Sept. 7, 1954 E. E. McCLOUD 2,688,294

THREAD GUIDE

Filed Dec. 29, 1949

FIG. 1.

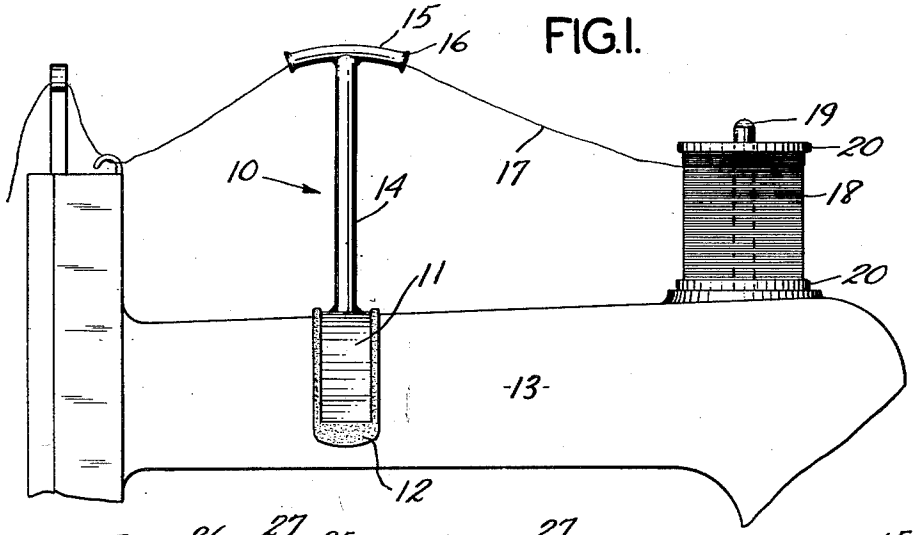


FIG. 2.

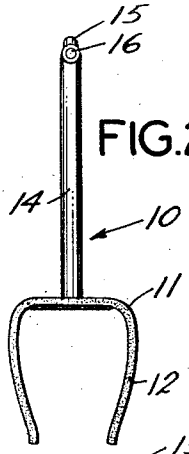


FIG. 3.

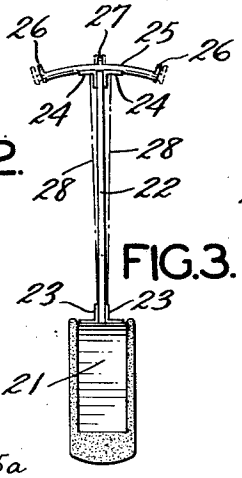


FIG. 4.

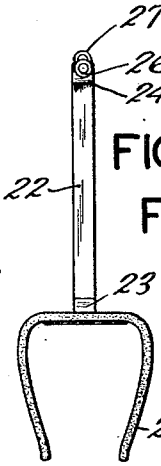


FIG. 4a.

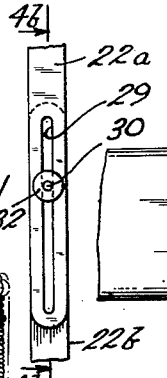


FIG. 5.

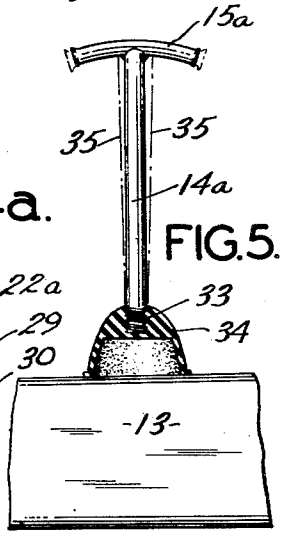


FIG. 6.

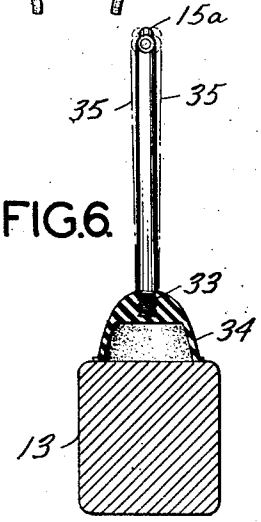


FIG. 7.

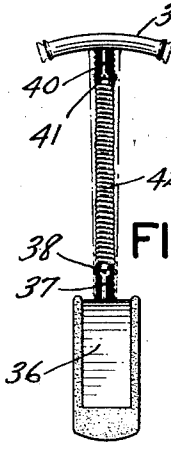


FIG. 8.

