Sept. 29, 1953 D. PICUCCI 2,653,559

TAPE GUIDING APPARATUS

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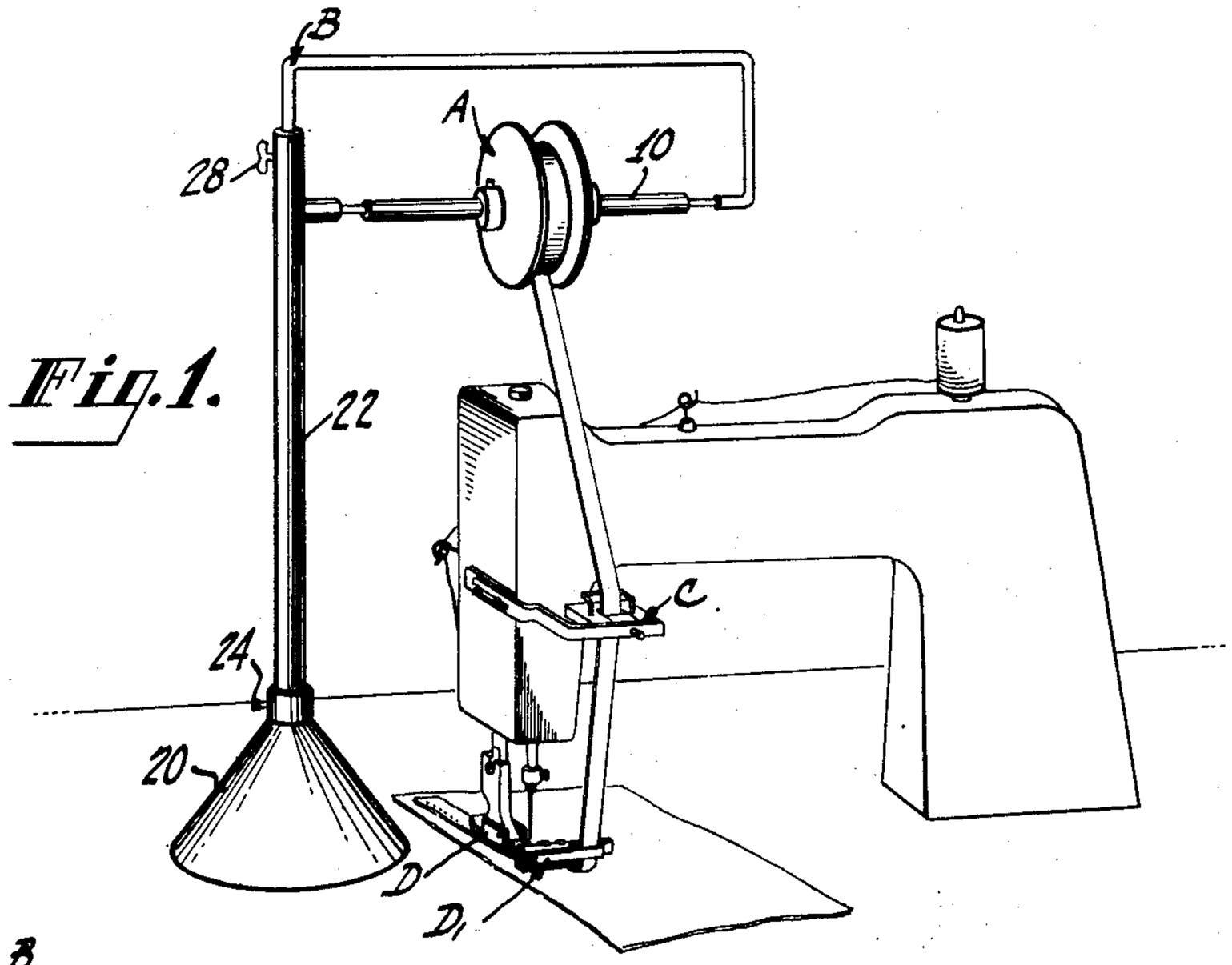

Fig. 1.

