Sept. 26, 1939. A. D. EITZEN 2,173,831

CUTTING DEVICE FOR STOCK QUOTATION PROJECTION MACHINES

Filed May 1, 1937 2 Sheets-Sheet 1

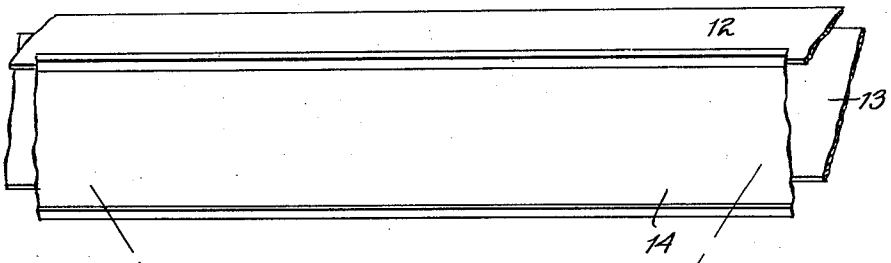
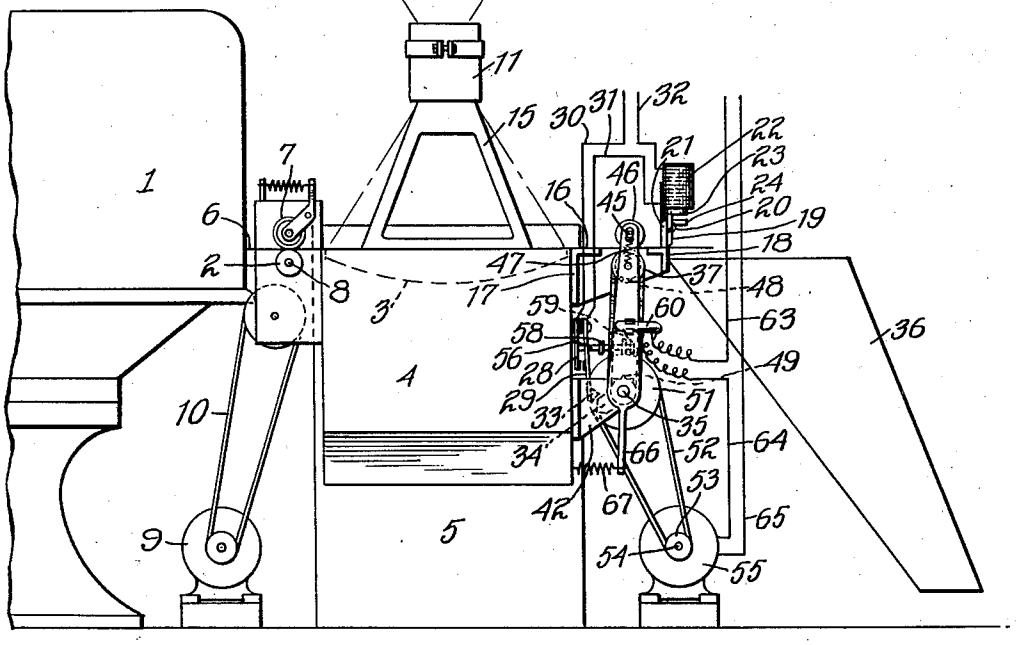


Fig. 1.



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Fig. 2.

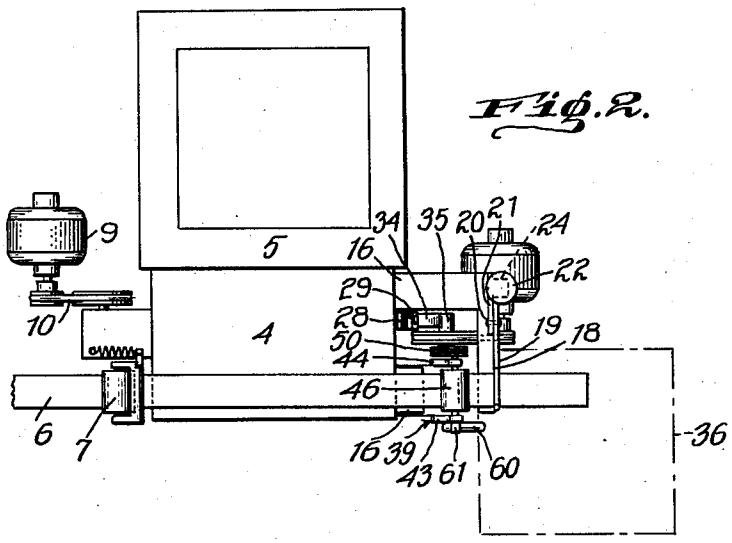


Fig. 3.

