Dec. 18, 1934. P. C. WENTWORTH 1,984,779

TRAVELER

Filed April 11, 1934

Fig. 1

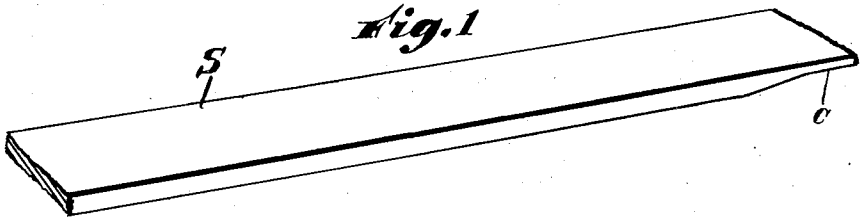


Fig. 2

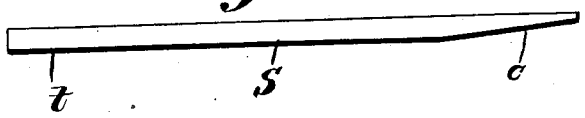


Fig. 3

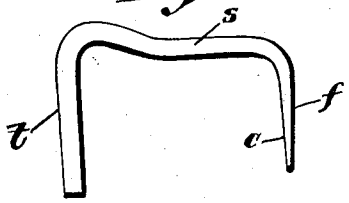


Fig. 4

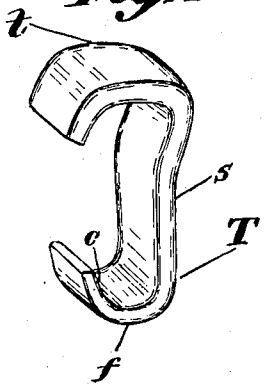
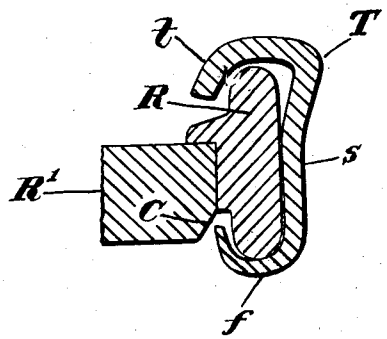


Fig. 5



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TRAVELER

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Application April 11, 1934, Serial No. 720,089

5 Claims. (Cl. 118—61)

My present invention relates to twister travelers and particularly to twister travelers of narrow width and greater than normal thickness. Such travelers have been found of high efficiency in the manufacture of certain materials such as those used in tire fabric.

Considerable difficulty has been experienced in shaping these narrow thick wire travelers so that they will run properly on the usual vertical ring. Such rings are set in rails with a so-called counterbore in the ring rail under face which forms the zone of travel of the foot of the traveler.

As the foot provides the major point of contact in twisting, its freedom of movement is of the greatest importance in maintaining proper traveler posture on the ring.

My concept is to provide for maximum thicknesses in such twister travelers and yet provide for a foot that will have free clearance and full inward bend necessary to afford a proper foot contact and escape the counterbore and in proper relation to the overhang of the upper hook.

The construction of such a traveler, as well as its method of manufacture is indicated in the accompanying drawing to which reference is made in the following specification.

Throughout the specification and drawing like reference numerals are employed to indicate corresponding parts, and in the drawing:

Fig. 1 indicates a strip of stock in accordance with my invention showing the point or end of the blank compacted and hardened.

Fig. 2 is a view showing a severed blank.

Fig. 3 is a view of a partly formed blank.

Fig. 4 shows the finished traveler, and

Fig. 5 is a section through such a traveler and section of ring.

Referring to my traveler T as shown in Fig. 4, it is shown as one generally of well known type but sharply distinguished in the matter of the relative thickness of the parts. In the region of the upper hook or overhang *t* it is of maximum thickness. This thickness as above suggested is desired to be considerably in excess of the gage of wire used for a wide traveler of the same type. This gives plenty of stock for wear which is important in such articles which are made of relatively soft alloys as distinguished from the stock used in ring travelers. This thickness is carried down into the shank *s* to give proper weight and posture.

In the foot portion *f* of travelers according to my invention, I provide a taper which comes to a relatively narrow edge. As before explained, the foot of the twister traveler is a most important factor. Its bend must be such as to bring it within the overhang of the upper hook and its point well within the counter-bore of ring rail when on the ring, so that the traveler will have a secure and definite engagement with the ring.

Again, there is the problem of wear on the foot, I provide for this by imparting a surface hardness to the point portion which I am able to do on account of the abnormal thickness of the stock. This thickness, which gives me the advantages of the thick narrow hook *t* and shank *s* provides a hardening factor which I utilize by compressing the stock at the foot end by subjecting it to a heavy impact.

Considering my invention from the method aspect, I have indicated in the drawing the successive steps involved and have schematically indicated convenient apparatus for producing these twister travelers, rapidly and accurately and with the desired form and finish and particularly with the characteristic pointing of the foot.

As indicated in Fig. 1, the stock S is compressed and hardened as by dies (not shown) which produces a series of compressions *c* in one face of the wire. These compressed and hardened portions of the foot edge define the thicker intermediate portions which are to form the upper hook *t* and shank *s* of the ultimate traveler T.

This forming is done by usual dies which cut off and bend the stock. After I compress the stock or blank for the foot I partially form it as shown in Fig. 3, forming the curve in the back or shank *s* but leaving the stock of the upper hook and foot as straight prongs connected thereto by a rounding band to substantially right angles. This preforming of the blank makes it possible to get the foot portion of the traveler bent well under the overhang of the hook portion and makes the final finishing step possible. In this the formation of the foot is carried out by completing the bend to dispose the narrow and hardened edge of the foot *f* within the counterbore C of the rail R^1 when the traveler is on the ring R.

Twister travelers of various types or forms may be produced in accordance with my invention and provided with the thick upper hook and shank and the narrow hard edge foot.

What I therefore claim and desire to secure by Letters Patent is:—

1. For use of a vertical twister ring machine wherein a rail has an under counterbore, a trav-

eler of greater thickness than the rail counterbore in its top flange, and a relatively thinner foot having its point adapted to be disposed in the zone of said bore when on the ring.

2. For use of a vertical twister ring machine wherein a rail has an under counterbore, a traveler of greater thickness than the rail counterbore in its top flange, and a relatively thinner tapered foot having its point adapted to be disposed in the zone of said bore when on the ring.

3. A twister traveler for use on a vertical ring adapted to be mounted in a rail having an under counterbore, said traveler comprising a top flange of greater thickness than the rail counterbore, and a relatively thinner tapered foot having its point provided with a transverse indentation defining a terminal bead adapted to be disposed in the zone of said counterbore when on the ring.

4. In combination with a vertical twisting ring adapted to be mounted in a rail having a surrounding counterbore underneath, a traveler comprising a top flange of greater thickness than the rail counterbore, and a relatively thinner foot having its point disposed in the zone of said counterbore.

5. In combination with a vertical twisting ring adapted to be mounted in a ring rail having an under counterbore, a traveler comprising a top flange of greater thickness than the ring rail counterbore and a relatively thinner tapered foot having its point disposed in the zone of the counterbore.

PHILIP C. WENTWORTH.