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R. T. HOSKING

1,754,466

MATERIAL STRIP FOR USE IN THE MANUFACTURE OF LOCK WASHERS

Filed Dec. 16, 1927

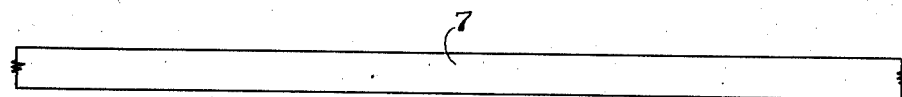


Fig. 1

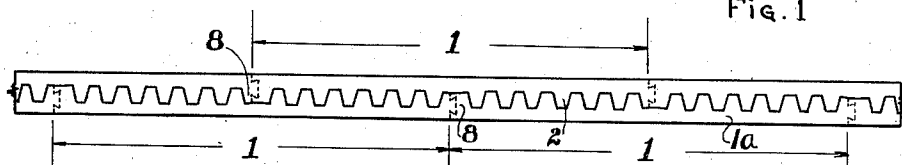


Fig. 2

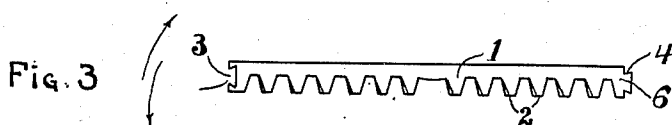


Fig. 3

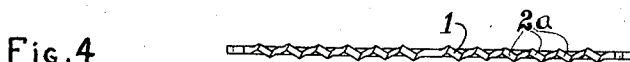


Fig. 4



Fig. 5

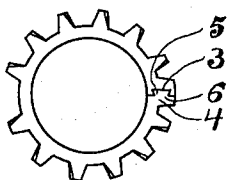


Fig. 6

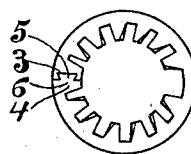


Fig. 7

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RICHARD T. HOSKING, OF WILMETTE, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS,
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MATERIAL STRIP FOR USE IN THE MANUFACTURE OF LOCK WASHERS

Application filed December 16, 1927. Serial No. 240,394.

This invention is a novel article of manufacture consisting of a piece of shaped metal that constitutes a base material or stock from which twisted prong lock washers may be produced.

An illustration of a type of washer that can be easily manufactured from this base material is described in my copending application for method of making lock washers, filed December 16, 1927, Serial No. 240,392.

A further example of this type of washer is shown in my Patent No. 1,419,564, issued June 13, 1922.

The object of the present invention is to supply stock material for lock washers made in such shape that it can be easily and quickly converted from the form of a flat strip into lock washers, either of the internal or external toothed type, and if desired lock washers of different sizes may be made from the same stock strip.

Another object is to provide a pronged stock strip of such shape that two of them can easily be made from one band or strip of ribbon metal, and that without any waste of material.

Washers as articles of manufacture, made from stock strips such as are claimed herein, are set forth in my co-pending application filed December 16, 1927, Serial No. 240,393. In that application I have described the stock strips of the present case, but did not claim therein the stock strip as, per se, an article of manufacture. This application may, therefore, be considered a continuation-in-part of the last mentioned application.

With the foregoing and certain other objects in view, which will appear later in the specifications, my invention comprises the devices described and claimed and the equivalents thereof.

In the drawings Fig. 1 is a plan view of a fragment of ribbon metal from which two stock strips can be made.

Fig. 2 is a similar view illustrating the way of producing from a piece of ribbon metal, by a continuous series of zigzag shearing cuts, two straight stock strips with serrated edges forming regular prongs.

Fig. 3 is a plan view of a piece of a prong

strip sufficient to make one washer, the end prongs of the strip formed to produce complementary joint members.

Fig. 4 is an edge view of the pieces shown in Fig. 3 with all of the intermediate teeth twisted.

Fig. 5 is a similar view, showing some only of the intermediate teeth twisted, the remainder flat.

Figs. 6 and 7 are respectively external toothed and internal toothed washers made from the pronged stock piece of Fig. 3.

As is clearly shown in the drawings, the stock strip 1 is a straight strip made from ribbon metal, or spring material as steel or bronze, and formed with an edge serrated to define regular prongs or teeth 2. Certain of the prongs are twisted as at 2^a and certain others as 2^b are left not twisted, or if desired all of the prongs may be twisted, as shown in Fig. 4.

The holding power of the teeth in a completed washer is greater as the number of twisted teeth increases, so that by twisting a greater or lesser number of the prongs on the straight strip 1 the washers made therefrom will have greater or less locking strength.

The prongs 2^a and 2^b, as usual in washers of this kind, are twisted so as to cause their corners 2^c to project out of the plane of the strip 1. The prongs 3 and 4 at the ends of each washer-length of strip are preferably wider than the other prongs 2^a, 2^b and are formed with complementary joint members 5 and 6 adapted to lock together by interlapping when the strip 1 is bent as indicated by the arrows in Fig. 3, into the form of an annular ring, as shown in Figs. 6 and 7.

The stock strip 1, of spring material considered as the base material from which twisted prong lock washers can be made constitutes the claimed subject-matter of the invention.

To make such strips easily and rapidly I prefer to provide a long piece of metal ribbon stock 7, punching from it two stock strips 1 and 1^a having serrated complementary edges forming a series of regular narrow prongs and two intermediate relatively wider prongs 8. Each wider prong 8 is then severed as indi-

cated by dotted lines in Fig. 2 to form the interlocking joint members 5, 6 above described.

By the means above described I have produced a thin stock strip capable of being easily manufactured on roll dies and from which both internal and external lock washers can be made. It can be used immediately in the manufacture of washers, or the base material strip may be coiled and stored for future use. So far as I am aware, this is the first instance in the art of manufacturing regular pronged washers of a straight pronged stock strip that can be made to produce at will either internal or external axially twisted teeth.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

A base material strip for use in the manufacture of lock washers, comprising a ribbon of flexible metal capable of being bent to annular form in its own plane and hardened, said ribbon formed along a longitudinal edge with regular prongs having end portions whose width and thickness are substantially equal, said prongs alternating with spaces substantially equal in width to the width of the prongs, said prongs twisted around their longitudinal axes to present biting edges that project beyond the planes of the faces in the strip, in opposite directions.

In testimony whereof, I affix my signature.

RICHARD T. HOSKING.