

April 7, 1942.

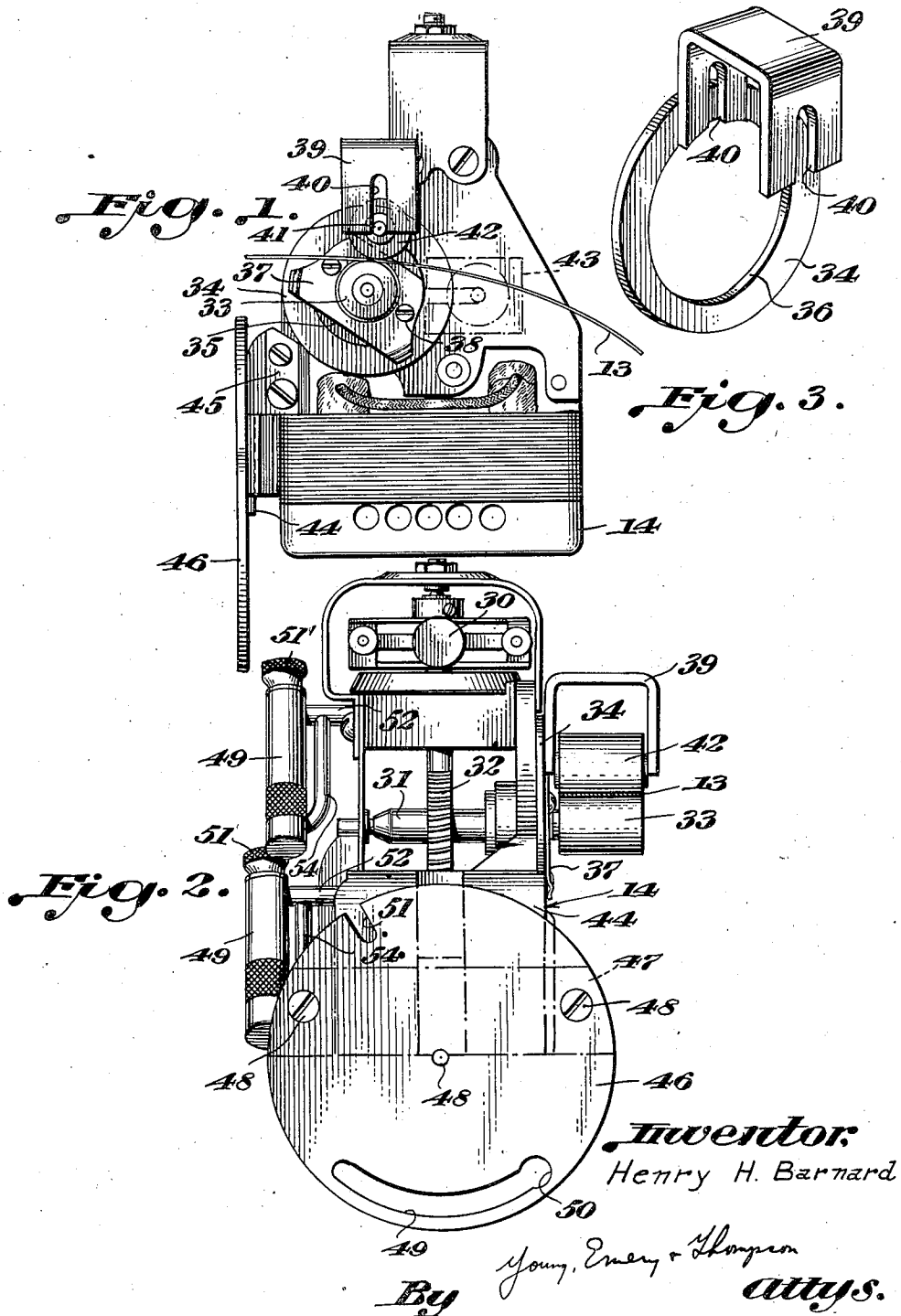
H. H. BARNARD

2,278,685

DRAWING AND OBSERVING DEVICE

Filed Nov. 30, 1940

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

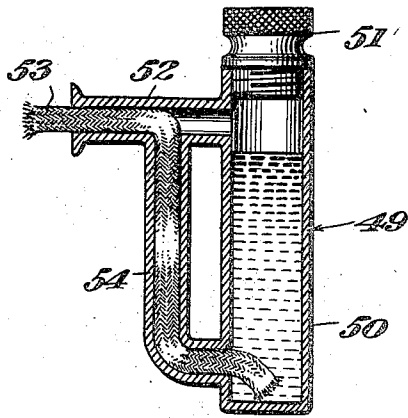


Fig. 6.

