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THREAD-GUIDE PARTICULARLY FOR EMBROIDERY MACHINES

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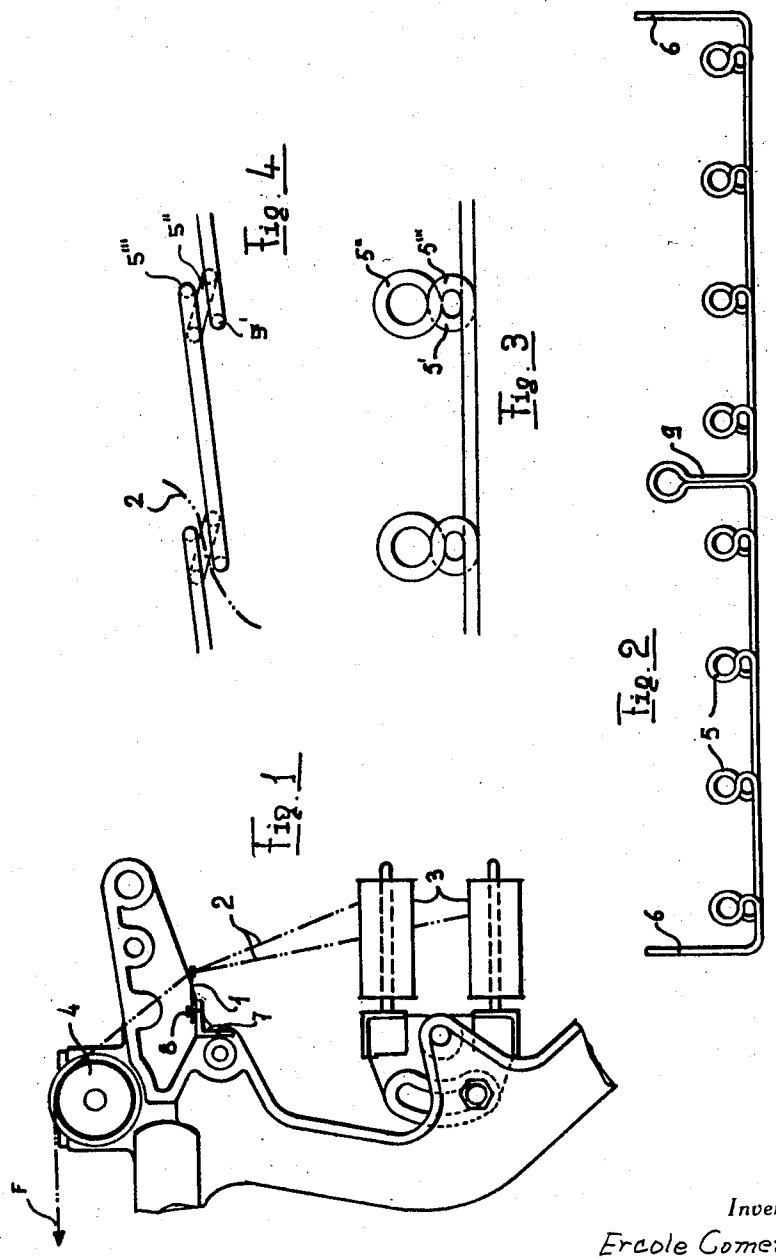

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THREAD-GUIDE PARTICULARLY FOR EMBROIDERY MACHINES

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In the machines for textile industry, and particularly in embroidery machines, the guide of the threads coming from the feeding reels is encharged to a series of holes in a metal bar, each hole corresponding to a thread reel, that is to a needle. Said holes have cut-off smooth corners in order to avoid that the thread may be braked or hooked by their walls.

The main drawbacks in said thread-guide, besides the fairly complicated and in any case expensive construction, are the difficulties met in its practical employ; as a matter of fact the ends of the threads unwound by the reels must be made to pass, at the beginning of the operation of the machine or whenever a thread breaks, through the holes of the bar which have a diameter of about 2 or 3 mm., same as into the eyelet of a needle, which causes a remarkable waste of time, especially in consideration of the great number of threads (up to over a thousand in certain types of machines).

The object of the present invention is a thread guide which provides the remarkable advantage of permitting a very quick insertion of the threads therein and the possibility of being manufactured at a relatively low cost; the thread guide is characterized in that it consists of a metal wire bent on itself at preset intervals so as to form as many open eyelets through which the threads pass, the ends of said wire being bent at right angle in order to fix the thread-guide to the machine framework. The thread-guide is preferably realized in sections of a length inferior to the necessary total length, which sections are then mounted onto a common supporting bar.

The said thread-guide will now be described with reference to the accompanying drawing in which:

FIG. 1 is a cross section of a portion of the machine, comprising the thread-guide according to the invention;

FIG. 2 is a plan view of a complete section of the thread-guide;

FIGS. 3 and 4 are a plan view and a front view respectively, in enlarged scale, of a pair of eyelets of a thread-guide section.

In FIG. 1 is clearly seen the part of the machine where the thread-guide 1 is located; the threads 2 which unwind from the reels 3, are each made to pass through one of the eyelets of the thread-guide 1, and then are wound, for at least one revolution, on a roller 4 having a ground surface, which by a slow rotating movement causes the unwinding thereof from the reels, in order to feed the needle.

FIG. 2 clearly shows a section of the thread-guide providing a certain number of eyelets 5 each consisting of an 8-shaped winding of the metal wire by which said thread-guide is made. As can be better seen in FIGS. 3 and 4 each eyelet consists of a first half-loop 5', of a

loop 5'', and of a second half-loop 5''', axially spaced from the first half-loop. The thread 2 is threaded into the eyelet 5 passing between the two half-loops 5' and 5''' in the way shown in FIG. 4; in working position the thread then sets in a position substantially perpendicular to the plane of the eyelet 5 and is kept therein by the working tension of the thread, which is exerted in the direction of the arrow F.

For simplicity the length of each section of the thread-guide is inferior to the length of the machine; at its ends each section shows parts 6 bent substantially at right angle with respect to the plan direction of the thread-guide, by means of which the thread-guide itself is fixed to a supporting bar 7 through simple screws 8 having a large head (FIG. 1).

However it is possible to make thread-guide sections of a greater length, providing them at intervals with stiffening bents 9 (FIG. 2) apt to supply a supplementary fixing point onto the bar 7.

What I claim is:

1. A thread guide device formed of wire material, particularly for embroidery machine, comprising a first thread guiding eyelet formed by a full loop of wire with overlapping ends on one side thereof, and two half loops each connected to one of said overlapping ends and disposed in opposite facing directions and superimposed one upon the other to form a second eyelet adjacent said first eyelet, said half loops being slightly spaced from each other to permit a thread to be introduced between said half loops and into said first eyelet.

2. A thread guide device comprising a plurality of thread guides according to claim 1, the thread guides being made from a continuous length of metal wire and being spaced at preset distances along the length of said wire.

3. A thread guide device according to claim 2, wherein the metal wire material has two ends and is provided at said ends with right-angle bends for fixing the wire onto a machine frame.

4. A thread guide device according to claim 3, wherein said length of wire is provided intermediate its ends with at least one right-angular projection for assisting in fixing the wire onto a machine frame.

5. A thread guide device, particularly for embroidering machines, formed from a continuous length of wire-like material and comprising a first thread-guiding eyelet constituted by a full loop of the wire and having overlapping, laterally spaced apart end portions, and a second thread-guiding eyelet constituted by semicircular prolongations of said end portions, said second thread-guiding eyelet having overlapping, laterally spaced apart end portions and straight sections of the material connected to said last named end portions.

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