April 9, 1935. J. HUTTON 1,996,964

TENSION INDICATOR FOR SEWING MACHINES

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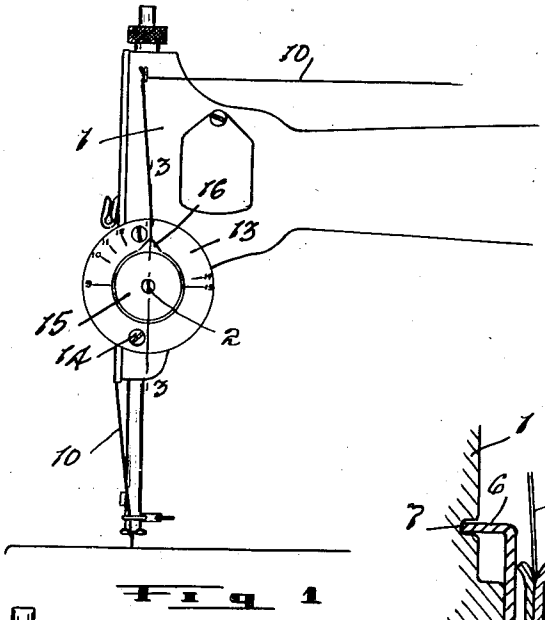

Fig 1

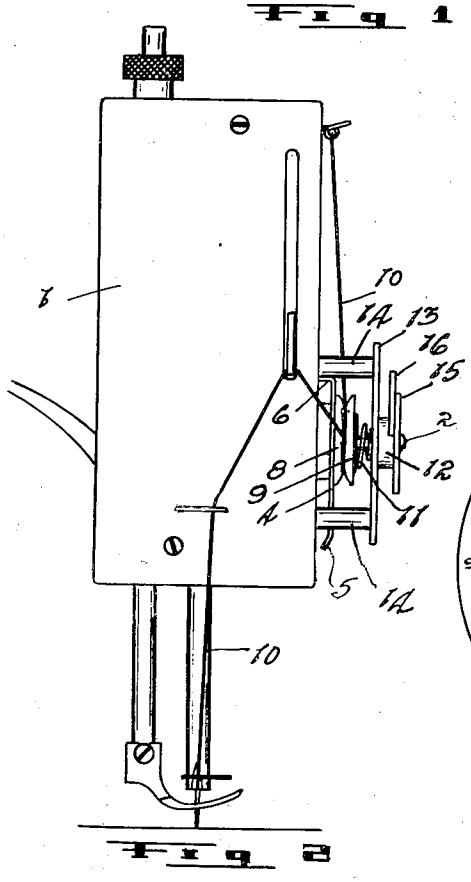

Fig 2

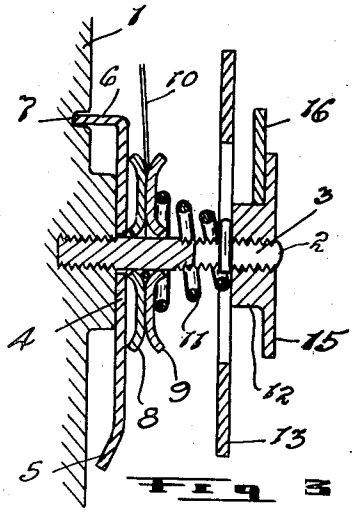

Fig 3

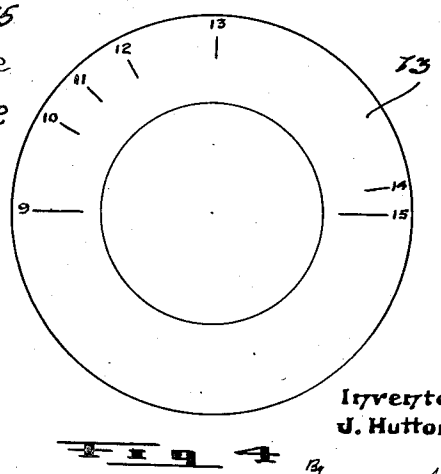

Fig 4

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TENSION INDICATOR FOR SEWING MACHINES

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1 Claim. (Cl. 242—150)

The invention relates to improvements in tension indicators for sewing machines and an object of the invention is to provide a simply constructed inexpensive and durable device which can be easily and accurately set by the operator to insure of a desired thread tension depending on the nature of the work being done, it being understood that primarily the operator will be provided with a chart or an instruction sheet indicating settings for certain classes of work although this may be dispensed with as the operator gains experience.

A further object is to construct the invention so that it can be installed on existing sewing machines with but little added expense or change in existing structure.

A more detailed object of the invention is to provide a tension indicator which presents a stationary numbered dial and a pointer which latter can be set in respect to the dial to give at each setting point a desired tension for a certain class of work.

