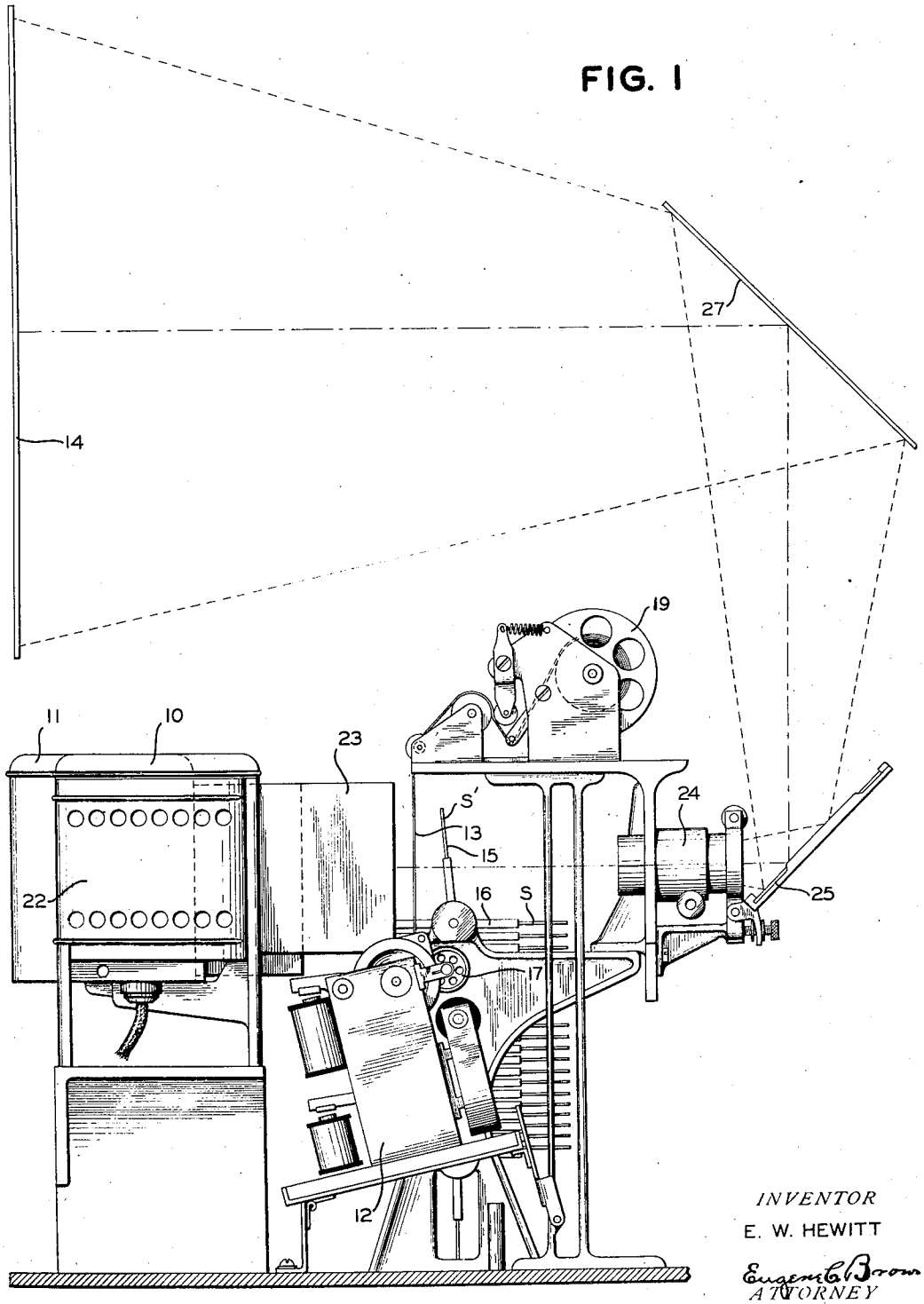
Aug. 7, 1934. E. W. HEWITT 1,969,461

DISPLAY APPARATUS

Filed March 7, 1933 4 Sheets-Sheet 1

FIG. 1



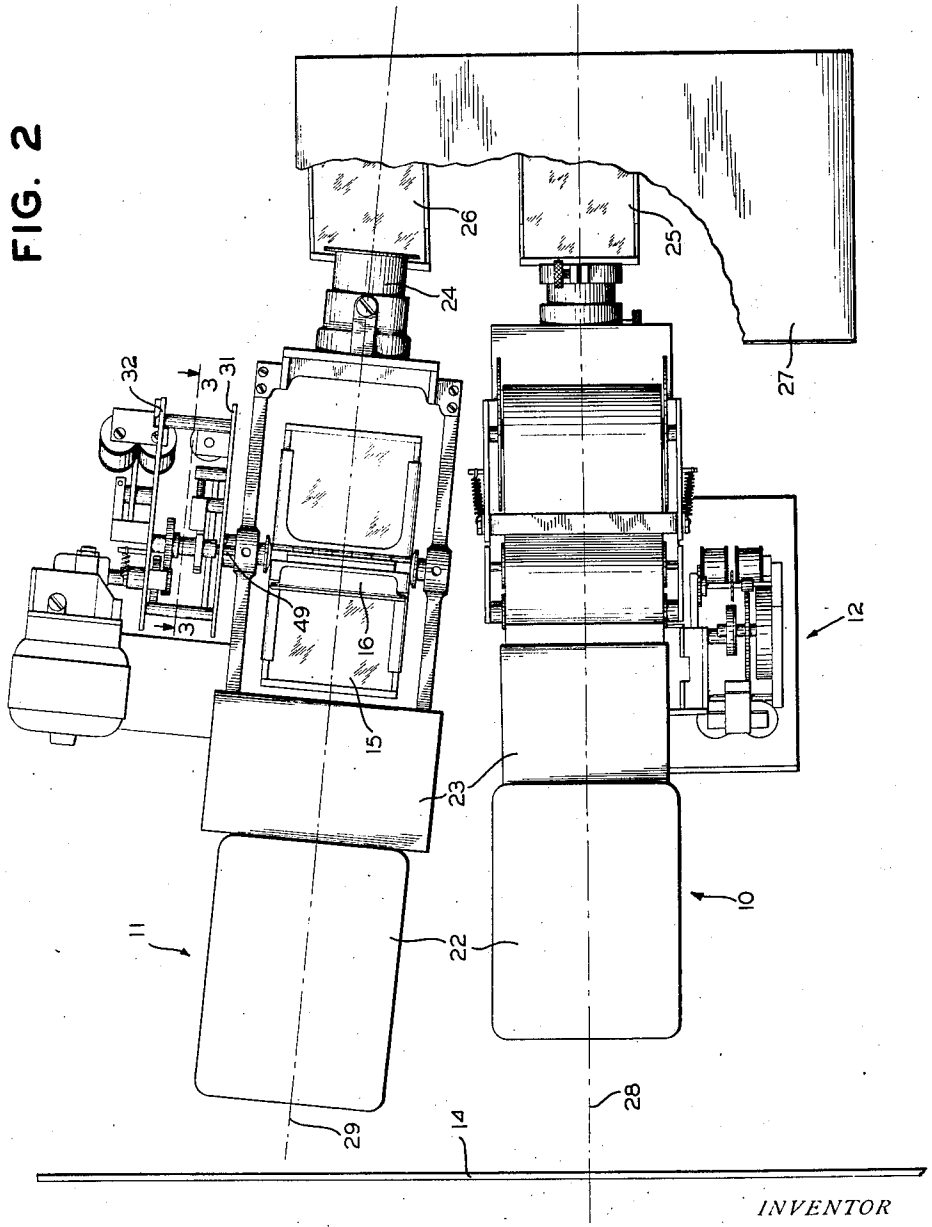
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DISPLAY APPARATUS