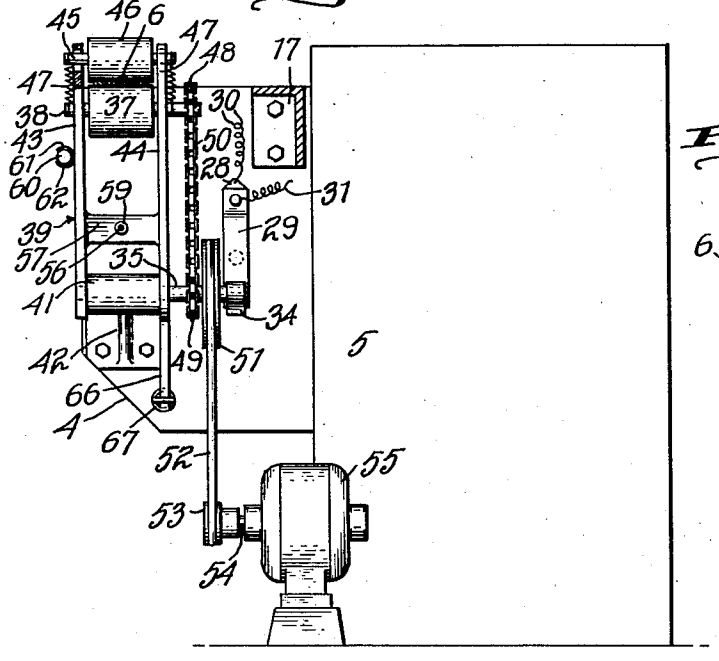
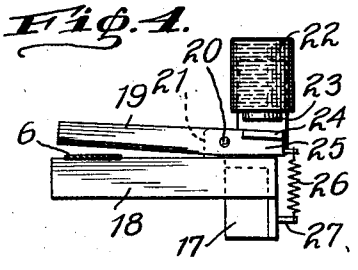


Fig. 4.



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CUTTING DEVICE FOR STOCK QUOTATION PROJECTION MACHINES

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Application May 1, 1937, Serial No. 140,198

4 Claims. (Cl. 164—49)

This invention relates to stock quotation projection machines in general.

Among the objects of the present invention, it is aimed to provide an improved stock quotation projection machine including means for quickly and expeditiously disposing of the tape as it is used, whereby a rewind reel may be dispensed with, comprising tape advancing means both at the entrance and discharge ends of the light aperture which cooperate with the disposing means.

It is another object of the present invention specifically to provide an improved stock quotation projection machine having a light aperture and means for disposing of the tape as it is passed over the light aperture including an intermittent tape advancing device at the discharge end of the light aperture to cooperate with and control said tape disposing means.

It is still another object of the present invention to provide an improved take up at the discharge end of the light aperture which will effectively cooperate with the continuously operating advancing device at the entrance end of the light aperture to compensate for any variation in paper stock and for any variation in weather condition and the like.

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 front elevation of a stock quotation projection machine made according to the present invention;

Fig. 2 is a plan view of a part thereof:

Fig. 3 is an enlarged fragmental end elevation partly in section; and

Fig. 4 is an enlarged fragmental detail of a part thereof.

In the embodiment shown, there is provided a ticker 1 preferably of the high speed type extensively in use today from which the tape passes to and over the continuously rotating tape advancing roller 2 at the entrance to the light aperture formed adjacent the condensing lens 3 at the upper end of the extension 4 of the lamp housing 5.

The tape 6 as it leaves the ticker 1 is pressed by the pressure roller 7 into advancing engagement with the roller 2 and thereupon advanced to the condensing lens 3. Preferably when a continuously operating advancing roller is so positioned at the discharge end of the ticker 1, the ordinary tape feed of the ticker 1 is disabled so that the tape may be continuously advanced through the ticker 1.

