Feb. 4, 1941. H. O. NELSON 2,230,652

METHOD OF MAKING THREAD GUIDES

Filed July 25, 1939

Fig. 1.

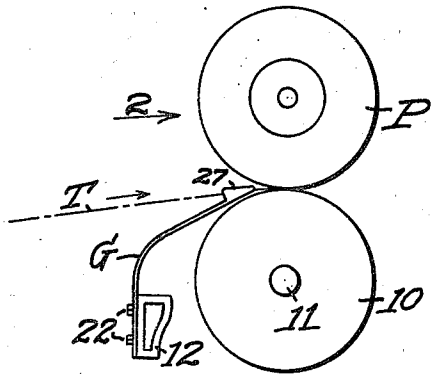


Fig. 2.

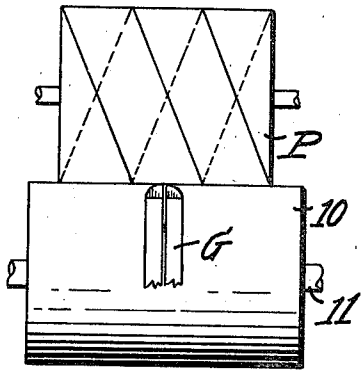


Fig. 3.

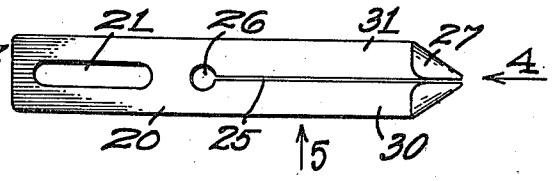


Fig. 4.

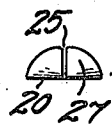


Fig. 5.

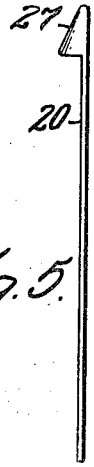


Fig. 6.

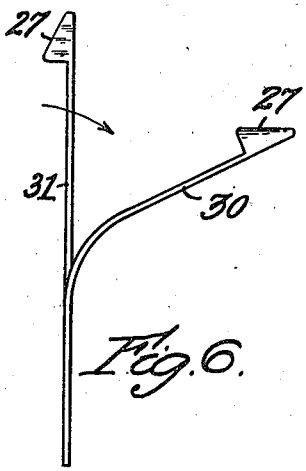


Fig. 7.

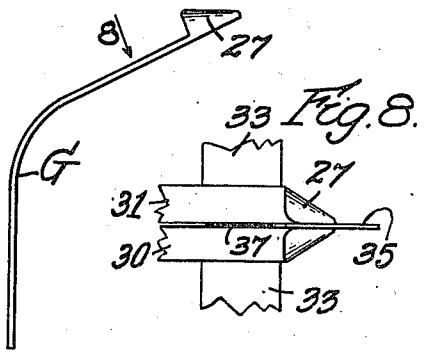


Fig. 8.

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UNITED STATES PATENT OFFICE

2,230,652

METHOD OF MAKING THREAD GUIDES

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Application July 25, 1939, Serial No. 286,414

3 Claims. (Cl. 29—170)

This invention relates to thread guides, and particularly to guides used in machines for winding or packaging silk, rayon or other fine threads. In such guides as commonly used, the thread is passed through a narrow slot between metal side walls, which walls should present smooth surfaces to prevent chaffing or breaking of the thread, which is drawn through the slot at very high speed. In such guides, also, the width of the slot with reference to the thread size should be accurately determined and carefully maintained.

It is the general object of my invention to provide an improved thread guide in which accurate slot width and exceptional surface finish are easily and economically attained. I also provide a new and effective method of producing my improved thread guide and of conveniently repairing or reconditioning the same.

My invention further relates to arrangements and combinations of parts which will be hereinafter set forth and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawing, in which

Fig. 1 is an end elevation of parts of a winding machine in which my improved guide may be used;

Fig. 2 is a front elevation, looking in the direction of the arrow 2 in Fig. 1;

Fig. 3 is a plan view of my improved thread guide before finishing and bending to shape;

Figs. 4 and 5 are end and side views, looking in the direction of the arrows 4 and 5 in Fig. 3;

Fig. 6 is a view similar to Fig. 5 but showing certain parts in a different position;

Fig. 7 is a side elevation of the finished guide; and

Fig. 8 is a detail view, looking in the direction of the arrow 8 in Fig. 7.

