

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

1,437,525.

Patented Dec. 5, 1922.

Fig. 1.

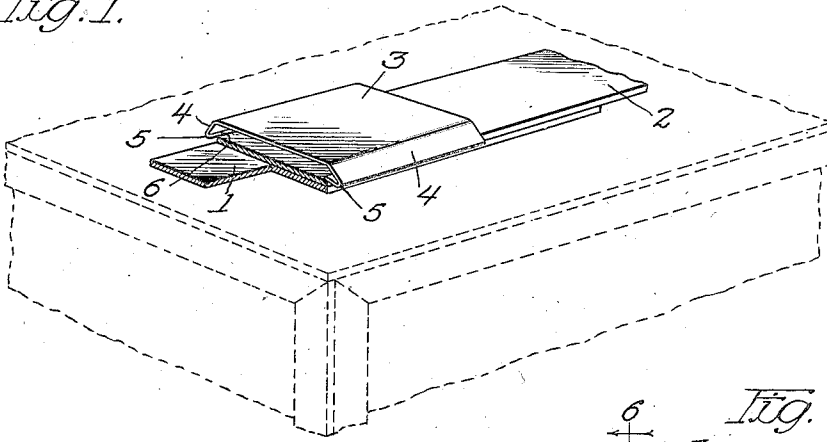


Fig. 2.

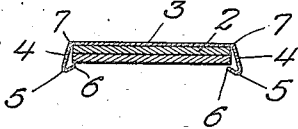


Fig. 4.

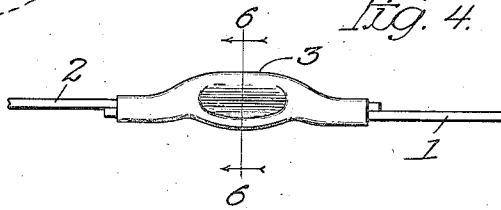


Fig. 3.

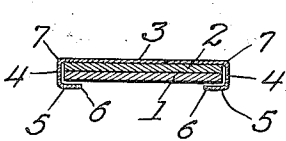


Fig. 5.

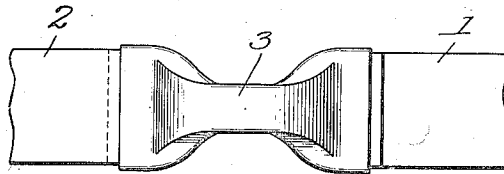
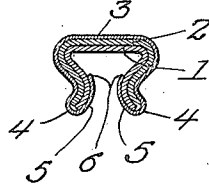


Fig. 6.



Inventor.
 John W. Leslie
 Sebastian Hinton
 Atty's.

UNITED STATES PATENT OFFICE.

JOHN W. LESLIE, OF EVANSTON, ILLINOIS.

REENFORCING GIRTH.

Application filed March 15, 1920. Serial No. 365,952.

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 Reenforcing Girths, of which the following is a specification.

This invention relates to reenforcing 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, and having advantages in its application and use hereinafter more specifically pointed out.

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

Fig. 1 is a perspective view, partly in cross section, showing my new reenforcing girth in the process of being applied to mutually overlapped strap ends.

Fig. 2 is a cross sectional view showing the girth as applied to said strap ends, prior to the joint forming operation.

Fig. 3 is a view similar to Fig. 2, showing the girth at a succeeding stage in the joint-forming process.

Fig. 4 is a side view of a joint formed with my reenforcing girth.

Fig. 5 is a plan view of the joint, and

Fig. 6 is a cross sectional view on lines 6-6 of Fig. 4.

In the drawings, the two ends of a binder, such as a flat tensional metallic box strap are shown in their relative position when the binder is applied about a box or package, with its ends 1 and 2 overlapped and superposed in alignment. The reenforcing girth herein described is applicable to said overlapped and superposed ends and serves to form an element of a joint whereby said ends are joined together.

The reenforcing girth of my invention comprises a back piece 3, shaped to accord with the upper face of the top strap 2, and of appropriate dimensions, so that the back piece 3 will lie smoothly on and make substantially complete surface contact with said top face. Formed integrally with the back piece 3 are a pair of downwardly and outwardly extending flanges 4; and these flanges are recurved as indicated at 5 to extend upwardly and inwardly (toward the interior surface of the back piece 3), and are preferably prolonged substantially so

that their ends 6 extend inwardly beyond the angles 7 between the back piece 3 and the flanges 4.

It being understood that the reenforcing girth is made preferably of metal and possessed of substantial resiliency, the construction, hereinabove described affords conspicuous advantages in the application of the girth upon the overlapped binder ends and simplifies materially the process of forming a joint therein.

Thus the girth may be made to embrace and maintain itself on the overlapped strap ends, without either threading it successively on the two overlapped strap ends (as would be the case if the girth were formed as a slotted tube as has been a common practice hitherto); or performing bending operations upon the girth in order to cause it to embrace the overlapped strap ends.

In the application of my improved girth, it is simply necessary to lay the same on the overlapped strap ends with the flanges down, in the position shown in Figure 1, and subsequently to press downwardly upon it. Whereupon the recurved surfaces 5, camming over the edges of the top strap, will yield; the corners 6 will move downwardly across the longitudinal edges of the overlapped strap ends, and as soon as they are disengaged thereby will snap in behind these edges in the position shown in Figure 2. Thus by a simple operation which can be performed in an instant the girth is applied into embracing relation with the overlapped strap ends and will maintain itself in such relation.