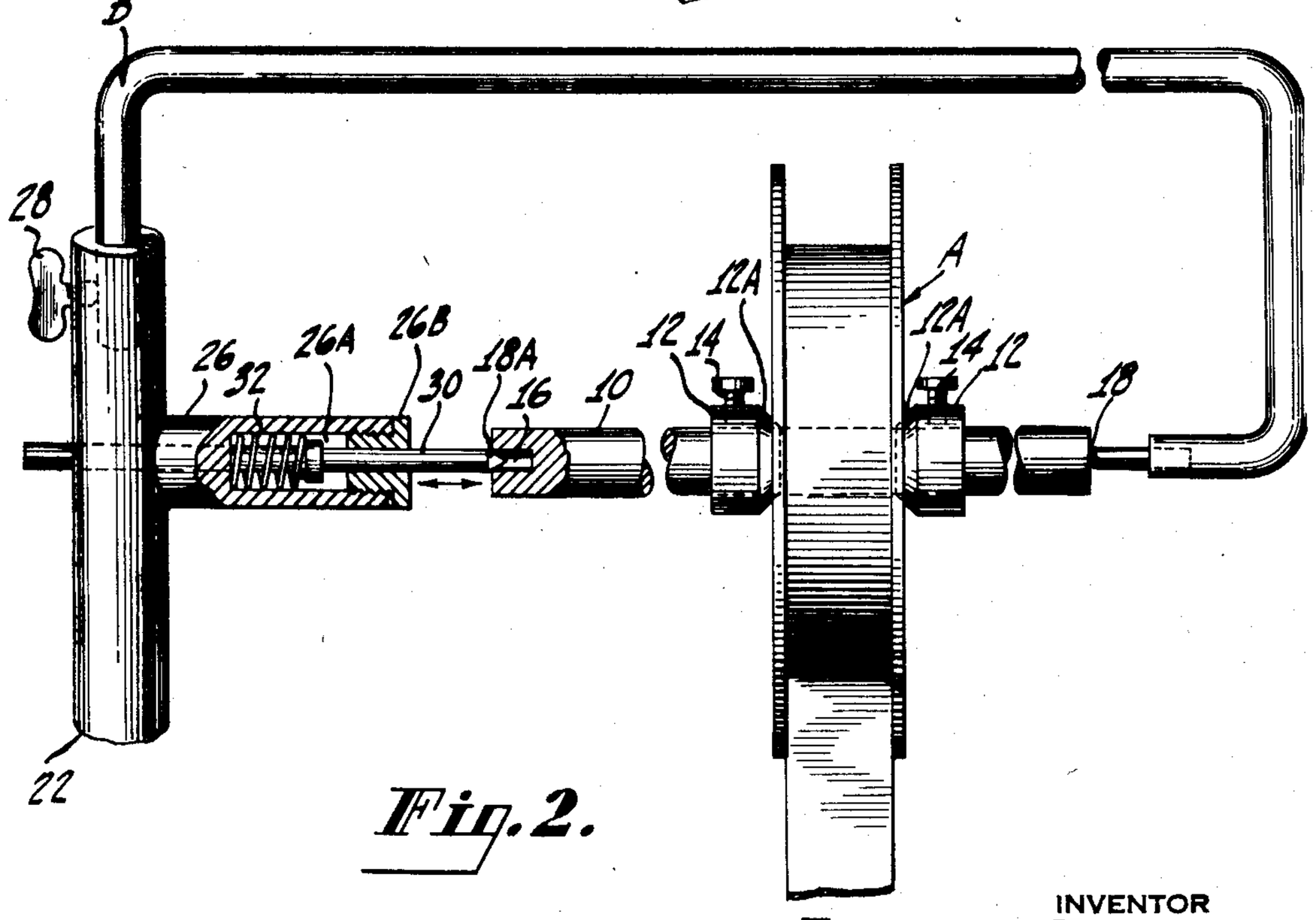

Fig. 2.