My improved thread guide is particularly designed for use in a winding or packaging machine as indicated in Figs. 1 and 2, which show a driven winding roll 10 and shaft 11, a traverse bar 12, a thread guide G and a thread T which is being wound into a cylindrical package P. All of these parts may be of usual commercial construction, except for the specific structure and method of construction of the thread guide G, which will be hereinafter described.

In the manufacture of my improved guide, I first form a steel blank 20 as shown in Fig. 3, which blank is slotted at 21 for attachment by screws 22 to the traverse bar 12. The opposite end of the blank 20 is of increased thickness, and is subjected to a sawing or milling operation to provide a narrow slot 25 which may terminate in a round hole 26.

After forming the blank 20 as shown in Figs. 3 to 5, the end portions 27 are hardened by any suitable process. One side portion 30 of the blank 20 is then bent to the position shown in Fig. 6, while the other side portion 31 remains in its original position. The sawed or milled inner surfaces of the end portions 27 are then carefully finished by grinding and polishing until a satisfactory and exceptionally smooth surface is attained.

The side portion 31 is then bent downward alongside the portion 30, as indicated in Fig. 7, after which the guide G is secured in a clamp or jig 33, with the two parts 27 held at the desired distance apart by an inserted gauge 35 or in some other convenient manner.

While the parts are thus held and accurately positioned, I secure the portions 30 and 31 firmly together by soldering or brazing as indicated at 37. I thus attain a thread guide having the guiding faces of the portions 27 highly polished and accurately spaced apart. If these faces become worn or roughened by long continued use, the solder or brass may be easily melted, the parts returned to the position shown in Fig. 6, the inner faces repolished, and the guide may then be clamped and soldered or brazed, all as previously described, thus making the worn guide exactly as good as new and capable of further long-continued use.

The novel thread guide disclosed is not claimed herein as it forms the subject matter of a divisional application Serial No. 357,525, filed by me September 20, 1940.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. The method of making a thread guide with a slotted out-turned thread-guiding end part which comprises forming a substantially flat metal blank with a thickened end part, slotting said end part and a portion of said blank adjacent said end part, bending one thread-engaging portion of said end part out of the plane of the blank and substantially away from the other end portion and to a new and self-retained position, smoothly finishing the thread-guiding faces of both portions of said end part while separated and positioned in different but parallel planes, bringing said end portions to adjacent thread-guiding relation, setting the transverse distance between the parallel thread-guiding faces of said

end portions to an inserted gauge, and securing said end portions together while in gauged relation by application of extraneous metal thereto.

2. The method of making a thread guide with a slotted out-turned thread-guiding end part which comprises forming a substantially flat metal blank with a thickened end part, slotting said end part and a portion of said blank adjacent said end part, hardening said slotted end part, bending one thread-engaging portion of said end part substantially away from the other end portion and out of the plane of the blank to a new and self-retained position, smoothly finishing the parallel thread-guiding faces of both portions of said end part while thus separated but positioned in parallel planes, bringing said end portions to adjacent thread-guiding relation, setting the transverse separation between the parallel thread-guiding faces of said end portions to an inserted gauge, and securing said end portions together while in gauged relation by application of extraneous metal thereto.

3. The method of making a thread guide with a slotted out-turned thread-guiding end part which comprises forming a substantially flat metal blank with a thickened end part, slotting said end part and a portion of said blank adjacent said end part, hardening said slotted end part, bending one thread-engaging portion of said end part out of the plane of the blank and substantially to operative thread-guiding position and substantially away from the other end portion, said displaced end portion being permanently located in its new and operative position, smoothly finishing the parallel thread-guiding faces of both portions of said end part while thus separated but positioned in parallel planes, bending the second end portion to thread-guiding operative position adjacent said first portion, setting the transverse separation between the parallel thread-guiding faces of said end portions to an inserted gauge, and securing said parts together while held in gauged relation by application of extraneous metal thereto.

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