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2,430,832

THREAD STAND FOR SEWING MACHINES

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2 Sheets-Sheet 1

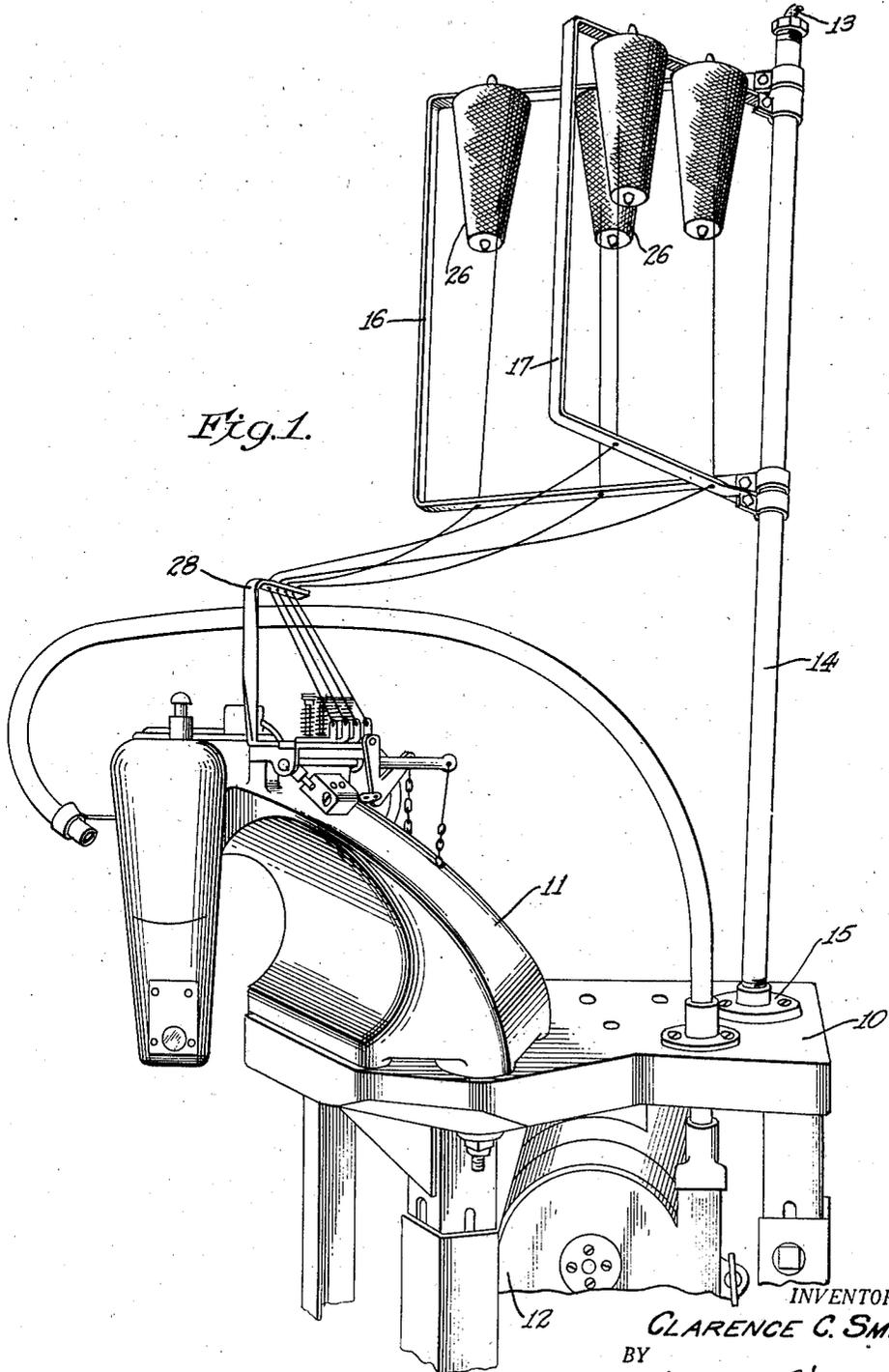


Fig. 1.

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Fig. 2.

