Nov. 25, 1930. J. H. CHIDESTER 1,783,008

TICKER TAPE CONTROL

Filed July 23, 1927

Fig. 1.

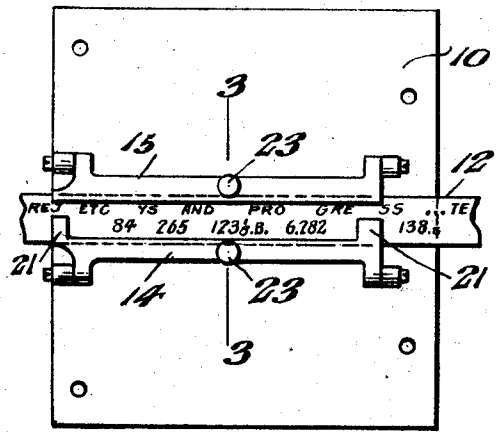


Fig. 2.

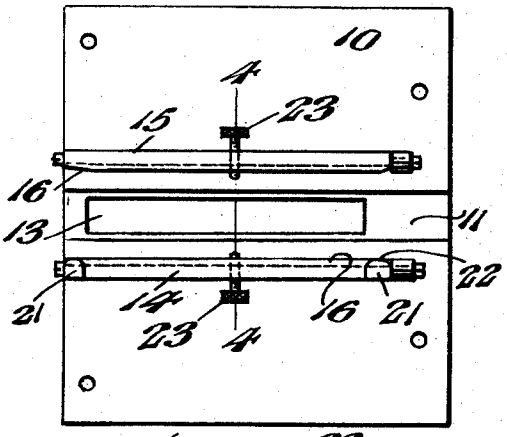


Fig. 3.

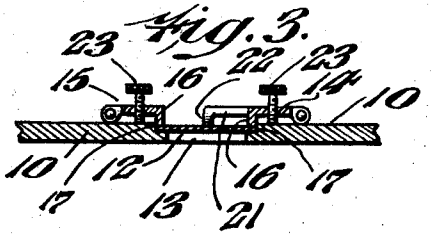


Fig. 4.

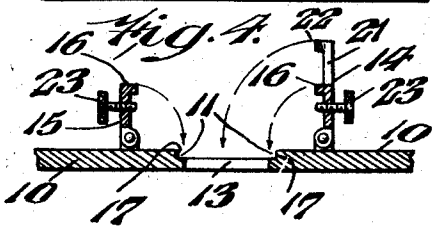
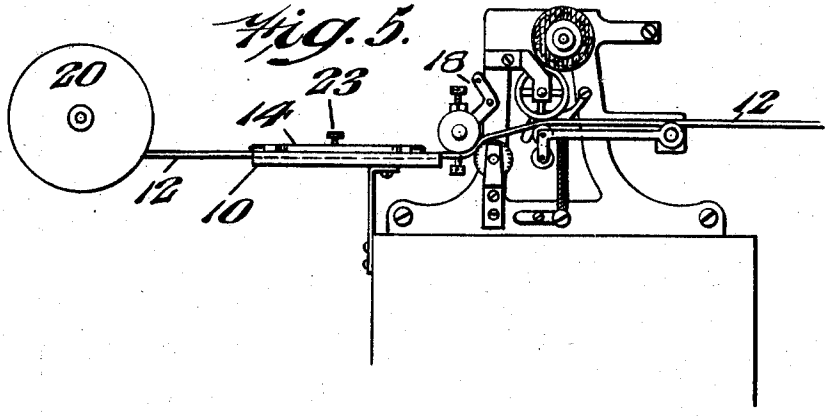


Fig. 5.



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UNITED STATES PATENT OFFICE

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TICKER-TAPE CONTROL

Application filed July 23, 1927. Serial No. 208,035.

The present invention relates to tape feeding devices and more particularly to a control for ticker tape for ensuring unwavering steady tape feed.

In tape feed mechanisms of the character where an enlarged image of the tape is projected upon a screen, such for example as the projection of the tape of a ticker machine for news and stock quotations, it is essential that the image move without jerking or wavering movement so that it can be easily and quickly read. In projection apparatus heretofore in use the feed of the tape due to the intermittent stopping and starting of the ticker is irregular and subject to side to side as well as end to end vibration which makes it very difficult and tiring to read the characters and quotations upon the tape.

By the present invention the foregoing objectionable operation and disadvantage has been overcome and therefore some of the objects of the present invention are to provide an improved control for tape feeding mechanisms; to provide means for preventing vibration of a ticker tape during its feeding movement; to provide means for passing a tape across the path of a projection apparatus so that while exposed to such apparatus it will have a uniform unwavering movement; to provide an adjustable control for a tape whereby its feed can be regulated according to requirements and different tape materials; to provide a tape feed control which allows easy access to the tape whenever necessary; to provide a tape feed control which remains operative in case the automatic tape winding mechanism becomes inoperative; and to provide other improvements as will hereinafter appear.

In the accompanying drawings Fig. 1 represents a plan of a tape feed control embodying one form of the present invention; Fig. 2 represents the same with the control members in tape receiving position; Fig. 3 represents a section on line 3—3 of Fig. 1; Fig. 4 represents a section on line 4—4 of Fig. 2; and Fig. 5 represents a side elevation of the device and associated ticker and winding mechanisms.