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Fig. 3.

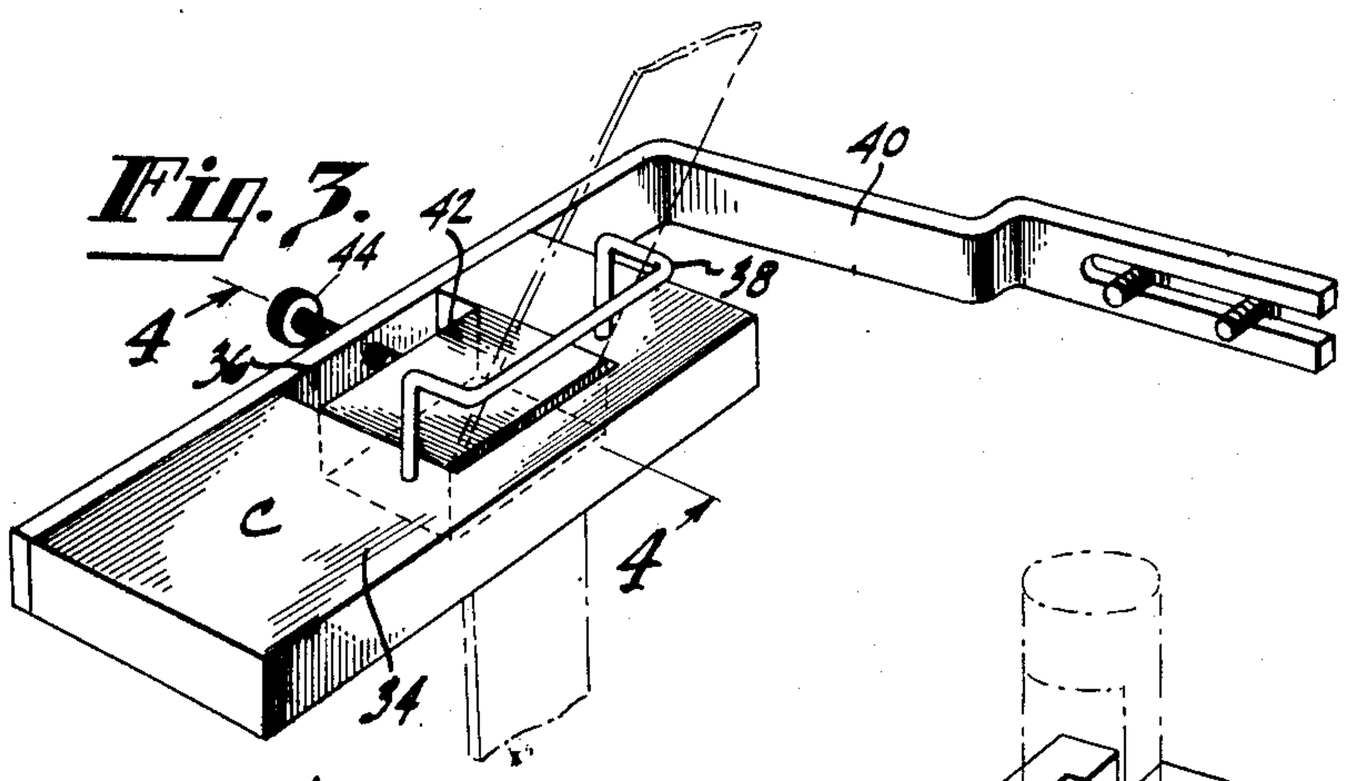


Fig. 4.