With the above more important objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawing, in which:—

Fig. 1 is a front view of a portion of a sewing machine equipped with my invention.

Fig. 2 is an enlarged detailed side view of the device.

Fig. 3 is an enlarged detailed vertical sectional view at 3—3 Figure 1.

Fig. 4 is an enlarged detailed face view of the dial.

In the drawing like characters of reference indicate corresponding parts in the several figures.

At the present time, sewing machines are provided with various devices for tensioning the thread used and the operator has to more or less guess at the setting as there is not as far as I am aware any visible indicator which permits of the ready and accurate setting of the tensioning means.

The customary hollow vertical head 1 of the sewing machine is at present supplied with a horizontally disposed stationary spindle 2 which has the outer end screw threaded and split longitudinally as indicated at 3.

On the inner end of the spindle, a plate 4 is loosely mounted and the plate is supplied at the under side with a downwardly extending lever 5 and at the top side with an inwardly extending finger 6 which finger enters a hole 7 in the head and acts to prevent rotary movement of the plate on the spindle. The arrangement is such that one can rock the plate on the spindle by pulling the lower end of the lever forwardly.

The spindle carries also in advance of the plate, a pair of cupped discs 8 and 9 placed with their rounded faces facing one another and it is between these discs that the customary thread 10 used for sewing purposes passes, the thread being tensioned between the discs by the action of a coiled spring 11 mounted on the spindle and having the inner end engaging the outer disc and the other end engaging a thumb nut 12 screw threaded on the outer end of the spindle.

The above parts are of ordinary construction and obviously there is nothing to visibly indicate to the user just where to set the thumb nut in order to obtain the proper tensioning of the thread for any particular class of sewing to be done.

According to my invention, I supply the sewing machine with a stationary annular dial 13 which is mounted concentric to the spindle and is carried by two legs 14 suitably secured to the dial and head 1. The thumb nut 12 previously mentioned is utilized to carry a circular setting plate 15 having a somewhat less diameter than the internal diameter of the dial and the setting plate is provided with a pointer 16 adapted to operate over the dial. At present the thumb nut carries no plate but in my case, the setting plate would be integrally formed with the nut so that the nut actually becomes a screw threaded hub carried by the latter plate.

When this device is initially made, one will initially test it by sewing the different classes of goods and by using different threads with those goods. For example, a relatively coarse thread will be used normally in sewing heavy coating and under such conditions, it will be found that a relatively light tensioning of the thread is desired whereas, on the other hand, where silks, muslins and other fine goods are being sewn, a fine thread will require to be used and a heavier tensioning and in between these, there will be other tensioning settings for broadcloth, tweed, linen, cotton, shirting and so forth.

After it has been determined by actual test just what setting of the pointer in relation to the dial is most desirable under the various normal sewing conditions met with in the average household, one will mark the dial at the found points and will then definitely indicate these points by numbers such as 9, 10, 11, 12, 13, 14 and 15 as herein shown and may place intermediate marks

between the major markings for other possibilities. Having done this, a chart or instruction sheet will be also supplied and on this, the numbers appearing on the dial will be placed and opposite these numbers will be given a definite explanation of the nature of the goods and the kind of thread to be used when sewing at such setting. After a time, the operator will become accustomed to the numbers and will then of course not require to refer to the chart.

To make the matter quite clear, I might now give a few examples. If one is to sew say a heavy coating material and with a number forty thread, he will set the pointer at **10** on the dial and will then proceed to sew and it will be found that with such setting a proper tensioning of the thread is obtained.

If he is sewing broadcloth, tweed and coarse linen, he will set the pointer at **10½**. If he is sewing cotton, he will set it at **11**. If he is sewing cotton shirting, he will set it at **12** and if sewing silk or muslin, he will set it at **14¾**. Obviously the particular markings used on the dial are optional but when once selected, any chosen marking must give the proper tensioning of the thread for the particular goods to be sewn at that indicating mark and as set by the pointer. The first mark on the dial, and indicated herein by the number **9**, represents the position of the parts when the inner face of the setting plate **15** first engages the outer end of the spring and would actually indicate zero tension.

What I claim as my invention is:—

The combination with the head of a sewing machine, a spindle secured to and extending outwardly from the head and a thread tensioning device carried by the spindle and embodying an adjusting nut screw threaded on the outer end of the spindle and adapted when rotated to vary the tension of the thread, of an annular dial positioned concentric to and receiving the forward end of the spindle and having the opening therein of greater diameter than the nut and the front face thereof provided with a graduated scale indicating desirable and predetermined thread tensions, spacing legs permanently supporting the dial from the head and a pointer secured to the nut to rotate therewith over the front face of the dial.

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