Filed March 7, 1933 4 Sheets-Sheet 2

FIG. 2



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DISPLAY APPARATUS

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FIG. 3

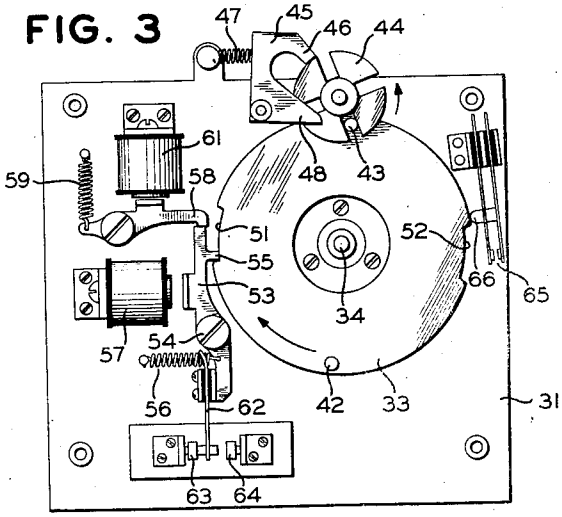


FIG. 6

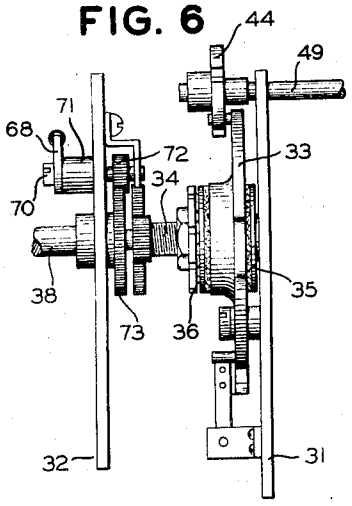


FIG. 4

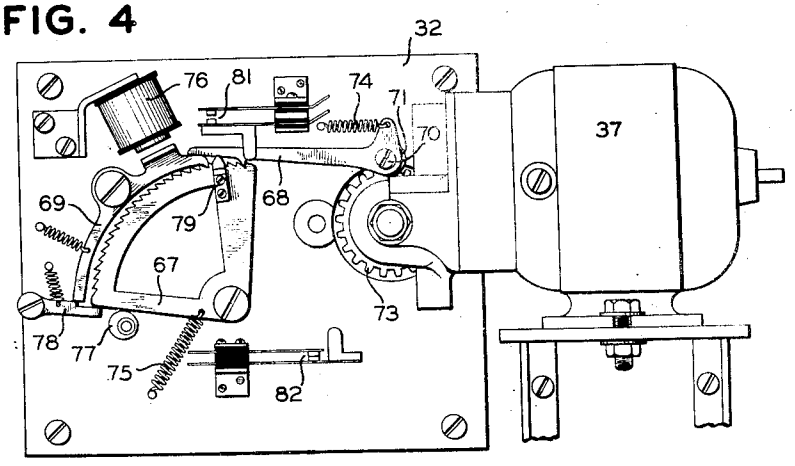
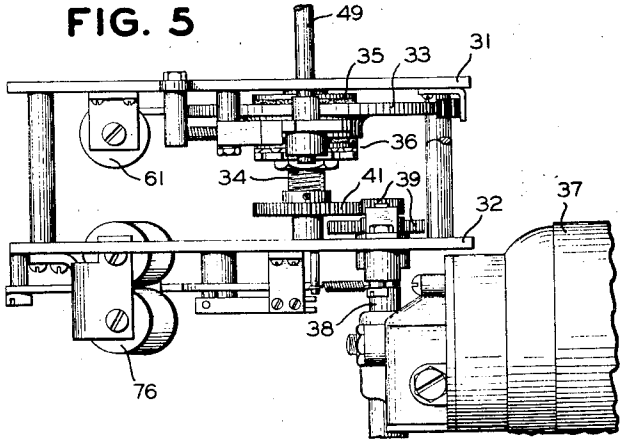


FIG. 5



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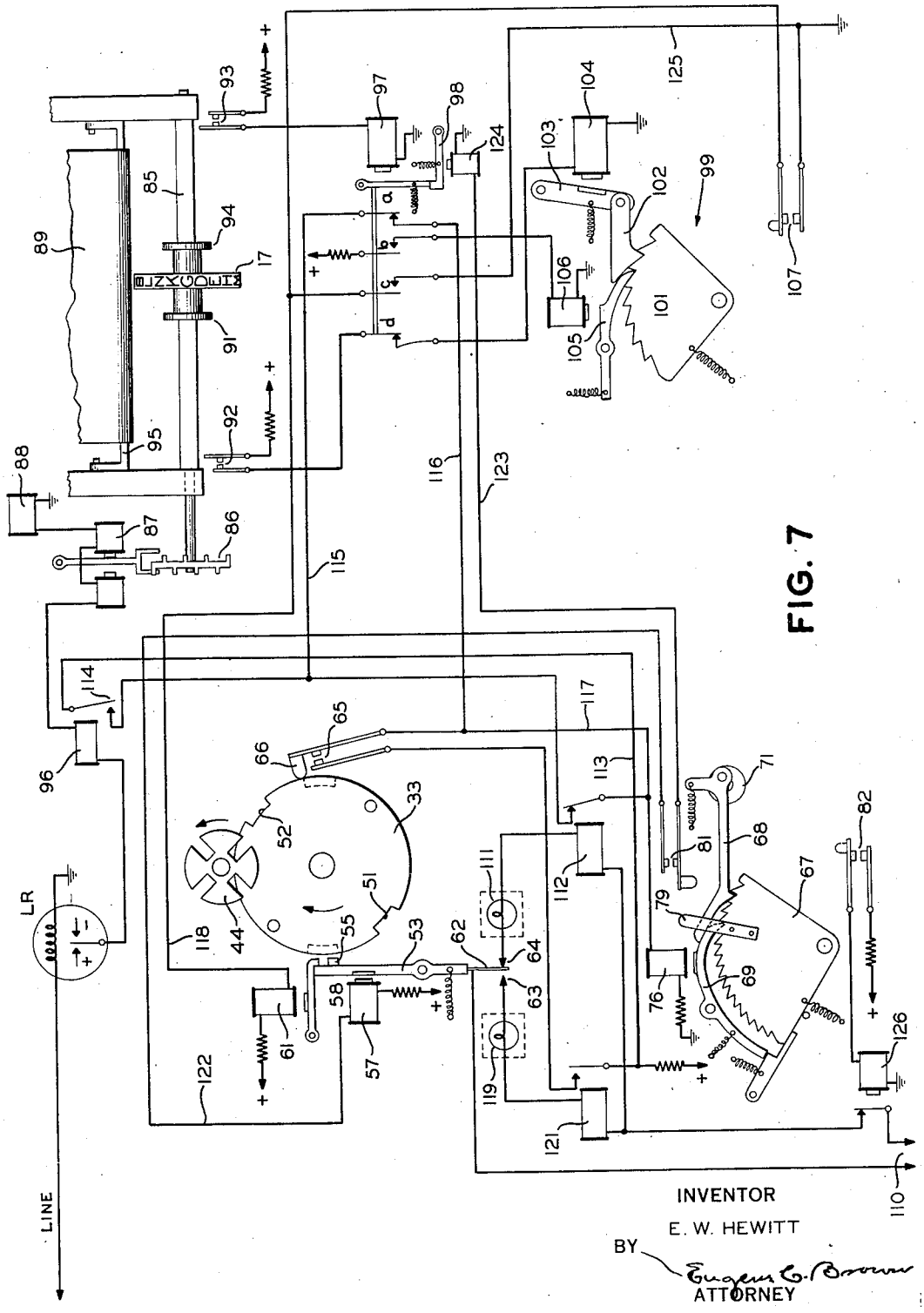