Referring to the drawings, one form of the present invention consists of a plate 10 or other supporting element having a transversely disposed groove 11 to receive and guide a ticker tape 12 or other movable tape having characters, informative data, or any other printed or written matter to be read therefrom. The guide groove 11 has a width designed to snugly accommodate the width of the tape so that the latter is held against side movement relative to the plate 10 but allowing free endwise travel in one direction of the tape 12 relative to the plate. In the form of the invention here illustrated by way of example the bottom of the groove 11 is formed with a slot 13 of a length to expose a suitable length of the tape to the light rays of a projecting apparatus in order to illuminate the tape to give an image of the tape upon a screen or other surface. Such slot 13, however, is not a part of the present invention, and the tape guide and its adjuncts operate just the same when the groove 11 has a solid bottom in which case the tape can be reflected by the aid of mirrors to the screen or point of observation.

For the purpose of preventing vibration and irregularities in the feed of the tape from being apparent in that part of the tape passing through the groove 11, two control strips 14 and 15 are pivoted or hinged respectively at opposite sides of the groove 11 and parallel thereto, each being provided with a friction flange 16 extending lengthwise thereof and seating on the bottom of the groove 11 in close proximity respectively to the groove side walls 17. When the tape 12 is positioned in the groove it is prevented from side to side slip by the wall 17 while end to end slip is prevented by the friction pressure of the flanges 16 which rest on the edges of the tape but do not interfere with the desired feeding of the tape under the action of the ticker 18 and wind off mechanism 20. This frictional holding of the tape 12 at its side edges is preferably augmented by a pair of fingers 21 extending from the strip 14 and terminating, over the medial line of the tape, in presser feet 22 which are so proportioned with respect to the depth of the flanges 16 as to simultaneously seat upon

the surface of the tape. Thus there is an even pressure exerted upon the tape at both side edges and at the middle thereof with the desired result that the tape moves steadily and is not subject to the jerking motions forward and backward or side to side which are ordinarily caused by the variations in the feed due to stopping and starting of the ticker feeding mechanism.

In order to adjust and vary the pressure of the gravity-held strips 14 and 15 each is provided with a thumb screw 23 which passes through its strip to bear against the top of the plate 10. By turning these screws 23 in one direction the flanges 16 and feet 22 are moved away from the bottom of the groove 11 to diminish the holding pressure, and by turning them in the opposite direction the flange 16 and feet 22 are brought nearer to the bottom of the groove 11 and hence increase the holding pressure.

In the operation of the feed control device, the strips 14 and 15 are lifted to the position shown in Fig. 4, or entirely thrown back if desired, the tape 12 is then placed in position in the groove 11 and the strips 14 and 15 swing down to the operating position of Fig. 3 with the flanges 16 resting on the sides of the tape while the feet 22 rest at two middle portions of the tape. With the parts so arranged the friction of the strips 14 and 15 is tested by drawing the tape through its guide groove 11 and the thumb screws 23 are adjusted to provide the desired resistance to the movement of the tape. This test can be done by actually running the ticker 18 and the wind-on spool 20 or by hand pulling of the tape, but once the proper adjustment is made the screws 23 are left in adjusted position and the device thereafter performs its function in the desired manner. Thus while the tape leaving the ticker has a step-by-step feed or an intermittent movement which tends to vibrate the tape both endwise and crosswise, that portion of the tape which is frictionally held in the groove 11 cannot respond to these vibration producing variations of feed and consequently this portion of the tape when moving does so with a steady uniform movement, and when the ticker is starting and stopping this portion cannot respond to the vibrations produced in the tape which is beyond the control of the device. Furthermore, should there be a failure of the wind-on mechanism 20 to operate the tape feed need not be put out of commission, as happens in other types of tape control devices, but by slightly lessening the pressure of the screws 23 and breaking the tape between the wind-on mechanism and the control device, the tape can continue feeding without interruption in the ticker service.

It will now be apparent that a complete unitary tape feed control device has been devised wherein provision is made for the intermittent feed of a ticker tape without producing vibration or sudden jerking movements to that portion of the tape which is under observation, or exposed for projection in magnified form upon a screen, or reflected in a mirror to a point remote from the tape and its associated parts.

Having thus described my invention, I claim:

1. A ticker tape feed control comprising a member having a groove therein to receive a tape for endwise sliding movement, two gravity actuated strips hinged to said member at opposite sides respectively of said groove, a flange on each strip arranged to retain said tape against the bottom of said groove to prevent vibration of said tape while traveling through said groove, and means to adjust the pressure of said flanges upon said tape.

2. A tape feed control comprising a member having a groove therein to receive a tape for endwise sliding movement, two strips hinged to said member at opposite sides respectively, of said groove, a flange on each strip arranged to hold said tape to the bottom of said groove to prevent vibration of said tape while travelling through said groove, a finger projecting from one of said strips and terminating above the middle portion of said strip, and a foot on said finger pressing upon said tape.

3. A tape feed control comprising a member having a groove therein to receive a tape for endwise sliding movement, two strips hinged to said member at opposite sides respectively, of said grooves, a flange on each strip arranged to hold said tape to the bottom of said groove to prevent vibration of said tape while travelling through said groove, a pair of fingers projecting from one of said strips and terminating above the middle portion of said strip, and feet respectively on said fingers pressing upon said tape.

Signed at Chatham, county of Morris, State of New Jersey, this 12th day of July, 1927.

JOHN HARTFORD CHIDESTER.