

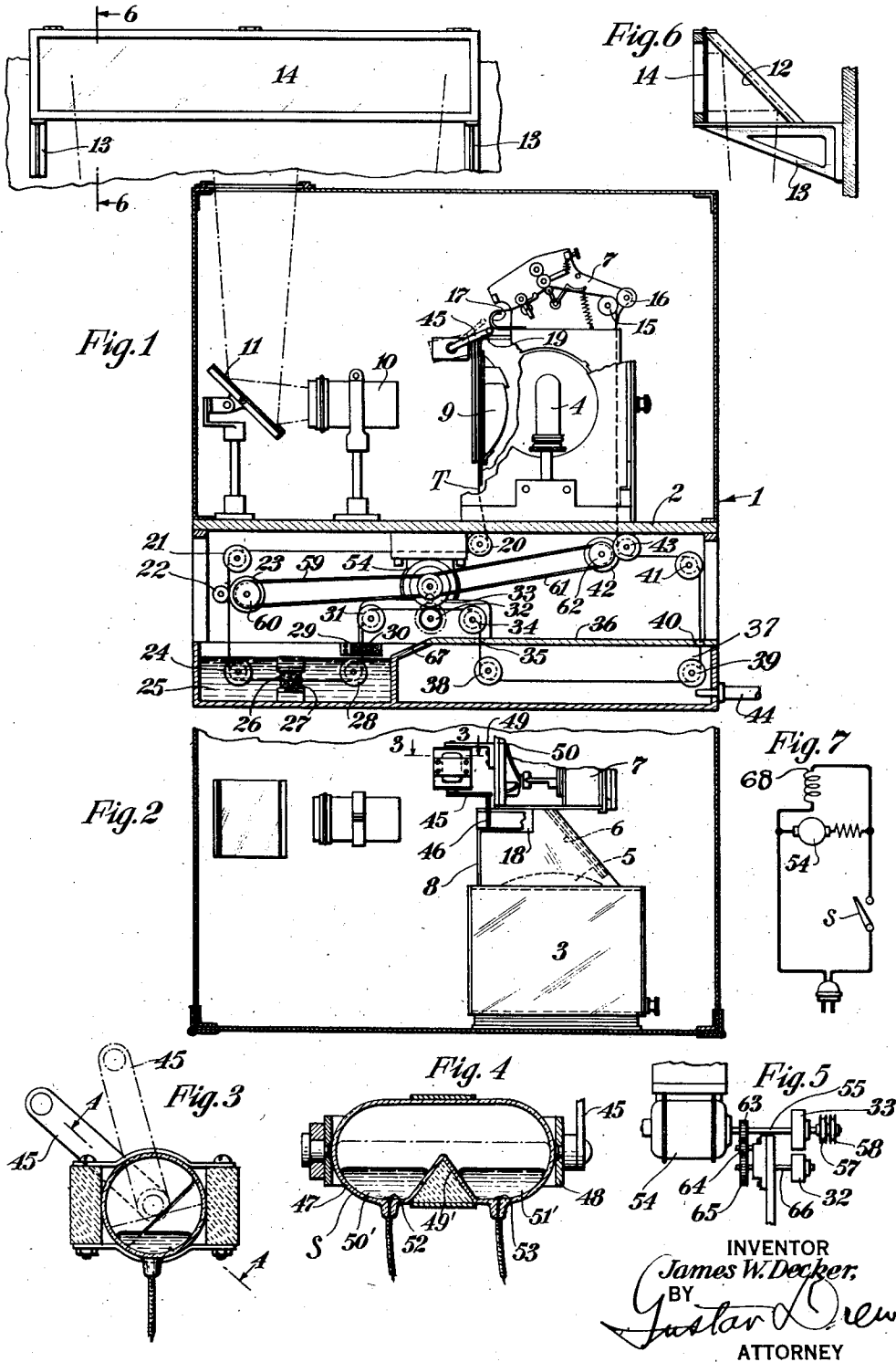
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J. W. DECKER

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TAPE CONTROL AND TAPE TREATING MEANS

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JAMES W. DECKER, OF NEW YORK, N. Y.

TAPE CONTROL AND TAPE TREATING MEANS

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This invention relates to projecting machines in general and more especially to improvements for controlling ticker tape and for treating ticker tape of news projecting machines.

Among the objects of the present invention it is aimed to provide an improved device whereby an endless ticker tape can be used with a news projecting machine.