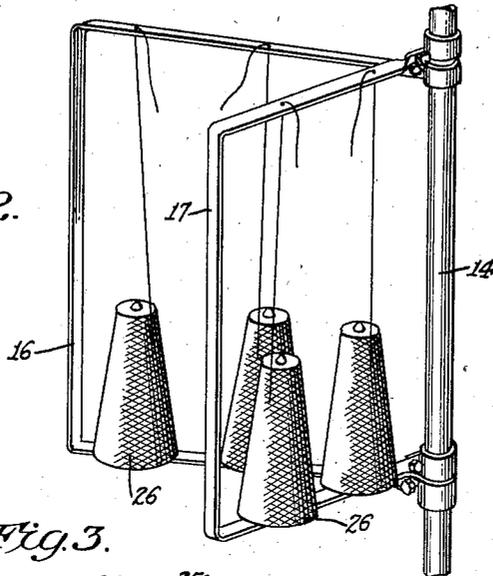


Fig. 3.

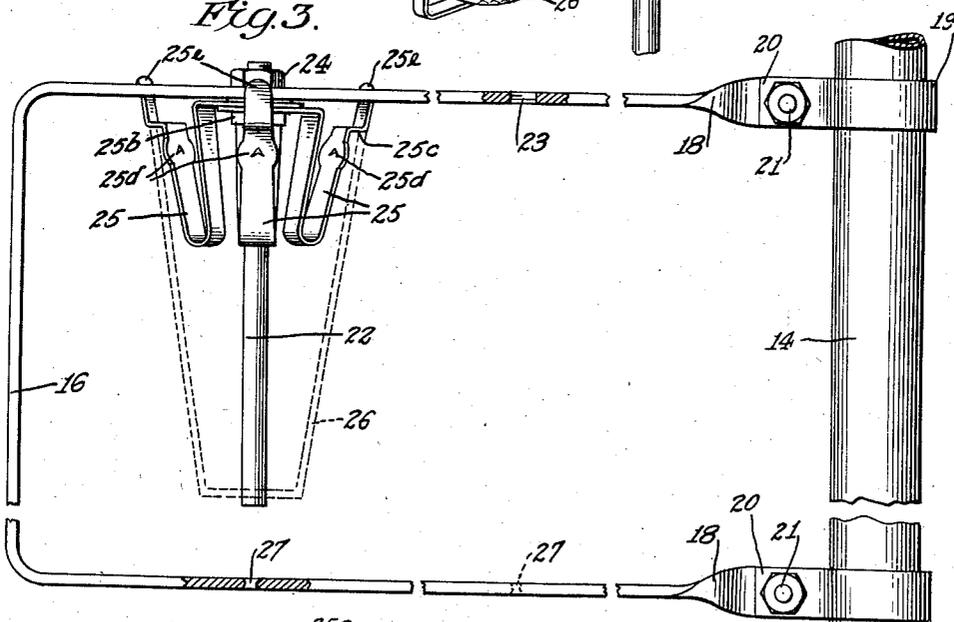
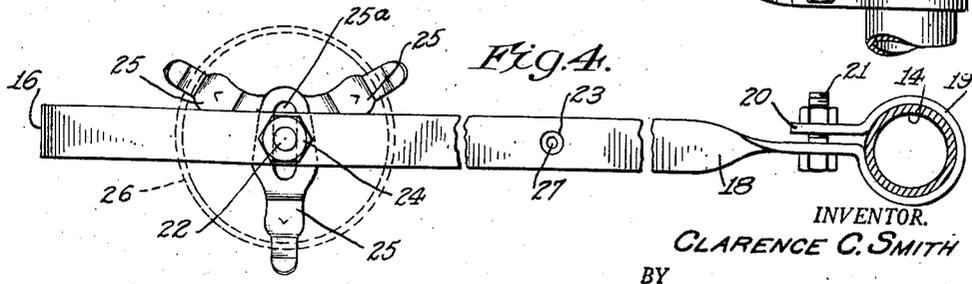


Fig. 4.