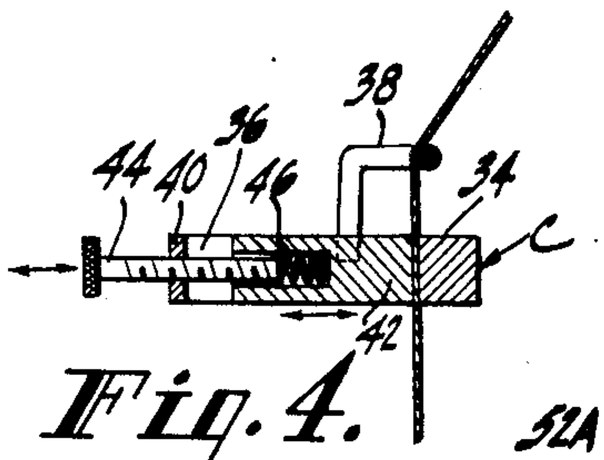


Fig. 5.

Fig. 6.

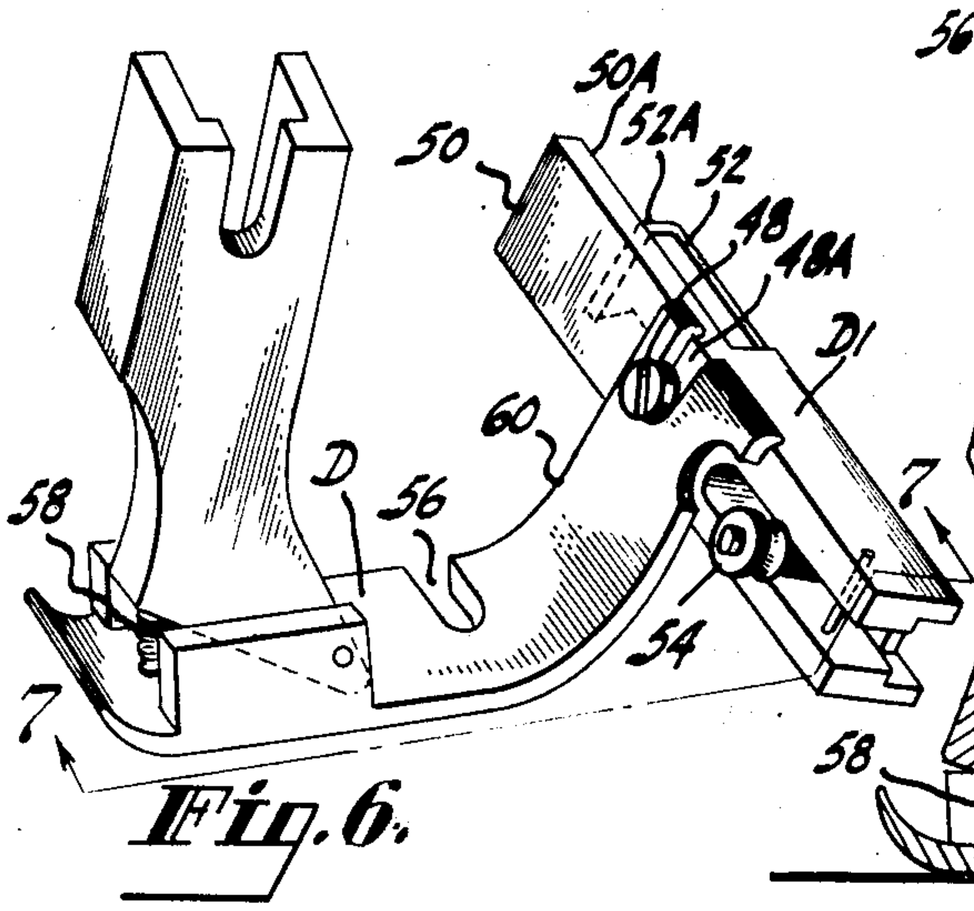
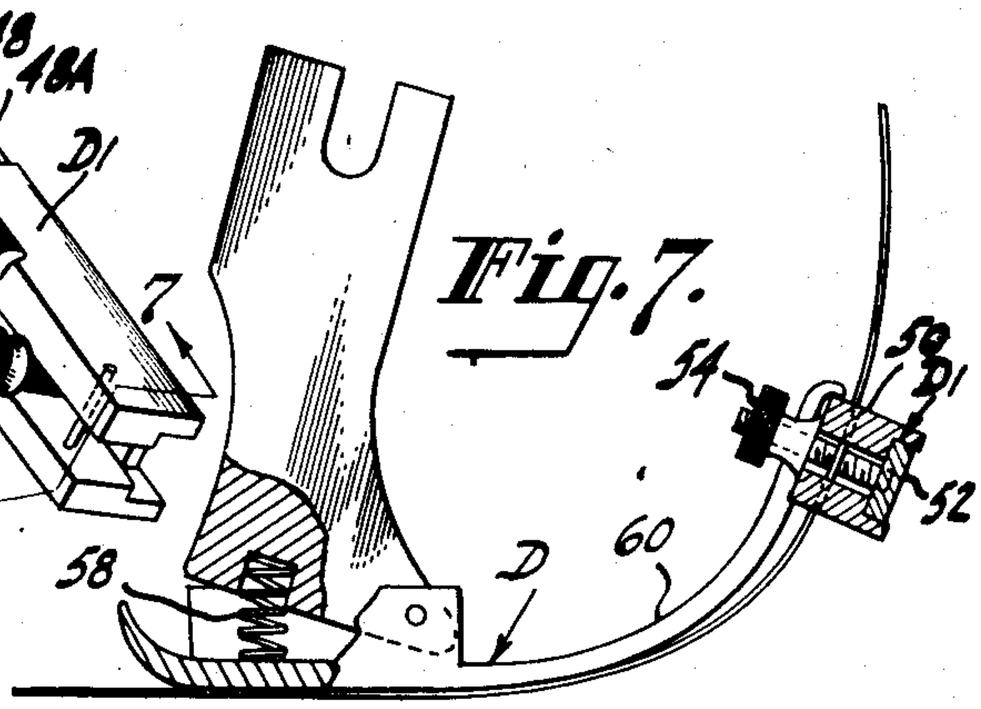