It is also an important object of the present invention to provide an automatic switch or escapement whereby the drawing means for drawing the tape or taking up the tape as it is delivered from the projecting mechanism is automatically arrested after the ticker feed mechanism comes to rest, so that the tape located in the projecting position may at all times be maintained under tension for efficient projection and yet no undue tension or strain be exercised on the tape after the ticker tape is arrested, and at the same time a saving in electric current be effected in that the motor will be operating only when the drawing means is required to operate.

It is still a further object of the present invention to provide a device in which an endless tape can be used with a projecting machine whereby no torsional strains will be exercised on the tape as is the case when the tape is twisted in a spiral direction.

These and other features, capabilities and advantages of the invention will appear from the subjoined detail description of one specific embodiment thereof illustrated in the accompanying drawings, in which

Figure 1 is a fragmental side elevation of the device partly in section;

Fig. 2 is a fragmental plan of the device;

Fig. 3 is a section on the line 3—3 of Fig. 2;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is an enlarged fragmental detail showing the motor and driving connections;

Fig. 6 is a section on the line 6—6 of Fig. 1;

Fig. 7 illustrates the wiring for the motor.

In the embodiment illustrated there is shown a housing 1 having a platform 2. On the platform 2 to the right and near side thereof, there is formed a lamp housing 3 provided for the lamp 4 and provided with a lens 5 in its far wall to direct the rays of the

lamp 4 to the inclined mirror 6 secured to the housing 3 and extending to the near side of the lower end of the ticker 7. To the left of the mirror 6 there is provided a wall 8 having an opening therein, to the right end of which is secured the lens 9 to receive the rays from the inclined mirror 6 and project it on and through the tape T, which is caused to pass in front of said lens 9 whereby the images of the characters on said tape T are projected to the lens positioned in the lens housing 10 by which the rays are further directed to the mirror 11 and from said mirror 11 directed to the mirror 12 supported on the brackets 13, from which mirror 12 the images are directed to the screen 14.

The arrangement of lamp housing, ticker and projecting mirrors just described is similar to the arrangement illustrated in United States Letters Patent No. 1,666,305 issued April 17, 1928.

The present invention is directed mainly to the tape control and means for treating a ticker tape.

In the present instance, there is provided an endless tape T, although it is understood that the control means and treating means will be also effective with a non-continuous strip of tape.

The location of the endless tape will now be described. Assuming the cycle of operation to start at the ticker 7, attention is first directed to the opposing rollers 15 and 16 mounted on the right and rear end or intake side of the ticker 7 between which the tape T passes on its way to the ticker 7. The rollers 15 and 16, in the present instance, merely serve as guide rollers to locate and prevent the displacement of the tape on its way to the ticker 7. From the rollers 15 and 16, the tape T passes through the printing and feeding means of the ticker 7, which form no part of this invention and therefore will not be described in detail. From the feeding and printing mechanisms of the ticker 7 the tape T will pass over the guide plate 17 and then into the recess 18 formed above the lens 9 onto the supporting plate 19 directly above the upper end of the lens 9, and then down past the lens 9 to the guiding roller

20 located below the platform 2 and a little to the right of the plane, passing in front of the lens 9 so that the guide roller 20 will cooperate with the support 19 to assist in maintaining the tape flat against the lens 9 when passing the same.

From the roller 20 the tape T passes to the left over the roller 21 also secured below the platform 2, and from there the tape T passes down between the idler 22 and the driven feed roller 23. From the idler 22 and the feed roller 23, the tape T passes down below the roller 24 located in the bath 25, and from there between the wipers 26 and 27, and from there under the roller 28 and then out of the bath between the wipers 29 and 30, and from there over the roller 31. From the roller 31, the tape T passes over the buffing roller 32 which presses the tape against the driven feed roller 33. From there, the tape passes over the roller 34, down through the opening 35 in the upper wall 36 of the heating chamber 37 and then down under the roller 38 in the heating chamber 37, and from there to the right under the roller 39, and then out through the opening 40 in the upper wall 36 of the heating chamber 37 to, and over the roller 41, and then to the left into engagement with the driven feed roller 42, and then between such feed roller 42 and the idler 43. From such feed roller 42 and idler 43, the tape passes up through the platform 2 back to the idlers 15 and 16.