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THREAD STAND FOR SEWING MACHINES

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6 Claims. (Cl. 242—131)

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This invention relates to an improved arrangement for supporting cones or spools or other packages of thread and for guiding the thread in proper relation to the stitch forming devices of a sewing machine.

An object of the invention has been to provide a combined thread stand and thread guide in direct association with the support for a sewing machine, such stand being so constructed that it may readily be used interchangeably in either of two positions, i. e. to support the thread packages from below or to suspend them from above.

Another object has been to provide a combined thread stand and guide of the character indicated which is light but sturdy, inexpensive to construct and convenient to use.

A feature of the invention is the employment of a simple C-frame adapted to be applied to the tubular conduit commonly provided on a sewing machine table for leading the wires from an overhead line to the driving motor mounted beneath the table top. The upper and lower arms of the C-frame are adapted to provide the thread supporting and thread guiding means. By a reversible mounting of the C-frame the thread packages may be either supported by the lower arm or suspended from the upper arm. This enables the use of the stand interchangeably with either hard or soft threads. Thus, for hard-finish threads the arm of the frame provided with appropriate package retaining elements is positioned lowermost so that the thread will be drawn upwardly to the guide arm. For relatively soft threads, on the other hand, the package retaining arm will be placed uppermost so that the thread will be drawn downwardly toward the guide arm; the removal of the thread is thus assisted by gravity.

Other objects, features and advantages of the invention will appear from a detailed description of an illustrative form of the same which will now be given in conjunction with the accompanying drawings, in which:

Fig. 1 is a perspective view showing the application of a thread stand, embodying the invention, to a table supporting a sewing machine.

Fig. 2 is a similar perspective view of the upper portion of the thread stand, showing the parts in inverted relation.

Fig. 3 is an enlarged view in side elevation, but with portions broken out, showing one of the C-frame members of the improved thread stand applied to a portion of a vertical standard, and

Fig. 4 is a top plan view of the construction

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shown in Fig. 3, the vertical standard being shown in section.

For purposes of illustration, the invention has been shown applied to a table structure 10 supporting a sewing machine 11 on its upper surface and having beneath the table top a combined motor and clutch unit 12 forming a conventional electro-motor transmitter for driving the sewing machine. The latter may be of any suitable character, but for purposes of illustration there has been selected a machine constructed largely in accordance with the disclosure of the Christensen et al. Patent No. 1,741,095, granted December 24, 1929. Power may be supplied to the motor of the transmitter unit by means of an electric cable 13 which extends downwardly from an overhead line through the hollow interior of a vertical, tubular standard 14. This standard may be screw-threaded at its lower end for engagement with a supporting base 15 secured by screws or the like to the upper surface of the table top. It will be understood that an opening is provided through the table top in line with the hollow, tubular standard so that the cable may extend to the driving motor of unit 12.

The improved thread stand of the present invention comprises one or more C-shaped frame members, two such members being shown and designated 16 and 17. These members may be of identical construction and a description of one will, therefore, suffice for both. Each member is preferably formed of bar stock suitably bent into the desired shape. This shape, as indicated, is of generally C-form, providing a central vertically disposed portion with horizontally extending upper and lower arms. Adjacent its free end, each of these arms is twisted about its axis through an angle of 90°, as indicated at 18, and the portion of the bar stock beyond this twist is curled to provide a collar portion 19 adapted to fit snugly around the standard 14. Beyond the collar portion a small, straight section 20 is provided which is adapted to receive a bolt 21 which also passes through a portion of the bar adjacent the twist 18. The arrangement is such that a split collar construction is produced which permits clamping of the collar in any set position about the vertical standard. Thus, the C-frame member may be adjusted both angularly and vertically with respect to the standard.

Depending from the upper arm of the C-frame member, as shown in Fig. 3, there is provided a suitable thread package retainer. This may be of any appropriate construction, depending upon the character of the thread package employed.