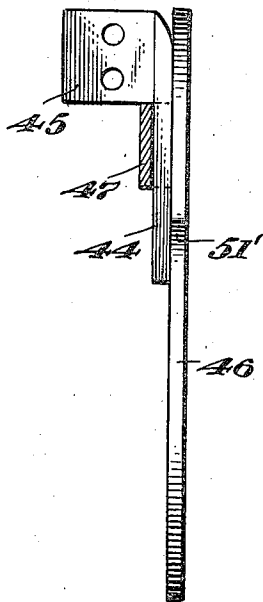
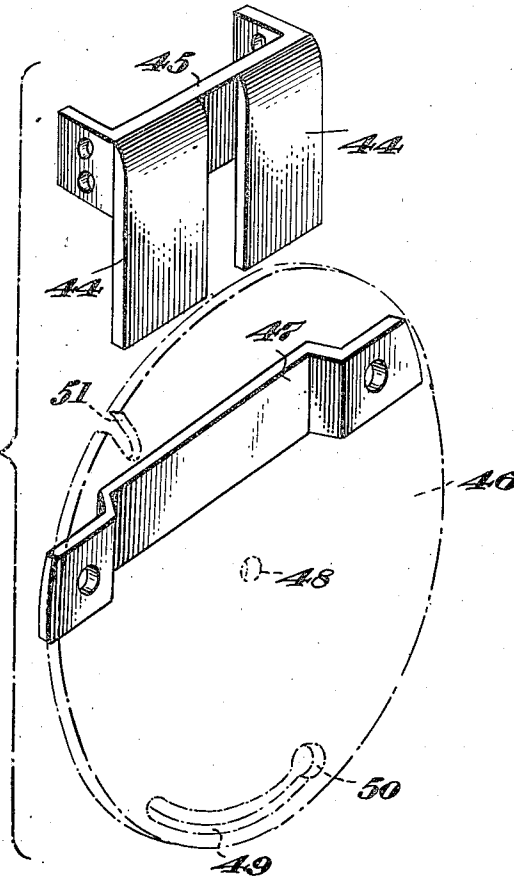


Fig. 5.

Fig. 4.