The arrangement between the ticker 7 and the lens 9 including the bracket 17 is similar to that illustrated in United States Letters Patent No. 1,666,308 issued April 7, 1928. With certain types of ink, the solution of the bath 25 may be ordinary water. With other types of ink, it is desirable to dissolve a small percentage of tetrachloride or the like. The heating chamber 37 is preferably provided with a nozzle 44 for supplying hot air to the same.

In the present instance, the space between the bracket 17 and the supporting plate 19 is also used to permit a loop to be formed in the tape T for the purpose of absorbing and dissipating the vibrations transmitted to the tape T by the feeding impulse of the ticker feed mechanism. In the present instance, a lever 45 has a finger 46 extending at right angles thereto and normally resting on the tape T to deflect the tape T out of its path of movement from the bracket 17 to the support 19 into the space between such bracket 17 and support 19. The fixed end of the lever 45 is secured to the axis of the tube 47 of the mercury switch which is pivotally mounted in the frame 48 which is connected by the bracket 49 to the bracket 50 on which the ticker 7 is mounted. The mercury switch used in the present instance is of the type having a projection 49' extending between two

troughs 50' and 51' so that when the lever 45 is raised into the dash and dot line indicated in Fig. 3 the projection 9' will separate the fluid mercury into two sections so that the contacts 52 and 53 through the division of the fluid mercury will have the contact broken, and in turn when the lever 45 is swung into the full line position indicated in Fig. 3, the fluid mercury will form an undivided bath through which the current may pass from one contact 52 to the other contact 53. The conductors from the contacts 52 and 53 are connected in the usual way with the motor 54.

The motor 54, see Fig. 5, is provided with a shaft 55 having formed thereon the feed roller 33 and also the sheaves 57 and 58. The sheave 57 by means of the spring belt 59 is connected to the sheave 60 operatively connected to the driven feed roller 23. The sheave 58 is connected by the spring belt 61 with the sheave 62 of the driven feed roller 42.

The shaft 55 also has formed thereon the pinion 63 in mesh with the pinion 64, which in turn is in mesh with the pinion 65 on the shaft 66. The shaft 66 has mounted thereon the buffer 32. It will be noted, that the buffer 32 is driven in the same direction as the feed roller 33 and driven at a lower rate of speed. It will also be seen that the left end of the upper wall 36 of the heating chamber is inclined downward at 67 so that any drippings that are wiped off by the buffer 32 will drip onto the inclined portion 67 and flow back into the bath 25.

From the foregoing it will thus be seen that when the ticker feed mechanism is operating a loop is formed between the bracket 17 and the support 19, permitting the lever 45 to descend into the full line position indicated in Fig. 3 and make contact for the motor 54, at which time the feed rollers 23, 33 and 42 will be driven to draw the tape from the projecting mechanism as it is delivered therefrom, and that the buffer 32 will rotate in the same direction as that of the feed roller 33, but being in engagement with the lower face of the tape T, will exercise a wiping action on the tape in the opposite direction to its direction of movement. The lower face of the tape T at its location in engagement with the buffer 32 is the face which receives the print from the printing mechanism. By means of the feed roller 42 being located beyond the heating chamber and just beneath the idlers 15 and 16, it will cooperate with the idler 43 and in turn with the idlers 15 and 16 to permit the slack in the tape to be formed below the idlers 15 and 16 so that the tape will be free to be drawn into the ticker 7 in the usual way. It will also be seen that by this arrangement of control the tape will be maintained taut at all times at the projecting location. In other words, as soon as the ticker operates, feeding the tape to the lever 45, a

loop is formed and the lever 45 will press the tape into engagement with the support 19 and at the same time cause the motor 54 to be operated; in turn to cause the feed roller 23 to be driven. Thereby, the feed roller 23 will cooperate with its opposing idler 22 and also the idler 20 to maintain the tape taut between the support 19 and the feed roller 23, thus in turn maintaining the tape taut in the projecting position. The feed roller 42, on the other hand, will serve to cooperate with the feed roller 23 to localize the slack in the tape T so that it will be located at the place where it will do most good, that is, just below the idlers 15 and 16 in order to facilitate drawing the tape through the ticker 7.

In order to prevent overheating the motor in a period where the switch is constantly making and breaking contact, the resistance 68 is provided, which is shown suitably connected to the electric mercury switch S and the motor 54. The mercury switch serves the special purpose, in this instance, in permitting the provision of a short lever adjacent to the supporting plate 19 without any fire hazard, the spark formed during the make and break being of course enclosed by the glass tube 50 of the mercury switch S.