FIG. 7

Patented Aug. 7, 1934 1,969,461

UNITED STATES PATENT OFFICE

1,969,461

DISPLAY APPARATUS

Ernest W. Hewitt, Stamford, Conn., assignor to The Western Union Telegraph Company, New York, N. Y., a corporation of New York

Application March 7, 1933, Serial No. 659,973

20 Claims. (Cl. 88—24)

This invention relates to a display apparatus and more particularly to the construction and control of apparatus for displaying news and advertising matter in interspersed relation.

In a copending application of R. F. Dirkes and E. R. Wheeler, Serial No. 577,356, filed May 10, 1932, there is shown a system involving the use of two telegraph printers arranged to have the records produced thereby, displaying alternately in enlarged characters on a common screen, whereby news items, etc., which are telegraphically received on one printer may be displayed while a succeeding news items is being recorded upon the other printer.

In the present invention an advertising display device is used alternately with a printing telegraph machine. The advertising matter may be in the form of slides each forming one unit of the advertising display and from which an enlarged image is produced on a screen. In addition to advertising, the slides may include scenic, local news features or other matter which may be prepared in advance. It is arranged to operate during the period of recording of a current news item on the printer, after which the operation of the slide displaying device may be interrupted and the news displaying mechanism started. The telegraph printer may be part of an extensive news ticker system, supplied with operating signals from a central news bureau.

One of the objects of the present invention is to provide a display apparatus in which current news items may be displayed interspersed with advertising or similar matter.

Another object is to control the displaying of both news and advertising and the transfer of one from the other from a remote point.

A still further object is to provide means for timing the transfer from the display of one service to the display of the other.

Still another object is to effect the starting or stopping of one or both display devices from line signals.

Other objects and advantages of the invention will hereinafter appear.

In the preferred embodiment of the invention the display device is arranged for use in store windows, hotel lobbies, brokers' offices, and other public places, the entire mechanism being enclosed within or forming part of a cabinet. By way of example the display may be effected by projectors associated with a screen forming one wall of a cabinet. This permits only a short throw of the projectors to be obtained and consequently one or both projectors are necessarily disposed at an angle to the screen. Keystoning in the lantern slide projector due to such obliqueness can be readily overcome by counter-keystoning of the slides, but distortion of the printed page is less easily corrected. Accordingly I prefer to place the printer projector with its optical axis in a plane normal to the screen whereby no distortion is produced in projecting therefrom and to cause all of the distortion to occur in the slide projector, correction being effected through distortion of the slides.

In accordance with my invention an endless slide carrier or other form of magazine for the advertising units is controlled, during the printing of a predetermined number of lines on the news printer, so as to bring the slides successively into the field of a projector, each slide being held stationary therein for a predetermined interval. After said predetermined number of lines of news have been printed the feeding of the slides is automatically arrested, the slide projector shut off and the news projector started into operation. The transfer from advertising to news is timed however to occur only during the change-over from one slide to the succeeding one, thereby enabling each advertising unit to be displayed for its full period. The succeeding lines of the news item are fed into the field of the news projector, as printed. After the last line has been completed or at any other desired time, at the will of the transmitting operator, the display may be retransferred from news to advertising. This retransmission however is also timed automatically to retain the last printed line on the screen for a definite reading period following the transfer signal and preceding the change to slide projection. In case no printing signals are received over the telegraph line for a prolonged interval, which may be of several minutes' duration, both displays are automatically discontinued.

In order that the invention may be more fully understood reference will be had to the accompanying drawings in which

Figure 1 is a side elevation of a double projecting system embodying the present invention;

Figure 2 is a plan view thereof;

Figure 3 is an elevational view of a part of the slide controlling mechanism as viewed on the line 3—3 of Figure 2;

Figure 4 is a side elevation of another part of the slide controlling mechanism as viewed from the left of Figure 2;

Figure 5 is a plan view of the slide controlling mechanism;

Figure 6 is a side elevation thereof as seen from the right of Figure 5; and

Figure 7 is a diagram showing the circuit arrangement for controlling the news and advertising displays.

Referring first to Figures 1 and 2 I have shown two projectors 10 and 11, the former having a page printing telegraph apparatus 12 associated therewith for recording news items, etc., upon a transparent tape 13 from which they are projected on to a screen 14. The other projector 11 is arranged to project from a series of object slides 15 adapted to be fed in succession into projecting position by an endless object carrier 16.

Printer 12 may be of any suitable type and is shown as of the Burry page type in which the printing is effected by a type wheel 17, on to the rear face of the web 13. The web passes vertically through the field of the projector being rewound on a suitable reel 19. This combination of Burry printer and projector is shown in more detail in a copending application of J. W. Long and E. R. Wheeler, Serial No. 517,353, filed February 20, 1931 and entitled "Page projector for recorders". The slide carrier 16 is of standard construction forming the subject matter of patent of W. L. Patterson, No. 1,352,471, granted September 14, 1920 for "Automatic projectors."

