

J. W. LESLIE.
REINFORCING GIRTH.
APPLICATION FILED MAR. 15, 1920.

1,399,063.

Patented Dec. 6, 1921.

Fig. 1.

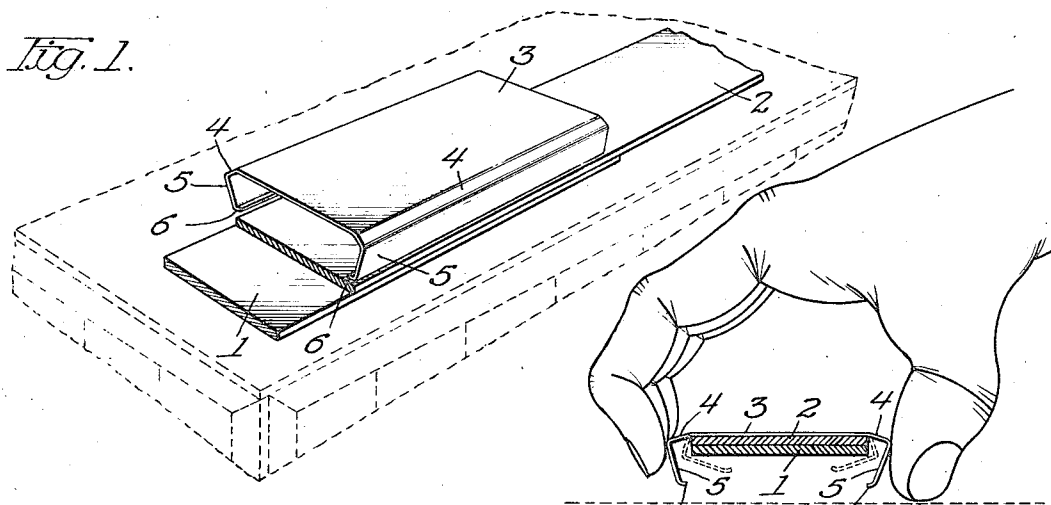


Fig. 4.

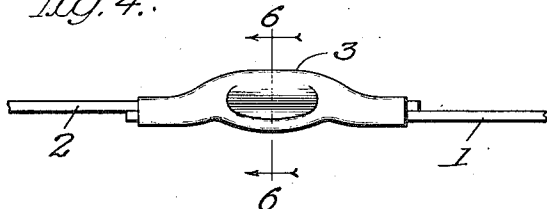


Fig. 2.

Fig. 3.

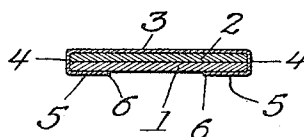


Fig. 5.

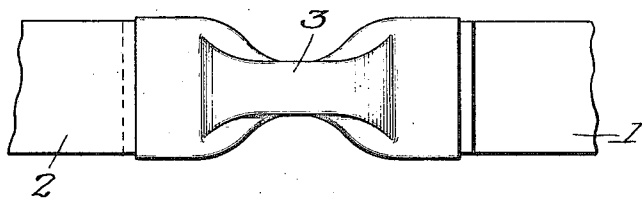
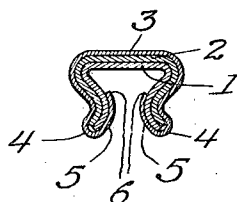


Fig. 6.



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UNITED STATES PATENT OFFICE.

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REINFORCING-GIRTH.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN W. LESLIE, a citizen of the United States, residing at Evanston, in the county of Cook, State of Illinois, have invented an improvement in Reinforcing-Girths, of which the following is a specification.

This invention relates to reinforcing girths for use in forming joints in metallic tensional box binders, known as "box strap," or the like and has for its object the production of a girth of simple and economical construction, having among others the advantages in application and use, hereinafter more specifically pointed out.

In the drawings, which constitute merely an illustrative embodiment of the invention:

Figure 1 is a perspective view showing my new reinforcing girth in process of being applied to mutually overlapped strap ends.

Fig. 2 is a cross sectional view showing the girth in a later stage of its application and illustrating the manual compression thereof in the process of application.

Fig. 3 is a cross sectional view showing the girth and a succeeding stage in the process of forming the joint.

Fig. 4 is a side elevation of the joint which may be formed with my girth.

Fig. 5 is a plan view of the joint.

Fig. 6 is a cross sectional view of the joint on the line 6—6 of Fig. 4.

In the drawings, reference being had to Fig. 1, a flat metallic tensional box strap is shown, having its ends in their relative position when the binder is applied about a box or package, with its ends 1 and 2 overlapped and in alinement. The reinforcing girth of my invention is adapted to be applied to these overlapped ends and then involved in joint forming operations to form an element of a joint.

The reinforcing girth comprises a back piece 3 shaped to accord with the upper face of the top strap 2 and of proper dimensions so that the back piece 3 will lie smoothly on and make substantially complete surface contact with said top strap. Formed integrally with the back piece 3 are a pair of outwardly and downwardly extending flanges 4 and extending downwardly and slightly inwardly from the lateral margins of these flanges, are flanges 5 having inwardly extending edge portions 6. The space between the edges 6 is substantially the same as the width of the strap.