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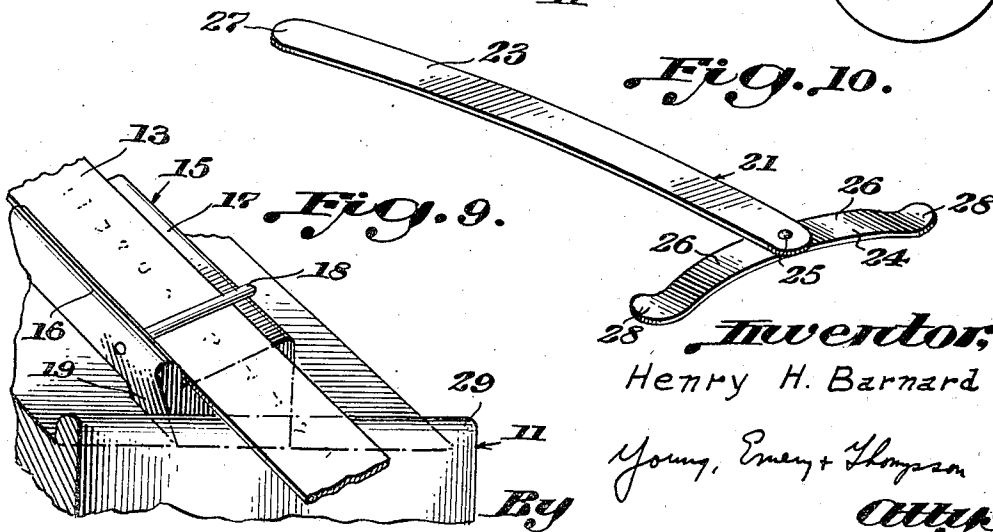
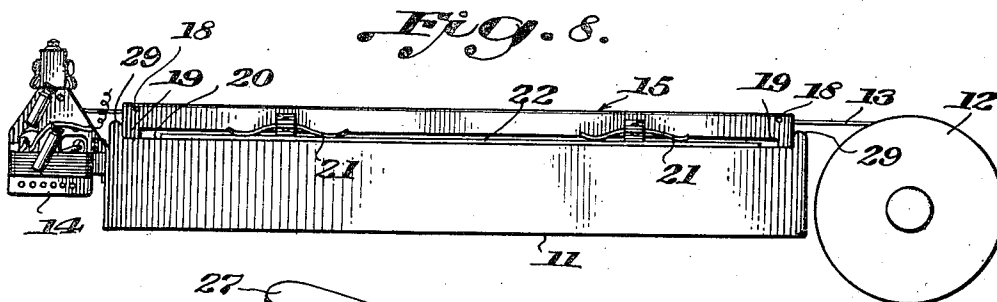
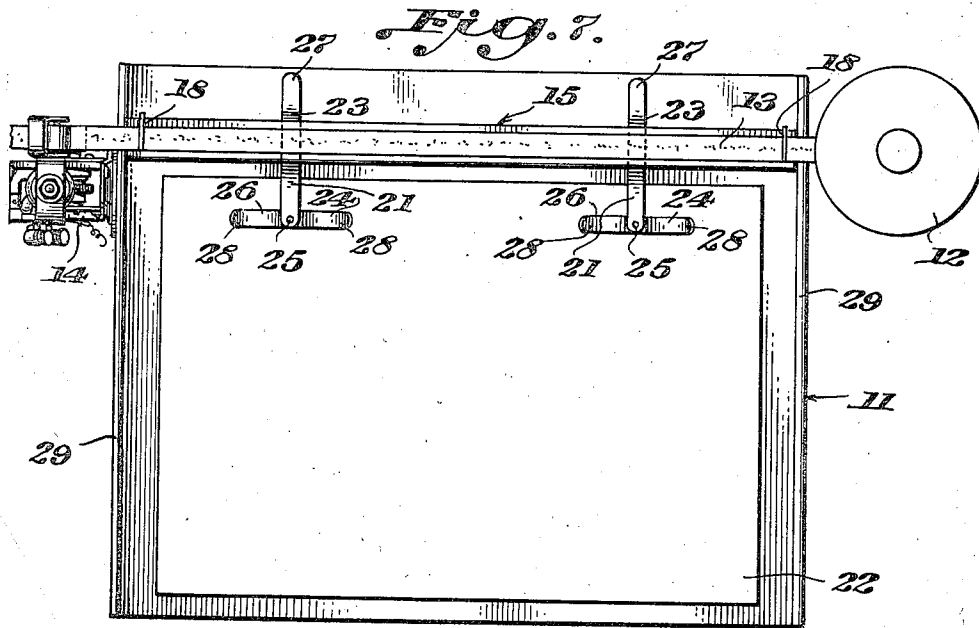
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UNITED STATES PATENT OFFICE

2,278,685

DRAWING AND OBSERVING DEVICE

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Application November 30, 1940, Serial No. 363,096

17 Claims. (Cl. 271-2.3)

The present invention relates to a drawing and observing device which can be used in general to observe and draw a tape or band along a guide rack for various purposes such as, for instance the drawing of a "ticker" tape having stock, bond or commodity quotations printed thereon. It is therefore an object of the invention to provide a means such as a desk or support for a work sheet along which the ticker tape is pulled under adjustable tension, the latter of which is sufficient to carry the tape along a guide rack as it issues from the "ticker" or printing device. A further object of the invention is to provide means for adjusting the pulling or drawing tension on the tape as it is pulled along the rack by a motor. A still further object of the invention resides in the specific motor mounting, the details of the rack, the means for removably holding a work sheet on the desk or support in cooperation with the guide rack for the tape and an oil cup for the motor.

Further objects will be apparent from the following description taken in connection with the accompanying drawings in which:

Figure 1 is an end elevation of a motor and tape tensioning and drawing device,

Fig. 2 is a side elevation of the device of Fig. 1,

Fig. 3 is a perspective view of a detail of a mounting, for an idler roller,

Fig. 4 is an exploded perspective view of the detail of the mounting for the motor,

Fig. 5 is an end view of the parts of the mounting of Fig. 4 assembled together,

Fig. 6 is a sectional view of the oil cup for the motor,

Fig. 7 is a plan view of a tape observing desk or support,

Fig. 8 is a side elevation of the desk of Fig. 7,

Fig. 9 is a perspective view of a portion of the desk of Figs. 7 and 8, and

Fig. 10 is a perspective view of the sheet holder.