The projectors 10 and 11 are of standard construction, each comprising a lamp housing 22, a condensing lens system contained within a housing 23 and an objective lens system 24. The projectors are preferably mounted within a cabinet (not shown) of which the screen 14 forms a front face and they are disposed below the screen facing rearwardly, the images being reflected by individual mirrors 25 and 26 on to a common mirror 27 and thence on to the rear of the screen 14.

As shown in plan view in Fig. 2, the projector 10 is disposed with its optical axis 28 in a plane normal to the screen 14 and the projector 11 is disposed with its axis 29 in a plane oblique to the screen. With this arrangement the printed record from the projector 10 will be thrown on to the screen without distortion, whereas the image produced by projector 11 will have one side enlarged more than the other, due to the fact that the diverging rays for one side of the image travel further than those for the other side, before reaching the screen. In order to neutralize this effect the slides are produced with a counter keystone effect by photographing the object from which they are made from the same oblique angle.

Referring to Figs. 3, 4, 5 and 6, the mechanism for controlling the operation of the slide projector is mounted on two spaced plates 31 and 32 carried on the side of the slide carrier. The inner plate assembly 31 is shown in Fig. 3 and comprises a Geneva pin disc 33 loosely mounted on a shaft 34 and adapted to be driven thereby through a clutch having friction discs 35 and 36 (Figs. 5 and 6) fixed on the shaft 34 and bearing against the opposite faces of the disc 33. The shaft 34 is driven by a motor 37 through a shaft 38 having a gear 39 thereon meshing with a gear 41 on the shaft 34.

The disc 33 has two driving pins 42 and 43 thereon, which engages a Maltese cross member 44 to rotate the same a quarter turn. The cross member 44 is locked at rest at other times by a pawl 45, the upper extension 46 of which is forced by a spring 47 into one of the slots of the cross member as it completes its quarter revolution. The pawl is removed from the slot at the proper time by engagement of one of the pins 42 or 43 with the downwardly extending portion 48 of the pawl. The cross member 44 is mounted on shaft 49 of the slide carrier and serves to move a new slide into the field of the projector upon each quarter revolution thereof.

The disc 33 in addition to the pins 42 and 43 has two depressions 51 and 52 in its periphery. A stop-arm 53 is pivoted at 54 adjacent to one side of the disc and has a stop finger 55 normally urged toward the disc by a spring 56. The arm 53 is adapted to be drawn away from the disc by a magnet 57 and to be held in retracted position by a latch 58, pressed against the upper end of the stop-arm by a spring 59 and drawn away therefrom by a magnet 61. The stop-arm 53 carries a switch tongue 62 which plays between the contacts 63 and 64.

A set of contacts 65 are mounted upon the plate 31 in such position that they are normally held open by the disc but are permitted to close whenever the pin 66 drops into one of the recesses 51 or 52.

The other side plate 32 has mounted thereon a ratchet sector 67 provided with an operating pawl 68 and a holding pawl 69. The operating pawl is mounted by a screw 70, eccentrically on a shaft 71 rotated continuously by the motor 37 through the gears 72 and 73 mounted upon the shafts 71 and 38 respectively. The pawl 68 is pressed against the teeth of the sector by a spring 74. The continued rotation of shaft 71 causes a reciprocating movement of the pawl which gradually draws the sector around in a clockwise direction against the tension of a spring 75. The extended end of the pawl 68 lies over the end of the locking pawl 69, whereby as the latter pawl is released from the teeth of the sector by its operating magnet 76, the operating pawl will also be moved outwardly allowing the sector to be rotated counterclockwise by the spring 75 against its stop member 77. A latch 78 engages the free end of the holding pawl whenever it is moved away from the sector and thus retains both pawls out of engagement with the teeth until the return movement of the sector has been completed, at which time the latch 78 is tripped by the sector. An extension 79 of the sector serves after a predetermined movement of the sector in a clockwise direction to close a set of contacts 81, the function of which will subsequently appear and on extended clockwise movement of the sector it engages and opens a set of contacts 82.

The operation of the control mechanism will best be understood by reference to Fig. 7 which shows the same diagrammatically. In this figure the type wheel 17, is shown mounted to rotate with a shaft 85 controlled by an escapement wheel 86 and escapement magnet 87. Printing is effected by a press magnet 88 on a transparent web 89 which, as shown in Fig. 1, passes upwardly through the field of the news projector 10. In the carriage return or extreme lefthand position of the type wheel, collar 91 on the type wheel sleeve engages and closes a set of contacts 92. A second set of normally open contacts 93 are disposed to the right of the type wheel beyond the printing range so that during the ordinary line printing operations the contacts 93 are not closed but whenever the type wheel is moved to the right beyond the printing range a second collar 94 on the type wheel sleeve engages and closes the same.