It has been found, as an instance, that especially with the high speed tickers today used, the tape can so be continuously advanced through the ticker without interfering with the printing impressions due to the combination of circumstances well known in the practice.

The advancing roller 2 in the present instance is mounted on the shaft 8 which is drivingly connected with the motor 9 by means including the belt 10. The condensing lens 3 in the present instance constitutes a support for the tape 6 through which the light rays pass from a source of light in the lamp housing 5 to produce image impressed light rays which are received by the objective lens unit in the casing 11 and then directed upwardly onto the reflector 12, then onto the reflector 13 and finally onto the rear of the screen 14 to appear as legible characters on the outside of the screen 14. The casing 11 is connected in the usual way to a bracket 15 which extends upwardly from the extension 4.

At the end of the extension 4, there is provided a platform 16 forming a continuation of the support provided by the condensing lens 3, this platform 16 preferably having a downward extension 17 which is connected to the side of the extension 4. The discharge end of the platform 16 is provided with a downwardly extending ledge 18 to cooperate with the knife blade 19 to perform a shearing action for snipping or cutting the tape 6 into small pieces as it is fed thereto.

The knife 19 is pivotally connected at 20 to the frame 21 to which there is also connected the electro-magnet 22 with its core 23 in position to attract the lip 24 formed on the extension 25 of the knife 19. The outer end of the extension 25 is connected by the spring 26 to an abutment 27 secured to the bracket 21. From the foregoing, it will be seen that the knife 19 will be caused to descend during shearing action with the ledge 18 when its lip 24 is attracted by the core 23 of the electromagnet 22 and that when the electromagnet 22 is deenergized the spring 26 will return the knife blade 19 out of cutting position.

The electromagnet 22 is intermittently actuated. For this purpose, an electric switch having the fixed contact 28 and the movable contact 29 is provided. One of the contacts 28 is connected to the source of current supply not shown by the main lead 30 and the other contact 29 is connected to the electromagnet 22 by the conductor 31, the electromagnet 22 in turn being connected to the current supply by the

other main lead 32. The movable contact 29 is in the present instance provided with an extension having a projection 33 thereon in the path of movement of the projection 34 formed on the shaft 35 so that once for every revolution of the shaft 35, the contacts 28 and 29 will be closed to energize the electromagnet 22 in turn to actuate the knife blade 19. In order to collect or receive the paper strips cut off by the knife 19, there is provided the hopper 36 which may be in communication with a waste paper basket or the like.

When a tape is advanced across the light aperture by a tape advancing device at the entrance to the light aperture, it is desirable as a rule to have some means for taking up the tape as it leaves the light aperture. Due, however, to the fact, that it is practically impossible to obtain two successive feed rollers which will at all times impart the same predetermined advancing force to a tape, especially when the tape itself changes its physical characteristics according to the amount of humidity in the air and the temperature of the same and furthermore is not uniform in thickness or composition as it is delivered from the mill, considerable difficulty has been encountered in providing an efficient take up.

The object of the present take up is to overcome this difficulty. Here an intermittently actuated take up is provided whose speed will be materially modified by the tape itself and by the speed theretofore imparted to the tape itself. This take up consists of a driven roller 37 mounted on the shaft 38 and journaled in the swinging frame 39. The frame 39 is pivotally connected to swing about the shaft 35 journaled in the bearing 41 constituting a part of the bracket 42 secured to the side of the extension 4.

The roller 37 is normally positioned to engage the lower face of the tape 6 in the opening formed in the platform 16. In the upper ends of the side bars 43 and 44 of the frame 39, there is journaled the shaft 45 of the pressure roller 46, the ends of which shaft 45 are connected by the springs 47 with the shaft 38, resiliently to press the roller 46 and in turn the tape 6 into feeding or advancing engagement with the roller 37.

The shaft 38 of the roller 37 has fixed thereon the sprocket wheel 48 which is connected to the sprocket wheel 49 on the shaft 35 by the sprocket chain 50. On the shaft 35, there is also fixed the pulley 51 which is connected by the belt 52 with the pulley 53 on the shaft 54 of the motor 55.