Figs. 7 and 8 illustrate the general layout of the desk or support 11 which is to be used with any conventional and well known quotation receiving and printing "ticker" 12. The "ticker" tape 13 issues from the "ticker" 12 as the tape is printed and released and a prime mover or motor 14 draws the tape along a guide rack 15 extending across the width of the support 11 near the upper edge thereof. The guide rack 15 has a curb portion 16 along one edge and a flat runway or surface 17 at a slight angle relative to the horizontal, Fig. 9. The rack 15 has a pin 18 near each end of the rack received in the curb portion 16 just above the surface 17,

to guide the tape flat on the rack against the curb portion. Also the rack 15 has a support 19 at each end thereof to provide a space 20 under the rack which is for the purpose of wedging the spring holding clamps 21, Fig. 10, which serve to hold a work sheet 22 on the support 11.

The clamp 21 is composed of two flat spring members 23 and 24 both of which are bowed and pivoted together by a pin or rivet 25. The arm portion 23 is longer than the finger portion 26 and is adapted to extend under and against the under side of the rack 15 in the space 20 so that, as shown in Fig. 7, the end 27 is pressed against the support and the curved finger ends or portions 28 contact the paper with pressure. In this manner, the paper sheet 22 is held in place on the support 11.

The support 11 also has a curb 29 along two side edges but these may be dispensed with if desired.

The prime mover or motor 14, Figs. 1 and 2, is speed controlled by a governor 30 and can comprise any suitable type or construction, such as a well known electric motor for rotating the turn tables of talking machines. The motor 14 has a driven shaft 31, driven by a helical gear 32, and a drive roller 33 is mounted on the outer end thereof. The roller 33 is secured on the shaft 31 by any suitable means and this shaft positively drives the roller 33 at a constant speed. A flat ring-shaped disk 34, Fig. 3, is rotatably mounted on the side of the motor and is guided by a boss portion 35, Fig. 1, securely mounted on or forming a part of the frame of the motor and having a diameter which is just about equal to the diameter of the opening 36 in the disk 34 to provide a snug fit. The disk 34 is held in place on the boss portion 35 by a friction spring member 37 fastened by means of screws 38 to the boss portion.

The disk 34 is provided with an inverted V-shaped frame 39, Figs. 1 and 3, welded or otherwise secured to the side of the disk 34 and this frame has slots 40 in opposite register in the opposite legs of the frame. These slots 40 guide and accommodate the bearing portions 41, Fig. 1, on each end of a freely rotatable roller 42 which is an idler roller and rotates only when the tape 13 is moved by the drive roller 33. The function of the roller 42, which may have if desired a diameter which is approximately equal to the diameter of the drive roller 33, is to utilize its weight to force a frictional contact between the drive roller 33, and the tape 13 whereby the latter will be pulled along the rack 15 as it is inter-

mittently or otherwise released from the "ticker" 12. This idler roller 42 is adjustable from the full line position of Fig. 1 to the dot and dash line position 43 at right angles thereto by rotating the frame 39 and disk 34 on the boss 35. It will be observed that the maximum weight of the roller 42 on the tape and thus on the roller 33 is attained when the idler roller 42 is above the drive roller 33 as shown in the full line position of Fig. 1 but upon rotating the disk 34 with frame 39 and roller 42 clockwise the pressure or force of the roller 42 on the tape 13 and roller 33 gradually decreases until it is practically zero at the horizontal position which is the dot and dash line position 43, Fig. 1, due to the fact that as the force on the tape 13 and roller 33 decreases the difference is made up by the frame gradually supporting more and more of the weight of the roller 42. In the dot and dash line position 43 the total weight of the roller 42 is carried by the frame 39. Therefore, by a simple adjustment of the frame 39 the frictional contact of the tape 13 on the drive roller 33 may be instantly increased or decreased but the increase should never be such that the drive roller 33 has a tendency to place too much tension on the tape 13 so that a space skipping during printing will occur in the "ticker." Also, the rollers 33 and 42 may be perfectly smooth or if desired the peripheral surfaces, particularly the drive roller 33, may be rough or coated with a friction material.