The signals for operating the printer, as is well known by those versed in the art, comprises a se-

ries of current alternations or stepping impulses by which the type wheel is stepped around to printing position and a prolonged impulse of the polarity of the last reversal, to which the press magnet 88 responds to operate the printing platen 95, through mechanism not shown. It is to be understood, however, that the invention is not limited to a step-by-step operated type wheel, but the projecting apparatus may be controlled by a permutation type printer, as by the combined action of the carriage return mechanism and type wheel positioning mechanism.

The signals are received over a line L on the line relay LR from which they are repeated to the escapement magnet 87 and the press magnet 88. A slow relay 96 is in series with the magnets 87 and 88 and is adjusted to respond only to the prolonged press impulse.

A three-position relay 97 is provided, having four sets of contacts (*a*), (*b*), (*c*) and (*d*), arranged so that when the relay is energized the contacts (*b*) and (*c*) will be closed and the contacts (*a*) and (*d*) will be open. When the relay is de-energized its armature falls back part way against the latch 98, opening contacts (*b*) and (*c*) and closing contact (*d*). Contact (*a*) is spaced further from its tongue and remains open at this time. Upon release of the latch 98 the armature falls back still further closing contact (*a*) as well as contact (*d*).

A stepping switch 99 is also shown having a ratchet sector 101 stepped around by an operating pawl 102 pivoted to the armature 103 of the stepping magnet 104. A holding pawl 105 is arranged to release the operating pawl on energization of its magnet 106. The sector 101 when moved clockwise a predetermined distance closes a set of contacts 107.

In the position of the parts shown in Fig. 7 it is assumed that the lantern slide projector is operating. Under this condition, the stop-arm 53 will be held away from the disc 33 by the latch 58, thereby holding the tongue 62 against its contact 64 and completing a circuit from the power line 110 to the lamp 111 of the slide projector 11, thence through relay 112 to the opposite side of the power line. With the stop-arm 53 withdrawn the disc 33 is free to rotate continuously in the direction of the arrow, and during each half revolution one of the pins 42 or 43 will engage the cross member 44 to rotate the same and thus feed a new slide into the field of the projector. Thus a succession of slides will be projected on the screen over a predetermined period depending upon the rate of rotation of the disc 33.

During the operation of the slide projector the printer 12 may be operated by the line signals to print a number of lines. At the beginning of each line as the type wheel moves to the left, contacts 92 are closed completing a circuit from battery through the *d* contact of relay 97 to the stepping magnet 104 to advance the sector one tooth.

Each time the press impulse is received over the line, for the printing of a character, relay 96 operates closing its contacts and completing a circuit from battery over a conductor 113, contacts 114 of relay 96 conductor 115, the *a* contact of relay 97 and conductors 116 and 117 to the magnet 76, thus withdrawing the holding pawl 69 and operating pawl 68 from the sector 67 and allowing the same to return counter clockwise to its initial position.

After a predetermined number of lines have been printed as for instance seven, the sector 101 will have been stepped around sufficiently to close contacts 107. When this occurs the circuit is completed for the unlatching magnet 61 from battery through the winding of the magnet, conductor 118 and contacts 107 to the ground. Magnet 61 thereupon withdraws the latch 58 allowing the stop-arm 53 to move against the periphery of the disc 33. The disc 33 continues to rotate, however, until one of the depressions 51 or 52 come opposite the stop-finger 55 at which time the finger enters the depression and stops the disc. This movement of the stop-arm 53 draws the tongue 62 to its contact 63, completing a circuit for the lamp 119 of the news projector and energizing the magnet 121. The record previously printed is thus thrown on the screen in the position formerly occupied by the slides.

In order to insure that the sector 67 will be restored to its normal left hand position at the time the news projector starts into operation, a circuit for the release magnet 76 is completed at this time. It will be noted that the pin 66 which controls the operations of contacts 65 is not disposed directly opposite the stop finger 55. As a consequence contacts 65 are closed just before the finger 55 enters one of the depressions of the disk 33 and remains closed until just before the disk stops at which time it is again opened. During the period of closure of contacts 65 the stop finger 55 enters one of the recesses closing contacts 63 and energizing the relay 121 which closes its contact, thus completing a momentary circuit from battery through the contacts of relay 121, contacts 65 and conductor 117 to the relay 76, thereby energizing the same and allowing the sector 67 to return to its left hand position.

As each succeeding line is printed, it passes into the field of the projector and after the last line of the item has been printed, the operator may space the type wheel to the right beyond the printing position sufficiently to close the contacts 93. This serves to transfer the display back to the slide projector but as previously stated, such retransfer is delayed sufficiently to enable the last printed line to be read. In practice I have found the retransfer should be delayed about ten seconds. This is effected as follows: On closing of contacts 93, the relay 97 is momentarily energized opening contacts (*a*) and (*d*) and closing contacts (*b*) and (*c*). Closing of contact (*b*) operates the holding and operating pawls of sector 101 thus restoring the same to its normal position. The opening of contact (*a*) interrupts the circuit for unlatching magnet 76 of the sector 67 so that it no longer responds to the closing of the contacts 114 of the relay 96.

