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J. D. KARLE
 AUXILIARY RELEASE FOR THE SPOOL-HOLDERS
 OF SURGICAL STITCHING INSTRUMENTS
 Filed Oct. 20, 1943

2,393,911

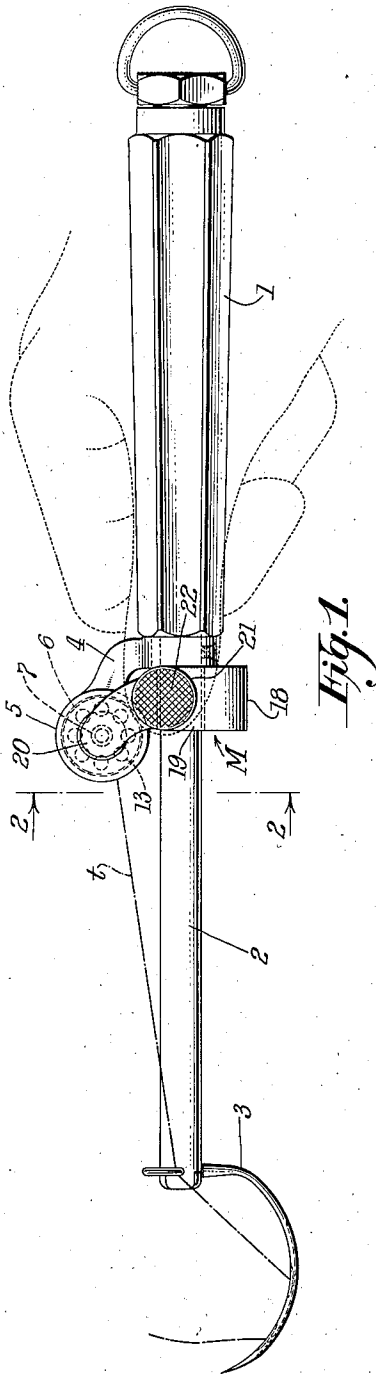


Fig. 1.

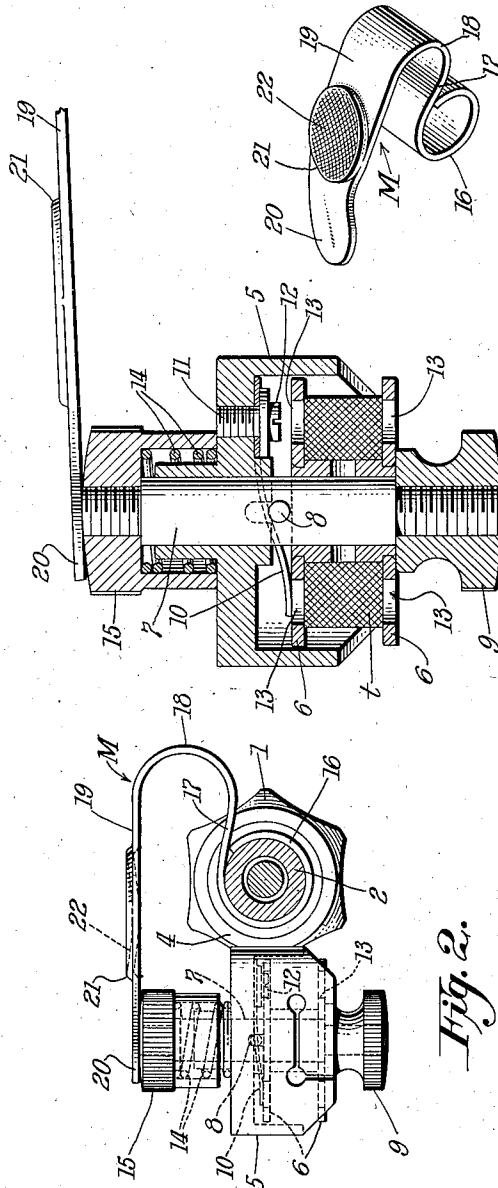


Fig. 2.