Fig. 7.



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TAPE GUIDING APPARATUS

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2 Claims. (Cl. 112—152)

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My invention relates to attachments for a sewing machine and relates particularly to an adjustable tape reel, tensioning apparatus and tape guide for sewing machines.

Heretofore, various attachments have been used for guiding tapes to be sewn by a sewing machine to a cloth but they have had disadvantages such as being difficult to adjust and align and the inability to be used by any operator unless trained to use them, resulting in loss of production and poor quality of work until the operator has become familiar with all the intricacies of the attachments. My invention is easily and readily used by even the beginner because of its ease of adjustment.

It, therefore, is an object of my invention to provide a simple and efficient adjustable tape guide to accommodate all types and widths of tape, bands or strips of cloth.

Another object of my invention is to provide a reel for holding the tape, bands or strips of cloth in alignment with the tape tensioning apparatus and the tape guide.

Another object of my invention is to provide a tape guide, tape tensioning apparatus, and tape stand which may be easily adjusted without the use of special tools.

Another object of my invention is to provide a tape guide wherein the stitching may be made on the right or left-hand side of the tape as the operator wills with a simple adjustment.

Another object of my invention is to provide a tape guide wherein the stitching may be made closer to or further away from the edge of the tape being sewn.

Another object of my invention is to provide a tape guide which may have a gauge incorporated in its adjustment so that it can be preset for any particular width of tape.

Other objects of my invention are to provide apparatus as above-mentioned which is sturdy in construction, easily and economically produced, and which is highly efficient in operation.

With the above and related objects in view, my invention consists in the details of construction and relationship of parts, as will be more fully understood from the following description, when read in conjunction with the accompanying drawings, in which:

Fig. 1 is a perspective view of my invention attached to a sewing machine.

Fig. 2 is a detailed front elevational view of the reel of my invention.

Fig. 3 is a perspective view of the tensioning apparatus of my invention.