The motor 14 is removably and adjustably mounted on the side of the support 11 opposite the side on which the "ticker" 12 is provided and for this purpose the motor has a flat plate or plates 44 welded or otherwise secured to a bracket 45, the latter of which is secured to any suitable part of the motor. These plates 44 are removably fitted between a supporting disk 46 and a holding bar 47 the latter of which is fastened to the disk by means of screws 48, Fig. 2. The disk 46 has an elongated slot 49 with an enlarged portion 50, Fig. 2, at one end and extending circumferentially a suitable distance at a short distance from the peripheral edge. There is also a diametrical slot 51 extending a short distance from the peripheral edge of the disk and these slots 49, and 51 are for the purpose of adjustably and securely mounting the motor on the side of the support 11. For this purpose suitable screws, not shown, may be provided in the slots 49 and 51 which are secured in the side of the support 11 so that the motor and disk may be angularly adjusted to an extent governed by the length of the slot 49. The disk 46 may, if desired, be secured to the support 11 by means of screws, not shown, and this disk together with the motor may be rotated around a screw passing through the center perforation 48.

The motor 14 is also provided with a number of oil cups 49, Figs. 2 and 6, each of which is so designed that it can use up its entire oil supply. As shown in Fig. 6 the cylindrical container 50 is provided at the top with a screw-threaded closure cap 51' and a substantially horizontal outlet tube 52 near the top portion of the container by means of which the oil cup may be secured to the motor. An oil wick 53 passes through the tube 52 and then down through a branch tube 54 communicating with the tube 52 and terminating near the bottom of the container, the oil of course following the wick 53 by capillary attraction.

The apparatus operates as follows: Upon the

start of a day's stock, bond or commodity market session it is only necessary to start the motor 14 which runs continuously at a constant speed to draw the "ticker" tape 13 along the rack 15 as the tape is printed and released from the "ticker" 12. It may also be necessary to adjust the frame 39 and thereby the idler roller 42 between the extreme positions shown in Fig. 1 if it develops that the roller 33 imparts too much tension in the tape 13 thereby causing spaces to appear within a printed quotation on the tape. The paper sheet 22 is placed on the support 11 and the clamps 21 are slipped in place under the rack 15 whereby the spring members 26 by means of the finger ends 28 will maintain the sheet on the support. As the tape advances intermittently but slowly along the rack the quotations of a particular stock or a group of stocks are recorded manually on the sheet 22 in vertical or horizontal rows as may be desired so that each sale price as well as the volume for the particular stock may be instantly observed which will immediately inform the observer as to the trend of the market, not only in terms of price changes, but the activity or support or non-support which may be given by the stock buyers. When the "ticker" is not printing any quotations, the drive roller 33 merely rotates in contact with the stationary tape 13 and the latter in contact with and under the influence of the weight of the idler roller 42, that is such portion of the weight of the latter which is not supported by the frame 39.

It is, of course, obvious the invention is not limited to the exact combination shown and described since sub-combinations are also to be considered as a part of the invention as governed by the scope of the appended claims.

I claim as my invention:

1. A device for drawing and tensioning a tape and the like comprising a drive roller adapted to be rotated at a constant speed, a freely-mounted idler roller cooperating with the drive roller with the tape running therebetween, means for mounting the idler roller so that it may be adjusted circumferentially around the rotary axis of the drive roller to vary the force of the idler roller on the tape, and means for frictionally maintaining the idler roller mounting means in adjusted position.

2. A device for drawing and tensioning a tape and the like comprising a prime mover, a drive roller driven by the prime mover at a constant speed, a freely-mounted idler roller cooperating with the drive roller with the tape running therebetween, means for mounting the idler roller on the prime mover including means for permitting adjustment of the idler roller circumferentially around the rotary axis of the drive roller to vary the force of the idler roller on the tape, and means for frictionally maintaining the idler roller mounting means in adjusted position.

3. A device for drawing and tensioning a tape and the like comprising a prime mover, a drive roller driven by the prime mover at a constant speed, a freely-mounted idler roller cooperating with the drive roller with the tape running therebetween, and means for mounting the idler roller on the prime mover adjustable circumferentially around the rotary axis of the drive roller through an angle of 90° to vary the force of the idler roller on the tape from a range in which the maximum is equal to the weight of the idler roller and the minimum is zero.

