

Oct. 20, 1925.

J. P. M. MALLEVILLE

1,557,718

CLAMPING BAND

Filed Sept. 16, 1924

Fig. 1.

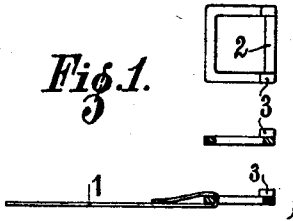


Fig. 2.

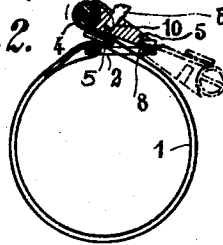


Fig. 3.

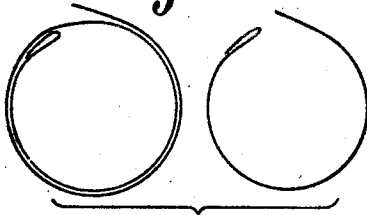


Fig. 7.

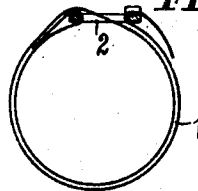


Fig. 8.

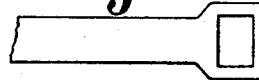


Fig. 9.

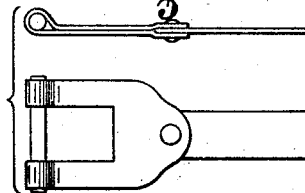


Fig. 4.

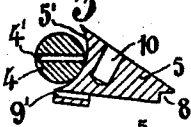


Fig. 5.

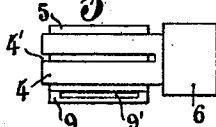


Fig. 6.

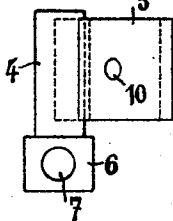


Fig. 10.

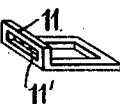


Fig. 13.

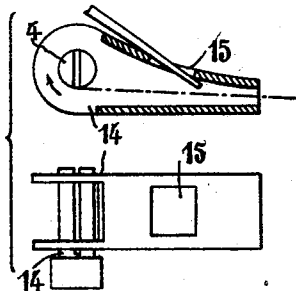


Fig. 11.

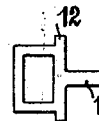
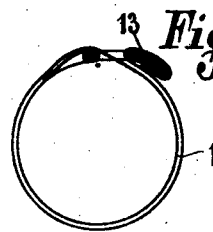


Fig. 12.



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UNITED STATES PATENT OFFICE.

JEAN PAUL MARIE MALLEVILLE, OF PARIS, FRANCE.

CLAMPING BAND.

Application filed September 16, 1924. Serial No. 738,104.

To all whom it may concern:

Be it known that I, JEAN PAUL MARIE MALLEVILLE, a citizen of France, and a resident of 142 Avenue de Versailles, Paris, France, have invented some new and useful Improvements in a Clamping Band, of which the following is the specification.

This invention relates to clamping bands or universal clips consisting of a strip of metal, the tension of which is obtained by coiling the said strip round a pin, roller, or a similar part.

Generally the part of the clip employed for the purpose of stretching the strip, often projects to such an extent as to constitute a serious inconvenience, for instance in the case of hose-pipes used for watering purposes.

The assembly of parts employed for stretching the strip constitutes the most expensive part of the clip, and is used only for maintaining tension, once the latter has been effected.

The purpose of this invention is to provide means for removing from the strip the assembly of tightening parts, once the stretching operation has been carried out, and to render the said parts available for putting another clip under tension.

The strip then remains tightened without the assistance of any tightening parts. These parts can, however, be left where they are fitted or fitted on again after having been withdrawn, as required, if it is desired to increase the tension originally produced.

Broadly, according to the present invention, in clamping bands of the nature set forth, there is employed a strip of metal with a slotted or shackled end and a free end, and detachable tightening means to grip the free end, put it under tension, and bend it over the slotted end.

On the drawing attached hereto, and to which reference is made, several forms of execution of the subject-matter of this present invention are shown by way of examples.

Figure 1 shows a fitting of standard type employed as a part for connecting the two ends of the strip to be tightened.

Figure 2 shows a strip with its tightening parts according to this invention, during and after the tightening operation.

Figure 3 shows separately two modes of coiling up the strip, i. e. double and simple coiling up.

Figures 4, 5 and 6 show different views of details of the stretching parts to a larger scale.

Figure 7 shows the appearance of the tightened clip, after removal of the stretching parts.

Figure 8 is a detail plan of a modified form of the strip.

Figure 9 is a plan and side elevation of another modified form of same.

Figure 10 is a detail perspective view of a modified form of the fitting.

Figure 11 is a plan of another modified form of fitting.

Figure 12 is a sectional view of a modified form of the invention.

Figure 13 is a section and a plan of another modified form of the circuit or bending element.

In accordance with this present invention as shown in Figures 1-7, and if use be made of a metal strip 1 of uniform width and indefinite length, one of the ends of the strip is clamped to a shackle or fitting 2 provided with an opening, and of quadrangular form, which is employed as a part for connecting the two ends of the strip.

This fitting, provided with an opening, has projections or stops 3, which act as supports for the stretching device.