Further important advantages reside in the construction herein presented in that the girth is so formed and its parts have such relation to the strap ends and each other that the girth comes of itself into a substantially tight embracing relation on the strap in the succeeding joint forming operation. As an illustration; in forming a joint of the specific character disclosed in Figures 4, 5, and 6, edgewise crimping is utilized, involving the application of a tool which in effect seizes the girth and enclosed strap at the edges and squeezes these edges inwardly each toward the other. Owing to the contour and arrangement of the flanges 4 and recurved portions thereon 5, it will be apparent that pressure applied inwardly upon the flange 4 will first bend this flange

down substantially into contact with the edges of the overlapped strap; and meanwhile the edges 6 will travel inwardly along the under surface of the bottom strap. It follows that the first part of the joint forming operation will result in the girth assuming substantially the cross sectional shape indicated in Figure 3, wherein the girth completely embraces the strap and lies substantially in flat contact with its surface to the full extent of the strap area the girth superimposes. At this stage the situation is the same as though an open slotted tubular reinforcing girth has been threaded successively onto the two strap ends.

Subsequently a continuation of the edgewise crimping operation may be utilized to produce the joint shown in Figures 4, 5, and 6, wherein conjoint interlocking deformations are produced in the girth and the enclosed overlapped strap ends; specifically edgewise crimps in the strap and girth together. The final stages of the joint forming operation are effected thus in a manner the same as that familiar where the open slotted tubular sleeve or girth of the prior art has been utilized.

It is apparent that it is not necessary to utilize the specific type of joint-forming operation whose results are shown in Figures 4, 5, and 6, but that the pressure involved in any crimping or squeezing operation which squeezes the strap and girth horizontally or vertically (or both); will result in the girth being forced automatically into substantially the configurations shown in Figure 3. Thus not only is the application of the joint made more simple than hitherto; but the first stage of a strap joining operation serves also to cause the girth of my invention substantially to duplicate the well known slotted tubular girth heretofore widely in use.

Having described my invention, I claim:
1. As an article of manufacture a substantially channel-shaped reinforcing girth for tensional binders having converging portions adapted to yieldingly engage opposite edges of mutually overlapped strap ends when being applied to both overlapped ends simultaneously.

2. As an article of manufacture a reinforcing girth comprising a back member; a flange adapted to abut one edge of a box strap; a second flange opposite the first flange and adapted to yield and recover when forced over the opposite edge of the box strap.

3. As an article of manufacture, a reinforcing girth, comprising a back member; a flange adapted to engage with an edge of a box binder; an opposite flange adapted resiliently to snap over the opposite edge when the girth is pressed upon the binder to permit the application of the girth to

two mutually overlapped binder ends simultaneously.

4. As an article of manufacture a reinforcing girth and seal comprising a back member and opposite flanges said parts being constructed and arranged so that the girth is adapted to snap over and into embracing relation with a box strap when applied thereto in a direction transversely of the face plane of the strap.

5. As an article of manufacture a reinforcing girth for box strapping or the like, comprising a somewhat resilient member formed with a back piece, and opposite flanges adapted to be wedged apart as the girth is applied to a box strap in a direction oblique to its length, and to snap in behind the outer edge of the face of the strap remote from the direction of application of the girth.

6. As an article of manufacture a reinforcing girth for box strapping or the like comprising a somewhat resilient member formed with a back piece adapted to contact with a surface of the box strap, and a pair of opposite flanges extending substantially outwardly from the back piece and having recurved portions extending inwardly beyond the edges of the back piece; to provide a girth which may be sprung or snapped into place on two superposed strap lengths simultaneously.

7. As an article of manufacture a reinforcing girth for box strapping or the like comprising a somewhat resilient member formed with a back piece adapted to contact with a surface of the box strap, and a pair of opposite flanges extending substantially outwardly from the back piece and having recurved portions extending inwardly beyond the edges of the back piece, said recurved portions sloping on their exposed faces toward the back piece.

8. As an article of manufacture a reinforcing girth for box binders or the like comprising a somewhat resilient member formed with a back piece adapted to contact with a surface of the binder, and a pair of opposite flanges extending substantially outwardly from the back piece and having recurved portions extending inwardly beyond the edges of the back piece, said flanges and recurved portions being adapted to straighten out and come into substantially flat contacting relation with the surface of the binder under tension on a box when the girth and encased strap are forcibly compressed.

9. The method of forming a joint in tensional box binders or the like, which consists in applying to the overlapped ends of said binders a reinforcing girth loosely embracing said ends and having parts projecting over both faces thereof; squeezing said girth into substantially complete surface en-

gagement with the binder ends throughout the inner area of the girth, and forming interlocking distortions simultaneously in the joint and the binder ends by a continuous squeezing operation.

10. The method of forming a joint in flat metallic binders or the like, which consists in applying to the superposed portions of said binders a reinforcing girth loosely fitting upon said superposed portions, then squeezing the girth into strap end embracing relationship, and forming a joint involving the girth and the ends by a continuation of the squeezing operation.

11. As an article of manufacture, a somewhat resilient sheet metal reenforcing girth adapted to serve as an element of a box strap joint, and comprising in combination a back piece, adapted to be applied to the outer surface of a box strap on a box or the like; a flange thereon adapted to partly underlie and loosely fit upon the under surface of said box strap, said part being so constructed and arranged that the compression of said girth on the strap is adapted to

bend said flange portion into a snug contact with the under surface of the strap.

12. As an article of manufacture, a reenforcing girth adapted to serve as an element of a box strap joint and comprising in combination a back piece, adapted to be applied to the outer surface of a box strap on a box or the like; a flange integral with one longitudinal edge of the back piece, and extending first outwardly therefrom and then inwardly, and having a curved cross sectional contour on its inwardly extending portion, whereby an inner edge is provided, adapted to contact first with the lower surface of the strap and move inwardly thereupon under the compression of the girth in the crimping operation, to straighten out said flange and bring the same into substantially complete superficial contact with the strap surfaces in the first part of the crimping operation incident to forming a joint.

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

JOHN W. LESLIE.