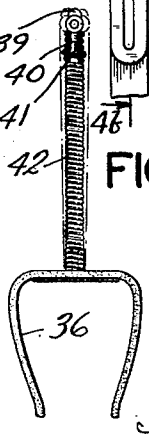
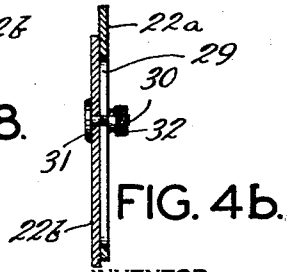


FIG. 4b.



INVENTOR
EFFIE ELIZABETH McCLOUD
BY
Irving Seidman
ATTORNEY

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THREAD GUIDE

Effie Elizabeth McCloud, Cleveland, Ohio

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1 Claim. (Cl. 112—218)

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This invention relates to thread guides for sewing machines and a support for same.

Broadly, it is an object of the invention to provide a thread guide which may be removably positioned along the sewing machine arm to guide the thread from the spool so that the thread cannot jump the ends of the spool.

More particularly, it is an object of the invention to provide a thread guide in some forms which are resiliently mounted so that any irregularities in the thread will not cause the thread to be caught in the device and thus break the thread.

A further object is to provide a device which will cause the thread to come from the spool at an angle preventing the thread from jumping either end of the spool.

Sewing machine thread is pulled from the spool rather rapidly and intermittently and the thread will sometimes jump the end of the spool and become entangled on the spindle, knotting or breaking the thread. This will often cause the needle to be deflected sufficiently during its operation to cause it to strike a portion of the machine breaking the needle and resulting in loss of time to replace the needle or to fix and rethread the thread.

Heretofore, devices for guiding the thread have been used which do not permit the guide to be spaced from the spindle at the will of the operator at the most effective distance. In using thread of different thicknesses and spools of different sizes, it is necessary at times to space the thread guide further or nearer from the spindle. This also varies the angle at which the thread leaves the spool so that the device may be placed at the most effective distance. Furthermore, thread guides used heretofore were rigid and if an irregularity or nub existed in the thread there would not be sufficient "give" in the thread guide often causing the thread to break. Many thread guides also tension the thread and without resiliency the chances of the thread breaking are increased. It is also important to have the thread leave the spool at a preferred angle to eliminate the possibility of the thread jumping the ends of the spool. I have therefore provided a device which may be adjusted vertically depending upon the height of the spool.

Since sewing machines are made with arms of different thicknesses and lengths, I have provided a thread guide which may be removably attached to virtually any sewing machine arm made.

My thread guide was designed to overcome all of these difficulties providing a guide which may be attached to any sewing machine arm, at any

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preferred distance, which can be adjusted as to height and which is sufficiently resilient to prevent breaking of the thread if irregularities or nubs exist in the thread.

For a fuller understanding of the nature and objects of the invention, reference is had to the following detailed description in connection with the accompanying drawings, in which:

Fig. 1 is a side elevational view of one form of thread guide having a resilient clip for attaching to the arm of the sewing machine and showing it seated upon the arm of a sewing machine.

Fig. 2 is a front view of the thread guide shown in Fig. 1.

Fig. 3 is a side elevational view of a modified resilient thread guide.

Fig. 4 is a front view of the thread guide shown in Fig. 3.

Fig. 4*a* is an enlarged front view of a modification of the thread guide shown in Figs. 3 and 4 showing means for adjusting the guide vertically, the upper and lower parts being broken away.

Fig. 4*b* is a side sectional view of screw and nut means shown in Fig. 4*a* for fixing the vertical parts in position.

Fig. 5 is a side elevational view of the upper part of the thread guide shown in Figs. 1 and 2 attached to a suction cup shown in vertical section.

Fig. 6 is a front view of the thread guide shown in Fig. 5.

Fig. 7 is a side elevational view of another modified resilient thread guide, and

Fig. 8 is a front view of the thread guide shown in Fig. 7.

Referring to the drawings, numeral **10** represents a thread guide having a resilient spring clip **11** which is covered or coated on the inside, the edges and adjacent the upper edges with a felt or rubber coating **12** so that the finish of the sewing machine arm **13** will not be marred. Attached to the upper central part to the clip **11**, by brazing or other well-known means, is a vertical tubular member **14** which has a small arcuate tubular member **15** attached across its upper end by brazing or other means, as shown in Fig. 1. The ends **16** of the tubular member **15** are flared outwardly so that the thread **17** passing through the member **15** will have no chance of getting caught at the edge of the tube.