From the foregoing it will also be seen that the tape will at all times be maintained in a plurality of planes that are perpendicular to a common imaginary plane whereby no torsional strains will be exercised on the tape as is the case when the tape is twisted in a spiral direction.

It is obvious that various changes and modifications may be made to the details of construction without departing from the general spirit of the invention as set forth in the appended claims.

I claim:

1. The combination with an endless tape, of a projecting machine having a horizontal light aperture, ink removing means, a ticker printing and feeding means for forming impressions on said tape and imparting a feeding action to said tape after completing a predetermined printing action, tape drawing means for imparting a drawing action on said tape as said tape is fed by said feeding means, and guide means whereby the tape is caused successively to receive printed matter, project the same, and have the same removed while passing through successive planes that are perpendicular to a common imaginary plane.

2. The combination with a tape, of a projecting machine, a ticker printing and feeding mechanism for forming an impression on said tape and feeding the same an interval of distance after the completion of each predetermined printing action, tape drawing means for drawing said tape through said projecting machine, a motor for actuating said drawing means, an electric fluid mercury

switch, and a lever insulated from said switch but fixed to said switch and in engagement with said tape, said lever being sensitive to the tension in said tape to operate said switch to make contact when said ticker functions and operable to break contact when said ticker ceases to function, said electric mercury switch being connected to control the operation of said motor.

3. The combination with a tape, of a projecting machine, a ticker printing and feeding mechanism for forming an impression on said tape and feeding the same an interval of distance after the completion of each predetermined printing action, tape drawing means for imparting a drawing action on said tape, a motor for actuating said drawing means, there being a space formed between said ticker and said projecting machine, a lever for deflecting the tape into said space to form a loop when said ticker is operating, and an electric fluid mercury switch insulated from, but connected to, said lever and operable to make contact when said ticker functions, said mercury switch being connected to control the operation of said motor, said drawing means cooperating with said ticker to take up said loop when said ticker ceases to operate thereby to actuate said lever in turn to break the contact and thus cause said motor and said drawing means to be arrested.

4. The combination with a ticker tape, of a projecting machine; a ticker; tape drawing means for drawing said tape from said ticker through said projecting machine; a motor for actuating said drawing means; a pivotally mounted bracket; a lever operatively associated with said tape and between said ticker and said projecting machine to actuate said bracket according to the slack in said tape; a fluid mercury switch mounted on said bracket consisting of a container secured to said bracket, fluid mercury in said container, and contacts associated with said container to be electrically connected by the fluid mercury when said bracket is swung into one position and to be electrically disconnected when said bracket is swung into another position; and conductors connecting said contacts with said motor and a source of current supply.

5. The combination with a ticker tape, of a projecting machine, a ticker, tape drawing means for drawing said tape from said ticker through said projecting machine, a pivotally mounted bracket, a lever operatively associated with said bracket and resting on said tape between said ticker and said projecting machine to be raised and lowered according to the operation of said ticker, an electric fluid mercury switch operatively mounted on said bracket for controlling the tape drawing means according to the operation of said ticker, said mercury switch consisting of a

tubular glass container mounted on said bracket to rock with said bracket about the axis of said tubular container, contacts formed in said container, a depression formed between said contacts and fluid mercury in said container to connect said contacts when said bracket and container is swung into one position by said lever and to be divided by said depression to disconnect said contacts when said bracket and container is swung into another position by said lever.

6. The combination with a ticker tape, of a projecting machine; a ticker; tape drawing means for drawing said tape from said ticker through said projecting machine; a motor for actuating said drawing means; a pivotally mounted bracket; a lever operatively associated with said tape to actuate said bracket according to the slack in said tape; a fluid mercury switch mounted on said bracket consisting of a container secured to said bracket, fluid mercury in said container, and contacts associated with said container to be electrically connected by the fluid mercury when said bracket is swung into one position and to be electrically disconnected when said bracket is swung into another position; and conductors connecting said contacts with said motor and a source of current supply.

7. The combination with a ticker tape, of a projecting machine; a ticker; tape drawing means for drawing said tape from said ticker through said projecting machine; a motor for actuating said drawing means; a fluid mercury switch consisting of a pivotally mounted container, fluid mercury in said container and contacts associated with said container to be electrically connected by the fluid mercury when swung into one position and to be electrically disconnected when swung into another position; a device operatively associated with said tape and container to actuate said container according to the deflection in said tape; and conductors connecting said contacts with said motor and source of current supply.

JAMES W. DECKER.

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