4. A device for drawing and tensioning a tape

and the like comprising a prime mover, a drive roller driven by the prime mover at a constant speed, an idler roller cooperating with the drive roller with the tape running therebetween, a flat ring shaped disk adjustably mounted concentrically with the drive roller, and a frame secured to the disk having a pair of slots therein to act as bearings and retaining means for the idler roller, the circumferential adjustment of the disk, frame and roller around the rotary axis of the drive roller varying the force of the idler roller on the tape.

5. A device for drawing and tensioning a tape and the like comprising a prime mover, a drive roller driven by the prime mover at a constant speed, a freely-mounted idler roller cooperating with the drive roller with the tape running therebetween and having journals which are free to move radially of the drive roller, and means for mounting the idler roller on the prime mover including means for guiding the journals radially and for adjusting the idler roller circumferentially around the rotary axis of the drive roller to vary the force of the idler roller on the tape, said means being adjustable through 90° from an approximately vertical position of the axes of the rollers to an approximate horizontal position of the axes of the rollers.

6. A device for drawing and tensioning a tape and the like comprising a prime mover, a drive roller driven by the prime mover at a constant speed, an idler roller cooperating with the drive roller with the tape running therebetween, a flat ring shaped disk adjustably mounted concentrically with the drive roller, a frame secured to the disk having a pair of slots therein to act as bearings and retaining means for the idler roller, the circumferential adjustment of the disk, frame and roller around the rotary axis of the drive roller varying the force of the idler roller on the tape, and a spring member mounted on the prime mover in contact with the disk to hold the disk in the adjusted positions.

7. A device for drawing and tensioning a tape and the like comprising a pair of opposed rollers, means for mounting one of said rollers to act as a drive roller, means for mounting the other roller and being adjustable around the axis of the drive roller to act as a freely-mounted idler roller, the tape being driven by the drive roller between it and the idler roller and upon adjustment of the mounting means of the idler roller by transferring to the mounting means an amount of the weight of the idler roller effective on the tape, the tension in the tape will be adjusted accordingly, and means for maintaining the mounting means in adjusted position.

8. A device for reading and observing a tape as it issues from a sales quotation printing mechanism, comprising a support for holding a work sheet, a rack extending across the support and having guide means for the tape, and means on

one side of the support for drawing the tape along the rack as the tape issues from the sales quotation printing mechanism.

9. A device for reading and observing a tape as it issues from a sales quotation printing mechanism, comprising a support for holding a work sheet, a rack extending across the support, and means cooperating with the rack to secure the work sheet on the support.

10. A device for reading and observing a tape as it issues from a sales quotation printing mechanism, comprising a support for holding a work sheet, a rack extending across the support including means for guiding the tape on the rack, and means on one side of the support for drawing the tape along the rack as the tape issues from the sales quotation printing mechanism.

11. A device for reading and observing a tape as it issues from a sales quotation printing mechanism, comprising a support for holding a work sheet, a rack extending across the support including a curb portion along one side of the rack and a pin near each end of the curb portion extending at right angles thereto across but spaced from the surface of the rack to guide the tape on the rack, and means on one side of the support for drawing the tape along the rack as the tape issues from the sales quotation printing mechanism.

12. A device according to claim 8, in which the drawing means for the tape includes means to maintain the tape under an adjustable tension to prevent the tape from being pulled out of the printing mechanism at a rate causing space skipping during printing.

13. A device of the character described comprising a rack on which a tape is adapted to travel, means for guiding the tape on the rack, and means for pulling the tape along the rack, said pulling means having an adjusting device to vary the tension in the tape.

14. A device for clamping a work sheet on a support comprising a bowed flat spring member, and a second bowed flat spring member pivotally secured to one end of the first mentioned spring member at a point intermediate the ends of the second spring member.

15. A device according to claim 14, in which each end of the second spring member is provided with an upwardly curved finger position.

16. A device for mounting a motor on a support comprising a bracket with a pair of plates secured to the motor, and a disk having a holding bar thereon adjustably mounted on the support, said pair of plates fitting and resting with the bracket between the disk and holding bar and on the latter to removably support the motor.

17. A device according to claim 16, in which the disk is provided with means to rotatably mount the disk on the support in any adjusted position.

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