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Fig. 4 is a cross-sectional view of Fig. 3 taken along the line 4—4.

Fig. 5 is a perspective view of the tape guide of my invention.

Fig. 6 is another perspective view of the tape guide of my invention.

Fig. 7 is a cross-sectional view of the tape guide taken along the line 7—7 of Fig. 6.

Referring now in greater detail to the drawings wherein similar reference characters refer to similar parts, I show a reel for holding tape, generally designated as A, mounted on a tape reel stand, generally designated as B, which is attached to the sewing machine base. I also show a tensioning apparatus, generally designated as C, attached to the head of a sewing machine, and an adjustable tape guide, generally designated as D, which may be embodied in a presser foot (as illustrated) but which may be adapted to be attached to the throat plate or bed plate of a sewing machine.

It should be kept in mind that my invention consists in the relationship of the various parts to form a smoothly functioning unit.

The reel A may be any one of a number of different standard reels. Different width reels A being utilized for different width tapes, bands or strips of cloth.

The tape reel B is provided with a base 20 and an inverted J-shaped upright member 22 which may be raised or lowered by loosening the screw 24 and raising or pushing the upright member 22 within the base 20. A T-shaped portion 26 integrally formed with the upright 22 has a stepped longitudinal bore 26A therethrough to accommidate a retractible center rod 30 which is continually thrust forward by the spring 32 against the collar 30A formed integrally with the rod 30, but which is retained in the bore 26A by the collar 30A against the bushing 26B threadedly engaged with the bore 26A. The center rod 30 is supported on one end by the bushing 26B and at the other end by the smaller end of the stepped longitudinal bore 26A. The free end of the J-shaped upright 22 is provided with a center point 18, while the free end of the center rod 30 projecting through the bushing 26B is provided with a center point 18A. A cross-beam 10 is provided to bridge the distance between the aforementioned center-points. The cross-beam 10 is provided with a pair of small bores 16 at its ends to engage the center points 18 and 18A. The cross-beam 10 is used to support and secure a reel A in the proper position by means of a pair of cylindrical collars 12 having conical ends 12A being inserted on the

cross-beam 10. The knurled locking screws 14 are tightened by hand to secure the collars 12 to the cross-beam 10. The reel A may be positioned in any predetermined place on the rod by loosening and removing the collars 12, then a reel of any width or size of bore is inserted on the cross-beam 10, after which the collars 12 with their conical ends 12A are inserted on the cross-beam 10 so that their conical ends 12A engage the bore of the reel A. When the proper position is determined for the reel, the collars 12 are secured in place by tightening the knurled screws 14 by hand. The cross-beam carrying portion 22A of the stand B may also be varied in size and is separable from the remainder of the upright member 22. The portion 22A has its end 22B recessed in a bore 22C provided in the upright 22 and secured to the upright 22 by means of the thumb-nut 28. It is readily apparent from the foregoing description that any width reel A may be accommodated as well as one having any size bore as the conical ends 12A when pressed into the bore of the reel A center the reel A on the cross-beam 10. If the cross-beam 10 is to be removed, or replaced by one carrying a different tape, it is pulled toward the center point 18A depressing the center rod 30 in the bore 26A and freeing the center point 18 from the bore 16, after which the cross-beam 10 is drawn forward and away from the center point 18 making it entirely free to be removed.

The tape tensioning portion of my invention C comprises a block 34 having a rectangular cut-out portion 36 and a guide 38 mounted adjacent thereto. The block 34 is attached by any suitable means to an L-shaped bracket 40 and fastened to the head of a sewing machine. A block 42 is provided to interfit with the cut-out portion 36 to engage the tape passing over the guide 38 and through the cut-out portion 36. Pressure is applied to the block 42 by means of the knurled screw 44 threaded through the L-shaped bracket 40 and the spring 46 located in the bore 48 of the block 42. The screw 44 passes into the bore 48 to bear against the spring 46. The pressure on the block 42 is easily varied by turning the knurled screw 44 with the fingers.