Immediately thereafter as the type wheel returns towards the left margin of the paper, the relay 97 releases the latch 98, opening contacts (*b*) and (*c*) again and closing contact (*d*). The stepping magnet 99 is thus able to respond to the succeeding carriage return operations. However, contact (*a*) does not close at this time and consequently the sector starts to step clockwise, and after an interval of about ten seconds the extension 79 engages and closes contacts 81. When this occurs a circuit is completed from battery through the winding of the magnet 57, conductor 122, contacts 81, conductor 123 and unlatching magnet 124 to ground. Stop-arm 53 is thus withdrawn, releasing the disc 33 for revolution and operating the tongue 62 to its contact 64, there-

by switching from the news to the slide projector. At the same time magnet 124 withdraws the latch 98, allowing the contact (*a*) to close and thereby restoring the system to normal.

The relay 112 functions to prevent loss of a news item under the following conditions. Assume at the end of a news item, as switch 93 is closed, that the slide projector has just switched to a new slide. The slide time is preferably about fifteen seconds. At this time relay 97 is operated to open contact (*a*) thereby interrupting the circuit to the releasing magnet 76 therethrough. At this time the circuit for relay 76 is completed each time the contacts 114 close through the contacts of relay 112 thereby preventing the continuous stepping of the sector 67, which if it had been permitted to occur would have closed contacts 81 in approximately ten seconds or before the end of the slide time, thereby operating relay 57 and withdrawing the stop arm 53 from the periphery of the disk 33 before the stop position thereof was reached and thus allowing a new slide to be brought into the projector with the consequent loss of the news item.

As stated, the relay 112 prevents such false operation of the system.

In the case of news items of less than the predetermined seven lines, the projecting system may be switched to news by closing the contact 93, thereby operating relay 97 which on closing its contact (*c*) completes a circuit for the unlatching relay 61 independently of the contacts 107. This circuit may be traced from battery through the winding of relay 61, conductor 118, contact (*c*) of relay 97, and conductor 125 to ground. The relay 61 upon operating, releases the stop arm 53 which in due time stops the disk 33, extinguishes the lamp 111 of the slide projector, and completes the circuit through the lamp 119 of the news projector as heretofore described.

The eccentric tends to step the sector 67 continuously, the sector being set back either by the disc 33 on changing from advertising to news or by the closing of relay 96 as each character is printed. Consequently if no printing signals are received over the line L for a period sufficient to enable the sectors to be moved clockwise into position to close contacts 82 (which may require several minutes), relay 126 operates, opening the power supply leads 110 and extinguishing the lamps 111 and 119. The driving motor 37 for the sector 67 and Geneva wheel 33 may also be interrupted by the relay 126.

It will be noted from the foregoing that I have produced a control system for a combined news and advertising display, in which the advertising units are displayed alternately with the printed record, the slides changing at predetermined intervals and the change from advertising to news occurring only after an advertising unit has been displayed for its full period. The display of news matter is controlled by the printer and may occur alternately after a predetermined number of lines have been printed or at any time at the will of the transmitting operator merely by stepping the type wheel beyond normal printing position to close contacts 93.

The change back to advertising does not occur immediately, however, but is delayed for a definite interval sufficient to enable the reading of the item to be completed.

I prefer to have the change from slides to news occur just after one slide has started to move out of the field of the projector and extend the operation of the slide change until the succeeding slide is just ready to enter the proper focus position. This gives a more pleasing appearance when the slide projector is again brought into operation and eliminates any momentary display of the new slide before the change to news or of the old slide upon resuming operation of the slide projector. As shown in Figure 1 which is the rest position of the slide carrier during the projection of news matter, the old slide S has moved completely out of the field of the projector while the new slide S' is still out of focus but in position to move immediately into focus when operation of the slide carrier is resumed.

It is obvious, of course, that various modifications of the apparatus shown herein may be made without departing from the spirit or essential attributes of the invention, and therefore I do not desire to be limited to the specific details shown and described.

What I claim is:

1. In a display device, a telegraph printer for producing a printed record, a plurality of advertising units, means for displaying said record and said advertising units alternately, and means controlled by said printer for changing from the display of the printed record to the display of the advertising units, said means being inoperative for a predetermined period after the printing of the last character preceding said change.

2. In a display device, a telegraph printer for producing a printed record, a plurality of advertising units, means for displaying said record and said advertising units alternately, means controlled by said printer after a predetermined number of lines have been printed for changing from the display of said advertising units to the display of said printed record, and other means also controlled by said printer for subsequently changing from the display of the printed record to the display of the advertising units, said means being inoperative for a predetermined period after the printing of the last character preceding said change.

3. In a display device, a telegraph printer for producing a printed record, a plurality of advertising units, means for displaying said record and said advertising units alternately, means controlled by said printer after a predetermined number of lines have been printed for changing from the display of said advertising units to the display of said printed record, said means being ineffective until the last advertising unit to be displayed has been shown for a predetermined period, and other means also controlled by said printer for subsequently changing from the display of the printed record to the display of the advertising units, said means being inoperative for a predetermined period after the printing of the last character preceding said change.

4. In a display device, a telegraph printer for producing a printed record, a plurality of advertising units, means for displaying said record and said advertising units alternately, means controlled by said printer for changing from the display of the advertising units to the display of said printed record and other means controlled by the printer for changing back from the display of the printed record to the display of the advertising units, said last means being ineffective for a predetermined period after the printing of the last character preceding said change.