This device is detachable and consists of a pin 4 on which the strip is to be coiled, and a support 5 on which rests the pin or spindle whilst the strip is being coiled round the said pin.

This spindle 4 is provided with a slot 4' inside which is clamped the free end of the strip, and with a head 6 with a hole 7 for the purpose of holding a tommy or a similar part employed for working the pin in the required direction.

Whilst the pin 4 is thus being rotated, the strip slides under the support 5 which is

inserted between the said pin and the stops of the fitting provided with an opening, and the said support is held by the pressure of the pin in the groove 5¹, the edge 8 of the support engaging with the stops 3, which provide the said support with points of bearing.

The bottom part of the support is, moreover, provided with a projection 9 in which is made a slot 9¹ through which passes the strip prior to its being wound round the pin, whilst in the upper part of the said support is made a hole 10 in which fits a rod B, the purpose of which is to hold the support whilst the pin is being rotated.

The strip is coiled up once or twice, according to the tightening to be obtained (Figure 3).

If use is made of the double coiling device shown by Figure 2, it will be observed that the strip is clamped to the shackle 2, that the said strip is wound round the article to be held (which is not shown), and passes through the inner opening of the said shackle, whereafter it is wound round the first coil, passes through opening 9¹, and lastly coiled round pin 4. In this arrangement the strip is wound and tightened by rotation, in the direction shown by the arrow, of the pin which rests against the support, which is held, in its turn, by the rod B.

Once the required degree of tension has been obtained the support is no longer held by means of rod B, but the pin is further worked. The support then rotates round its points of bearing at 3, 3, and the strip becomes clamped and interlocked by bending round the bar of the shackle 2.

The tightening operation having thus been carried out and finished on the article to be fixed, the tension producing parts (pin and support) may be left in the positions which they respectively occupy on the strip (shown by dotted lines), as stated in the opening paragraphs. As it may, however, be useful to remove these parts whilst keeping the strip tightened, either with a view to decreasing the space occupied, or with a view to making use of the said parts for the purpose of tightening up another strip, the support and pin can then be readily removed and final operation of bending the strip over can be carried out, if required. Figure 7 shows in particular, the appearance of a strip as fitted on, after removal of the tension producing parts.

In view of the fact that this present invention is not restricted to the form of the parts shown, it will be optional to make use of strips fitted with heads consisting of a widened section at one end, as shown by Figure 8, the said section being fitted with a rectangular opening, which is employed for the same purposes as the fitting referred to above. When use is made of strips with a

widened end, the latter may be attached on the strip and strengthened to a certain extent, as shown by Figure 9.

The fitting may also consist (Figure 10) of a rectangular end 11 for the same purposes as the stops 3, provided with a slot 11¹ through which the strip is fitted for the last operation. In accordance with a further alternative mode of execution, this fitting may be given the shape shown by Figure 11, with lateral projections 12 providing the support with points of bearing as with the projections 3, 3, in Figures 1-7, and with a central tongue 13, for the purpose of holding the end of the strip after the tightening operation, and after removal of the tension producing parts.

Figure 12 shows a mode of execution of this kind, in which the end of the strip is kept held against the article secured, and then brought back below the tongue 13, with a view to preventing the said strip from being accidentally turned up again.

Figure 13 shows an alternative mode of execution in which the pin 4 rotates in the lugs 14 of a part cut out from the support and shaped as a yoke, this part being provided with an opening 15 through which can be fitted a point or handling device of any description, which plays the part of a holding rod during the operation of coiling up the strip. In this case the support is hollow, and its interior is made use of for the purpose of fitting the strip through. This mode of execution, as shown by the drawing, can, moreover, be varied in accordance with the requirements of manufacture, whether for cutting out, stamping, die-shaping, casting, or other purpose.

The pin itself, instead of being provided with a hole such as 7 for receiving a manipulating rod, can be made with a slot, or with a head having a certain number of faces, or with wings, et cetera, and the choice of one of these designs will be determined solely by the purposes in view.

I claim:

1. In clamping bands, a strip of metal with a slotted end and a free end, and detachable tightening means pivotally mounted on the slotted end and arranged to grip the free end, pull it and bend it over the slotted end.

2. In clamping bands, in combination a metal strip having a slotted end and a free end to pass therethrough and to be interlocked therewith, a device detachably mounted on the slotted end and arranged for the attachment of the free end thereto to grip said free end, pull the same and bend it over the slotted end.

3. In a clamping band, an end formed with an opening having raised bearing elements, a support with means to abut against said bearing elements means to hold a spin-

dle and means to guide a free end of the band, gripping means on the spindle to form an anchorage for said free end, means to rotate the spindle and pull the free end taut whilst the other end is held against the support, and means to swing the support and spindle combination about the open end of the band to bend and lock same under tension.

10 4. In a clamping band, a springy metal strip, a quadrangular shackle secured to one end and having bearing points, and a detachably tensioning device comprising a spindle, and a spindle-support seated between the spindle and the said bearing points, a slotted element to said spindle-support through which a free end of the band is guided and then clamped to the spindle, means to rotate the spindle and tighten the band, and means to hold the spindle-support during this operation.

In witness whereof I affix my signature.

JEAN PAUL MARIE MALLEVILLE.