The importance can now be seen of the readily made adjustments on the stand, as the tape must be properly aligned with the tensioning apparatus to keep it from skewing and moving at the predetermined constant tension.

The tape guide D illustrated in Figs. 5, 6 and 7 is embodied in a presser foot although it may be embodied in a head plate or a bed plate of a sewing machine. The tape guide has the usually inclined toe piece 60 of a presser foot to which is attached the tape guide D1 per se by means of a screw 48 and a slot 48A in the toe 60. The tape guide D1 comprises the pieces 50 and 52 locked together by the screw 54. The piece 50 has a flat section extending from the center of the piece 50 to one of its ends, while the other section of piece 50 is of substantially rectangular configuration and has a slot 56 transverse to the flat section. The slot 56 is large enough for the screw 54 to move freely in it. The rectangular section 50A of piece 50 is provided with a shallow channel 58 adjacent the slot 56 in which the piece 52 slides. The front piece 52 is of flat configuration and is provided with a short projection 52A which slides on the flat section of piece 50. The front piece 52 may be provided with suitable markings for various width tapes.

Provision is also made to sew the tape on either side. This is done by removing the tape guide D1 from the toe 60 and reversing it which automatically changes the stitching from one side of the tape to the other. The spacing of the stitching from the edge of the tape may be varied by loosening the screw 48 and moving the edge guiding portion 52A the desired distance and then locking the screw 48.

With my invention it is possible to set up a piece of work as desired in a short time as the adjustments are simple and very little discrepancy will be found throughout the whole, as once my invention is set up, it remains so until some other setting is desired, at which time it can be done readily and easily as all adjustments are readily accessible.

Although my invention has been described in considerable detail, such description is intended as merely illustrative rather than limiting, as my invention may be variously embodied and the scope of the invention is to be determined as claimed.

I claim as my invention:

1. A tape guide comprising a presser foot for a sewing machine, an upturned toe on said pressure foot, said presser foot being provided with an elongated slot in the upturned toe, a first member attached to said presser foot by a screw disposed within said slot, a second member of flat configuration, said first member having a flat section extending from its center to one end of said first member, and a substantially square section extending to the other end of said first member, a slot through said square section extending longitudinally of said flat section to accommodate a locking nut threadedly engaged with said second member, said square section being provided with a shallow channel to slideably engage said second member, said second member being provided with a bent over portion to slide along said flat section of said first member, leaving an opening between the said first member, and the said second member to accommodate tape.

2. In combination, a tape guide comprising a presser foot for a sewing machine, an upturned toe on said presser foot, said presser foot being provided with an elongated slot in the upturned toe, a first member attached to said presser foot by a screw disposed within said slot, a second member of flat configuration, said first member having a flat section extending from its center to one end of said first member, and a substantially square section extending from its center to the other end of said first member, a slot through said square section to accommodate a locking nut threadedly engaged with said second member, said square section of said first member being provided with a shallow channel to slideably engage said second member, said second member being provided with a bent over portion to slide along said flat section of said first member, leaving an opening between the said first member and the said second member for the passage of tape, and a tape tensioning apparatus, said tensioning apparatus comprising a block adapted to be mounted on the sewing machine in spaced relation to said presser foot, an opening formed in said block, a guide mounted on said block adjacent said opening, a second block slidably positioned within the opening of said first block, said second block being adjustable by means of a screw attached thereto, said screw being threadedly engaged in

a hole formed in one of the walls defining the opening in said first block and extending into a recess formed in said second block, said screw abutting against a spring positioned in said recess, said second block acting to form an adjustable slot between one edge of said second block and one of the walls defining the opening in said first block, said last mentioned wall being opposite to said first mentioned wall, and the width of said adjustable slot being adjustable by means of said screw, said adjustable slot being adapted to allow a strip of tape extending over said guide to pass therethrough toward said presser foot.

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