The guide **10** may be removably attached along the sewing machine arm **13** at any desired distance. The arcuate tubular member **15** is higher than the average spool of thread **18** which is generally seated upon the spindle **19** so that the

thread 17 leaves the spool 18 at an angle. This prevents the thread 17 from jumping over the ends of the spool so that the thread cannot become fouled on the spindle 19. By placing the thread guide 10 at any desired part of the arm 13, the angle at which the thread comes off the spool 18 may be varied depending upon the character and denier of the yarn and the size of the spool. The spring clip 11 is formed of a size to permit seating of the guide upon the average sewing machine arm now being used.

The thread guide shown in Figs. 3 and 4 comprises a resilient spring clip 21 of the same character and structure as that shown in Figs. 1 and 2 except that in place of the tubular members 14 and 15, I have provided a resilient leaf member 22 which is attached at its lower end with a pair of right angle brackets 23 preferably attached to the spring clip 21 by spot welding or any other well known means. Attached to the upper end of member 22 by right angle brackets 24 is an arcuate member 25 having two circular openings 26 at each end and a central opening 27 for the thread to pass therethrough. During the passage of the thread through the openings 26 and 27, the intermittent travel of the thread will cause the upper portion of the device to vibrate to the right and left as indicated by the dot and dash lines 28 as shown in Fig. 3. In the event that the thread should contain any nubs or irregularities, the resiliency of the leaf member 22 will permit the thread to travel through the openings 26 and 27 thus avoiding catching and possible breaking of the thread.

In Figs. 4*a* and 4*b* I have shown a modification of the device shown in Figs. 3 and 4 to permit adjustment of the resilient member vertically. Instead of a single leaf member 22 I have made this leaf member in two parts 22*a* and 22*b* with an elongated slot 29 in each of the leaf members 22*a* and 22*b* so that the slots overlay one another. Between the slots a screw 30 is passed having a head 31 at one end and a nut 32 seated upon the screw 30. By loosening the nut 32 the leaves 22*a* and 22*b* may be moved vertically to a desired height and the leaves may be then fixed in position by tightening the nut 32. Since spools of thread are purchased of different heights and since thread is purchased in a large variety of thicknesses (denier) it may be desirable to raise or lower the resilient member so that the thread comes off the spool at a preferred angle which would prevent the thread from jumping the ends of the spool thus preventing fouling of the thread on the spindle. The experience of the operator will soon educate such operator to adjust the height of the device and the distance of the device from the spool to give maximum efficiency so that the thread will never become fouled.

In the device shown in Fig. 5 I have shown a modification of the attaching means of the thread guide to the sewing machine arm. For illustrative purposes I have shown a vertical member 14*a* and arcuate member 15*a* similar in form and shape to those shown in Figs. 1 and 2 except that the lower end 33 of the vertical member 14*a* is threaded or serrated for better gripping within the head of the suction cup 34. By the use of a rubber suction cup 34 the thread guide shown in Fig. 5 may be placed at any desired position along the sewing machine arm 13 and at the same time provide resiliency as indicated by the dot and dash lines 35 to provide the same advantages as aforesaid for the device described and shown in Figs. 3 and 4.

In Fig. 7 I have shown another modification of a thread guide having the same type of resilient spring clip 36 as that shown in Fig. 1 except that the upper central part has attached thereto a vertical stud 37 with an enlarged head 38. The upper portion of the device has an arcuate tubular member 39 similar to that shown in Fig. 1 numeral 15, except that in the lower central portion there is a depending stud 40 with an enlarged head 41. A helical coil spring 42 is seated upon the lower and upper studs 37 and 40 respectively, thus joining the tubular member 39 to the clip 36 and providing resiliency of the device in all directions.

It is evident that the spring clip shown in Figs. 1, 3 and 7 may be substituted with a suction cup for a base as shown in Fig. 5 and that instead of the arcuate tubular member through which the thread passes as shown in Figs. 1, 5 and 7 the member 25 as shown in Fig. 3 may be substituted. It is further evident that various changes and modifications may be made in the details of construction and arrangement of parts without departing from the general spirit of the invention.

I claim:

A thread guide device for sewing machines comprising a resilient spring clip for removably attaching said device over a sewing machine arm, a hollow thread receiving downwardly arcuate member for the passage of the sewing machine thread therethrough, said arcuate member adapted to be positioned substantially parallel to said sewing machine arm, and a vertical member comprising a pair of slotted leaf springs, one of said leaf springs attached to said spring clip and the other of said leaf springs attached to said arcuate member, a headed screw passing through the slots of said leaf springs and a nut at the end of said screw for vertical adjustment of said leaf springs.

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