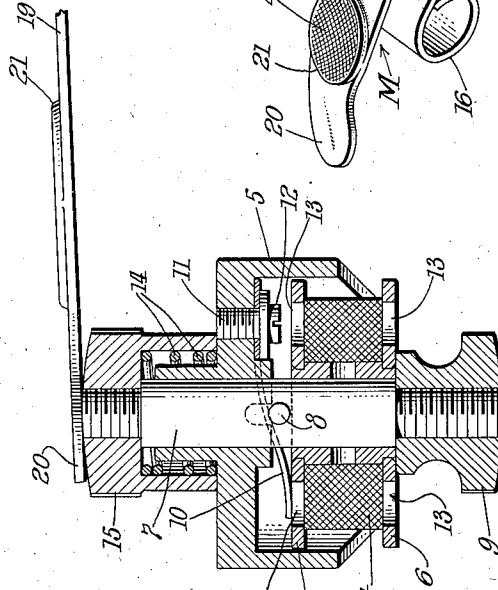


Fig. 3.

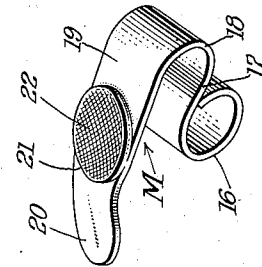


Fig. 4.

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AUXILIARY RELEASE FOR THE SPOOL
HOLDERS OF SURGICAL STITCHING IN-
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3 Claims. (Cl. 128—340)

This invention relates to surgical stitching instruments of the type disclosed in my United States patent application Serial No. 438,292, filed April 9, 1942, and it has as an object to provide auxiliary means for facilitating the release of the suture-spool locking device:

In the instrument disclosed in my prior application the suturing thread is wound upon a spool which is held in a spool-holder supported from the handle of the instrument and located at one side of the axis thereof. The spool-holder includes means for locking the spool against rotation in the holder, so that suture thread will not be pulled from the spool accidentally, and manually actuable means for releasing the spool from its locking means to permit the spool to rotate when it is desired to pull suturing thread therefrom. The spool-locking means comprises a stud in the spool-holder which is adapted to enter any one of a plurality of holes in the flange of the spool, and a spring for normally holding the stud in one of said holes. The spool-lock may be released by manually shifting the spool-pin and spool axially in opposition to said spring to disengage the locking stud from the hole in the spool-flange. This shifting of the spool-pin and spool is effected by thumb-pressure applied to a cup-nut secured upon the spool-pin.

To apply thumb-pressure to the spool-lock releasing means requires a user to reach diagonally across the axis of the instrument with his thumb to engage the spool-releasing cup-nut. Certain users have indicated a preference for an instrument in which the spool-locking means may be released by thumb-pressure applied on or near the axis of the instrument, so that such cross-reaching with the thumb is not required.

This invention has as its primary object to provide auxiliary means applicable to the surgical stitching instrument disclosed in my above mentioned application whereby the spool-locking means may be released by thumb-pressure applied at a point at one side of the axis of the spool-holder and adjacent the axis of the instrument.

More specifically, the invention has as an object to provide a simple, light-weight and inexpensive device, preferably of sheet metal, which readily may be applied to "Singer" surgical stitching instruments now in use to enable the spool-locking means thereof to be released by thumb-pressure applied substantially on the axis of the instrument.

A drawing depicting a preferred embodiment of

this invention has been annexed as a part of this disclosure and in such drawing:

Fig. 1 is a side elevation of a "Singer" surgical stitching instrument having my auxiliary spool-lock releasing device applied thereto.

Fig. 2 is a transverse sectional view taken on the line 2-2 of Fig. 1 with the suture-spool locked against rotation in the spool-holder.

Fig. 3 is a longitudinal section through the spool-holder, showing the auxiliary spool-lock releasing device as depressing the cup-nut, spool-pin and spool, to release the latter from its locking-stud in the spool-holder.

Fig. 4 is a perspective view of the auxiliary spool-lock releasing device, apart from the instrument.

Referring more specifically to the drawing the invention is disclosed as applied to a "Singer" surgical stitching instrument comprising a handle 1, a needle-bar 2 projecting axially from the handle; and a curved, eye-pointed needle 3 secured in the free end of the needle-bar. Secured upon one end of the handle is a spool-supporting bracket 4, having, at one side of the axis of the handle and needle-bar, an open cup-like portion 5 adapted to receive a spool 6 upon which is wound surgical suturing thread *t* which passes to the needle 3. Mounted in the member 5 for limited endwise movement is a pin 7 upon which the hub of the spool is journaled. A stud 8, projecting radially from the spool-pin, affords an abutment for one flange of the spool. A nut 9, threaded on one end of the spool-pin, engages the other flange of the spool and, with the stud 8, holds the spool against axial movement relative to the pin 7 while permitting it to rotate thereon. Mounted in the cup 5, behind the spool 6, is leaf spring 10 which bears upon and applies a slight friction to the spool to prevent overrunning of the spool and spilling of thread. The spring 10 is held in the cup 5 by a screw 11 the head 12 of which affords one element of a spool-locking means. The spool-pin 7 is normally held in the position shown in Fig. 2 (that is with the screw-head 12 entering one of a plurality of holes 13 formed in the flanges of the spool), by a coil spring 14 surrounding the pin 7 and interposed between the member 5 and a cup-nut 15 threaded on the other end of the spool-pin.