In order to limit the swing of the bracket 39, there is provided the rod 56 extending from the extension 4 through the connecting bar 57 of the bracket 39 and which rod has a limiting stop 58 on one side of the bar 57 and another limiting stop 59 on the other side of the bar 57.

In order to interrupt the current of the motor 55 and thereby the actuation of the drive roller 37 when the bracket 39 is swung toward the light aperture and preferably before engaging the stop 58, there is provided the mercury switch 60, the tube of which is connected to the outer face of the arm 43 by the spring fingers 61 and 62 and the contacts of which are connected to the conductors 63 and 64, the conductor 63 constituting one of the main leads connected to the source of current supply not shown and the other conductor 64 being connected to the motor 55 and the motor in turn being connected to the conductor 65 constituting the other main lead to the source of current supply.

The lower end of the arm 44 of the bracket 39 is preferably provided with an extension 66 which is connected by the spring 67 to the side of the extension 4 so that when the bracket 39 is swung toward the light aperture, the spring 67 in turn will return the bracket to its outermost position where the mercury switch 60 will again close the circuit and permit the motor 55 again to start operating and in turn cause the drive roller 37 again to start exercising its advancing force on the tape 6.

It will be apparent from the foregoing that when the bracket 39 is swung into its outermost position and the switch is so closed due to the fact that the surface speed of the roller 37 after it has again attained full speed is faster than the advancing speed imparted to the tape 6 by the roller 2, the following will ensue:

The roller 37 with the idler 46 will cooperate with the tape to move toward the light aperture and thereby at the same time move the bracket 39 around the shaft 35.

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 of a support, a constantly operating tape advancing means at the entrance end of said support, an intermittently operating tape advancing means at the discharge end of said support consisting of a pivotally mounted bracket, a driving roller at one end having a normal surface speed faster than that of said first advancing means, a motor for actuating said driving roller, a circuit including a switch operable to interrupt the circuit when said bracket is swung toward said support, a spring for swinging said bracket away from said support and into position for again closing said switch, and means for engaging and destroying the tape after it leaves said intermittently operating tape advancing means not only serving to draw the tape toward said destroying means and thus prevent any interruption of the tape movement by said destroying means but also serving to prevent the transmission of vibrations back to the tape at said support by said destroying means.

2. The combination of a support, a uniform operating tape advancing means at the entrance end of said support, a second tape advancing means at the discharge end of said support, means for periodically interrupting the operation of said second tape advancing means to enable it to synchronize its tape advancing force with that of the first tape advancing means, and means for engaging and destroying the tape after it leaves said second tape advancing means, said second tape advancing means not only serving to draw the tape toward said destroying means and thus prevent any interruption in the tape movement by said destroying means but also serving to prevent the transmission of vibrations back to the tape at said support by said destroying means.

3. The combination of a support, a uniform tape advancing means at the entrance end of said support, a second tape advancing means at the discharge end of said support having a normal surface speed faster than that of said first tape advancing means, means for periodically interrupting the operation of said second tape advancing means whereby the intermittent arrest

and start before arriving at full speed will compensate for the difference in speed imparted to the tape by said two tape advancing means, and means for cutting the tape into small pieces after it leaves said second tape advancing means, said second tape advancing means not only serving to draw the tape toward said cutting means and thus prevent the interruption of the tape movement by said cutting means but also serving to prevent the transmission of vibrations back to the tape at said support by said cutting means.

4. The combination of a support, a uniform operating tape advancing means at the entrance end of said support, a second tape advancing means at the discharge end of said support including a bracket, a driven roller journaled in said bracket, a roller frictionally holding the tape in driving engagement with said driven roller, a motor, driving connections connecting said motor to said driven roller to impart a faster surface speed to the tape than the speed imparted to the tape by said first tape advancing means, said bracket being pivotally mounted to oscillate to and from said support within certain predetermined limits, said driven roller when actuated cooperating with the tape to oscillate toward said support, means for interrupting the current of said motor when said bracket has swung toward said support to a predetermined limit, a spring for returning said bracket to its outermost predetermined limit, and means for engaging and destroying the tape after it leaves said second tape advancing means not only serving to draw the tape toward said destroying means and thus preventing the interruption of the tape movement by said destroying means but also serving to prevent the transmission of vibrations back to the tape at said support by said destroying means.

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