If the package is in the form of a cone, the retainer may comprise a downwardly extending spindle 22 which is preferably threaded at its upper end to engage a threaded opening 23 in the upper arm of the frame. A nut 24 may be provided above the arm to secure the spindle firmly in place. Around the spindle there may be provided a series of spring members 25, each having a base portion with an elongated slot 25a adapted to receive the spindle and capable of radial adjustment with respect thereto. These members, three being shown, may be suitably positioned and clamped between a collar 25b on the spindle and the under surface of the arm. Each member is suitably bent, as indicated, in substantially U-shaped form and so as to provide a supporting shoulder 25c for the base of the thread cone 26. Moreover, each of the retaining members is also provided with a sharp teat or projection 25d adapted to grip the inner wall of the cone. The construction is such that a cone may readily be slipped over the spindle 22 and the main U-shaped portions of the members 25, these portions being resilient and constituting yielding spring fingers. The cone will be retained by the projections 25d until it is released by an inward pressure upon the free ends 25e of the spring fingers. While only one of the package retaining devices is illustrated in Fig. 3, it will be understood that two or more will ordinarily be provided on the upper arm of each C-frame, each being constructed and mounted in the same manner.

Directly in line with the axis of the spindle 22, there is provided in the lower arm of the C-frame 16 (Fig. 3) a thread guiding opening 27 through which the thread is passed as it is drawn from the cone. It will be understood that a guide opening of this character is provided for each of the thread-package retaining spindles.

As indicated alternatively in Figs. 1 and 2, the frame members 16 and 17 may be applied to the standard 14 in either of two positions in inverted relation with respect to each other. Thus, the thread retaining devices may be carried by either the upper or the lower arm of the frame. If desired, one frame may be retained in one position and the other frame in the other position. This would be the case, for example, if one type of thread were employed for the needles of the sewing machine and another type of thread were employed for the complementary stitch forming means. Thread having a hard finish should be supported by the lower arm of the frame whereas thread having a soft finish should be suspended from the upper arm of the frame in order to reduce, as far as possible, the resistance to the pull-off of the thread. The softer thread will remain on the cone even though it is inverted in the position shown in Fig. 1. Harder finish threads, however, would have a tendency to fall by gravity from such an inverted cone so that the arrangement of Figure 2 should be used for these threads.

While an illustrative form of the invention has been described in considerable detail, it will be understood that numerous changes may be made in the form of arrangement of the various parts without departing from the general principles and scope of the invention.

I claim:

1. A thread stand for sewing machines and the like comprising a vertical supporting standard of uniform cross-sectional contour, a unitary combined thread-package holding and thread guiding element of generally C-shape, including

thread package gripping means, means at both of the free ends of said element for mounting said element on said standard, said mounting means being constructed and arranged for mounting of said element on said standard in either thread package supporting or thread package suspending position.

2. A thread stand for sewing machines and the like comprising a vertical standard having a portion of circular cross section, a C-shaped thread package holding and thread guiding element, and means at both of the free ends of said element for mounting said element on said portion of said standard with capacity for adjustment thereon both angularly and axially of said standard.

3. A thread stand for sewing machines and the like comprising a vertical standard, a C-shaped thread package holding and thread guiding element, and means at both of the free ends of said element for mounting said element on said standard, one arm of said element being provided with thread package gripping means and the other arm being provided with a thread guiding eye disposed in actual alignment with a thread package on said gripping means.

4. A thread stand for sewing machines and the like comprising a vertical standard having a portion of circular cross section, a C-shaped thread package holding and thread guiding element, and means at both of the free ends of said element for mounting said element on said portion of said standard with capacity for adjustment thereon both angularly and axially of said standard, one arm of said element being provided with thread package gripping means and the other arm being provided with a thread guiding eye disposed in axial alignment with a thread package on said gripping means.

5. A thread stand which comprises a vertical standard, a C-frame having clamping means at the free ends of the arms thereof whereby said frame is adjustably mounted on said standard, one of the arms of said frame being adapted to serve as a thread guide, and thread package retaining means provided on another arm of said frame.

6. A thread stand which comprises a vertical standard, a plurality of C-frame members each having clamping means at the free ends of both of the arms thereof whereby said frames are mounted on said standard, said frames being adapted to be mounted at substantially the same elevation, an arm of each of said frame members being adapted to serve as a thread guide, and thread package retaining means provided on another arm of each frame member.

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