When it is desired to pull thread from the spool 6, which is normally locked against rotation, pressure is applied upon the cup-nut 15 thereby depressing the nut, the spool pin and the spool to the position indicated in Fig. 3. In this position the flange of the spool is out of engage-

ment with its locking stud (the screw-thread 12) and the spool is free to rotate on the pin 7. Thread may then be pulled from the spool. When the pressure on the cup-nut 15 is relieved the spring 14 again shifts the pin 7 and spool 6 axially to re-engage one of the holes 13 in the spool-flange with the stud 12 whereupon the spool is again locked against rotation. Heretofore, pressure on the cup-nut to release the spool-locking means has been applied directly by the thumb of the user.

This invention has provided a simple and inexpensive device adapted to be applied to the instrument to enable the user thereof to release the spool-locking means by applying thumb-pressure substantially on the axis of the instrument. This device comprises a sheet metal member M, shown detached in Fig. 4, comprising a split cylindrical sleeve portion 16 adapted to be slid upon and to frictionally embrace the needle-bar 2 adjacent the spool-supporting bracket 4. Extending from the sleeve 16 is a reversely bent arm, one portion 17 of which projects tangentially from the sleeve away from the spool-holder. This arm is bent backwardly, at 18, to form, in effect, a hinge point and then continues as a thumb-piece 19 which is arranged substantially parallel to the portion 17. The thumb-piece 19 terminates in a forwardly curved and rounded portion 20 which, when the member M is clamped on the needle-bar, overlies and engages the cup-nut 15. The arm 19 of the device is formed with a raised portion 21 having a depressed and roughened central portion 22 which affords a seat or button for the thumb of a user. The center of this seat is off-set from the axis of the instrument slightly toward the axis of the spool-holder. This affords means for depressing the spool-releasing nut 15 by pressure applied adjacent the axis of the instrument and insures that that pressure will not accidentally cause tipping of the auxiliary spool-lock releasing member backwardly about the axis of the needle-bar and away from the cup-nut 15.

From the foregoing it will be apparent that I have provided a simple, light-weight and inexpensive device, adapted to be applied, as an attachment, to a completed surgical stitching instrument, to facilitate the releasing of the structure-spool locking means.

Having thus set forth the nature of the invention, what I claim herein is:

1. In a surgical stitching instrument having a spool-holder located at one side of the axis of the instrument, spool-locking means carried by said spool-holder and a manually depressible element carried by said spool-holder for releasing said spool-locking means; the improvement which consists in the provision of a member having a cylindrical portion secured upon the instrument and a manually depressible arm projecting from said cylindrical portion and overlying said manually depressible element whereby said spool-lock releasing means may be actuated by pressure applied to said arm adjacent the axis of the instrument.

2. In a surgical stitching instrument comprising a handle, a needle-supporting bar extending therefrom, a spool-holder supported from said handle and located at one side of the axis thereof, spool-locking means carried by said spool-holder, and a manually actuable spool-lock releasing means coaxial with said spool-holder; the improvement which consists in the provision of a sheet metal member having a split sleeve frictionally secured on said needle-supporting bar, said member also having a reversely bent arm projecting tangentially from said sleeve away from said spool-holder and then backwardly to form a thumb-piece overlying said spool-lock releasing means whereby pressure applied to said thumb-piece is transmitted to said spool-lock releasing means.

3. An auxiliary spool-lock releasing device adapted to be removably secured upon a surgical stitching instrument having a spool-lock and releasing means therefor located at one side of the axis of the instrument, comprising a sheet metal member having a sleeve portion adapted to be mounted upon the instrument coaxially therewith and an arm extending tangentially from said sleeve portion in one direction and then bent backwardly to form an oppositely extending depressible thumb-piece, the free end of which is adapted to engage the spool-lock releasing means, said thumb-piece being formed, intermediate its ends, with a thumb-seat.

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