5. In a display device, a telegraph printer for producing a printed record, a plurality of advertising units, means for displaying said record

and said advertising units alternately, means controlled by said printer for changing from the display of the advertising units to the display of said printed record, said means being ineffective until the last advertising unit to be displayed has been shown for a predetermined period and other means controlled by the printer for changing back from the display of the printed record to the display of the advertising units, said last means being inoperative for a predetermined period after the printing of the last character preceding said change.

6. In a display device, a printer for producing a printed record, a plurality of advertising units, means for displaying said printed record and said advertising units alternately, means for initiating a change from the display of one to the display of the other and means for rendering said change ineffective until the preceding display has been shown for a predetermined time after the initiation of such change.

7. In a display device, a printer for producing a printed record, a plurality of advertising units, means for displaying said printed record and said advertising units alternately, means controlled by said printer for initiating a change from the display of one to the display of the other and means for rendering said change ineffective until the preceding display has been shown for a predetermined time after the initiation of such change.

8. In a display device, a page printer for producing a printed record, a carriage, a carriage return mechanism therefor, a plurality of advertising units, means for displaying said printed record and said advertising units alternately, means controlled by a predetermined number of successive operations of said carriage return mechanism for transferring from the display of said advertising units to the display of said printed record and means controlled by said advertising display mechanism for timing said transfer.

9. In a display device, a printer for producing a printed record, a plurality of advertising units, means operable over a predetermined cycle for displaying said advertising units successively and means for transferring from the display of said advertising units to the display of said printed record, said means operating only at a predetermined point in said cycle.

10. In a display device, a printer for producing a printed record, a plurality of advertising units, means operable over a predetermined cycle for displaying said advertising units successively and means initiated into operation by said printer for transferring from the display of said advertising units to the display of said printed record, said transfer being completed only at a predetermined point in said cycle.

11. In a display device, a printer for producing a printed record, a plurality of advertising units, means for displaying said printed record and said advertising units alternately, means for transferring from said advertising display to the display of said printed record, a timing device for determining the minimum period of display of said printed record and means for setting said timing device to its initial position whenever said transfer occurs.

12. In a display system, a telegraph printer for producing a printed record, a signalling line for said printer, a display device for advertising matter, means for displaying said advertising matter and said printed record alternately, means controlled by signals received over said line for transferring from the display of advertising matter to the display of said printed record and means controlled by a predetermined line condition for interrupting the display of both the advertising matter and the printed record.

13. In a display system, a telegraph printer for producing a printed record, a signalling line therefor, means for producing an image of said printed record in enlarged form, a plurality of advertising units, means for producing an image of said advertising units in enlarged form, means for operating said image producing means alternately, and means controlled by line conditions for interrupting the operation of both of said image producing means.

14. In a display system, a telegraph printer for producing a printed record, a signalling line therefor, means for producing an image of said printed record in enlarged form, a plurality of advertising units, means for producing an image of said advertising units in enlarged form, and means controlled by line conditions for interrupting the operation of either or both of said image producing means.

15. In a display device, a telegraph printer for producing a printed record, means for displaying said printed record, an advertising display device, means for changing the advertising display at predetermined intervals, means for interrupting the display of said printed record during the display of said advertising matter and means controlled by the printer for starting the display of said printed record and interrupting the advertising display, said last means being operative only at the time of changing of said display.

16. In a display device, a telegraph printer for producing a printed record, means for displaying said printed record, an advertising display device, means for changing the advertising display at predetermined intervals, means for interrupting the display of said printed record during the display of said advertising matter and means for subsequently starting the display of said printed record and interrupting the advertising display, said last means being operative only at the time of changing of said advertising display.

17. In a display device, a telegraph printer for producing a printed record, a signalling line therefor, means for displaying said printed record, an advertising display device, means for changing the advertising display at predetermined intervals, means for interrupting the display of said printed record during the display of said advertising matter and means controlled by line conditions for again starting the display of said printed record and interrupting the advertising display, said last means being operative only at the time of changing of said advertising display.

18. In a display device, a telegraph printer for producing a printed record, means for displaying said printed record, an advertising display device, means for changing the advertising display at predetermined intervals, means for interrupting the display of said printed record during the display of said advertising matter and means operating after the printing of a predetermined number of lines of said record for starting the display of said printed record and interrupting the advertising display, said last means being operative only at the time of changing of said advertising display.

19. In a display device, a telegraph printer for producing a printed record, means for displaying said printed record in enlarged characters, an

advertising display device, means for changing the advertising display at predetermined intervals, means for interrupting the display of said printed record during the display of said advertising matter and means controlled by the printer for starting the display of said printed record and interrupting the advertising display, said last means being operative only at the time of changing of said advertising display.

20. In a display device, a telegraph printer for producing a printed record, means for displaying said printed record in enlarged characters, a plurality of advertising units, means for displaying said advertising units in enlarged form, means for changing the advertising display at predetermined intervals, means for interrupting the display of said printed record during the display of said advertising matter and means controlled by the printer for starting the display of said printed record and interrupting the advertising display, said means being operative only at the time of changing of said advertising display.

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