The reinforcing girth just described affords conspicuous advantages in its application over the familiar type of slotted tubular girth which must be threaded successively upon two overlapped strap ends. Thus in the application of my new reinforcing girth it may be taken between the thumb and fingers in the manner illustrated in Fig. 2 and applied vertically simultaneously to both overlapped strap ends. The result of this operation is indicated in full lines in Fig. 2. Thereafter by squeezing the corners between the flanges 4 and 5 toward each other the reinforcing girth which is preferably made of light metal may be bent into the shape indicated in dotted lines in Fig. 2 wherein it substantially encircles and embraces the overlapped strap ends, and will not drop or be shaken off them.

The succeeding joint forming operations may be carried out upon the structure shown in dotted lines in Fig. 2. These operations may involve, as for instance in the particular type of joint herein selected for illustrative purposes, the simultaneous crimping or deformation of the strap ends and the reinforcing girth. This operation involves squeezing pressure applied to the girth and strap ends, the result of which, at the beginning of the operation, will be to cause the girth to embrace the strap ends tightly. In the particular illustrative embodiment of the joint shown in Figs. 4, 5, and 6 edge-wise crimping is performed upon the girth and strap ends, *i. e.* pressure is applied edge-wise and over the top and bottom of the girth and inclosed strap ends, in a manner well known in the art and resulting in the joint of Fig. 6. Obviously the result of such squeezing operations will, in their early stages, bring the girth from the position shown in dotted lines in Fig. 2 to the position shown in full lines in Fig. 3 wherein the girth is in substantially tight superficial contact with the entire area of the superposed strap ends which it covers. A continuation of the joint forming operations will produce the joint shown in Figs. 4, 5, and 6.

It will be noted that the inturned edges 6 will contact with the undersurface of the lower strap as the girth is tightly squeezed upon the overlapped strap ends.

This construction insures the proper flattening out of the lower flanges of the girth inasmuch as, upon upward pressure the edges

6 will creep inwardly upon the under strap surface smoothly flattening out as the pressure continues. However, the presence of the edges 6 is not essential, inasmuch as a satisfactory joint of the character described may be produced without the aforesaid inturnd edges.

The girth of my invention is obviously applicable to other specific types of joint forming operations, and the form which it assumes upon squeezing pressure (as shown in dotted lines in Fig. 2) is substantially the same as the slotted tubular reinforcing girth heretofore widely known and used. When operated upon by any type of joint forming operations, involving conjoint crimping of the strap ends and girth, a joint substantially the same as that made with the slotted tubular girth will be produced.

The girth herein described and its method of application involve conspicuous advantages and effect a saving of time and labor in that the strap ends may be first overlapped and held in overlapped condition and the girth thereupon applied simultaneously to both thereof, instead of being successively threaded as was the practice hitherto.

Having described my invention, I claim:

1. A reinforcing girth for box strapping or the like, comprising a back piece, a pair of flanges arranged at the longitudinal edges of the back piece, and extending outwardly and downwardly and then downwardly and inwardly, the free edges of the flanges being spaced apart a distance substantially equal to the width of the corresponding box strapping.

2. A reinforcing girth for box strapping or the like, comprising a back piece, flanges arranged on the longitudinal edges thereof and having downwardly and inwardly projecting edges spaced apart substantially the width of the strap.

3. A reinforcing girth for box strapping comprising a back piece, flanges arranged thereon and having outwardly and downwardly projecting portions adjacent to the back piece, and free edge portions projecting downwardly and inwardly from the

said outwardly and downwardly extending portions.

4. A reinforcing girth for box strapping, comprising a back piece, a flange thereon extending first outwardly and downwardly, then downwardly and inwardly.

5. A reinforcing girth for box strapping comprising a back piece, a flange thereon extending first outwardly and downwardly, then downwardly and inwardly, the outwardly and downwardly projecting portion being adapted to contact with an edge of overlapped box strap and the downwardly and inwardly projecting portion being adapted to underlie the lower face of said strap when the girth is compressed edgewise upon said strap.

6. The method of forming a joint in overlapped box strap or the like, which consists in applying obliquely to the strap and intermediate its ends, a girth having a back piece adapted to contact with a face of the strap, flanges extending outwardly and downwardly therefrom, portions extending inwardly and downwardly from said flanges and having free edges spaced apart substantially the width of the strap, compressing said girth at its edges to cause the free edges to move toward each other, as the girth is manually applied, and thus substantially encircle the strap, and thereafter completing a tight encirclement of the strap by said girth and crimping the girth and strap simultaneously.

7. The method of forming a joint in tensional box strapping which consists in forming a reinforcing girth as an open member adapted to be applied transversely of the strap, and having angled flanges adapted to be squeezed into substantially strap encircling relation, manually applying said girth to the strap and transversely thereof, simultaneously squeezing said angled flanges together to substantially encircle the strap and subsequently crimping the strap and girth together to form a tension-resisting joint.

In testimony whereof, I have signed my name to this specification.

JOHN W. LESLIE.