectors.

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