E. E. FLORA.

ART OF PROVIDING FLAT METAL STRIPS WITH SEALING SLEEVES.

APPLICATION FILED SEPT. 18, 1915. RENEWED MAR. 12, 1917.

1,252,680. Patented Jan. 8, 1918.

Fig. 1.

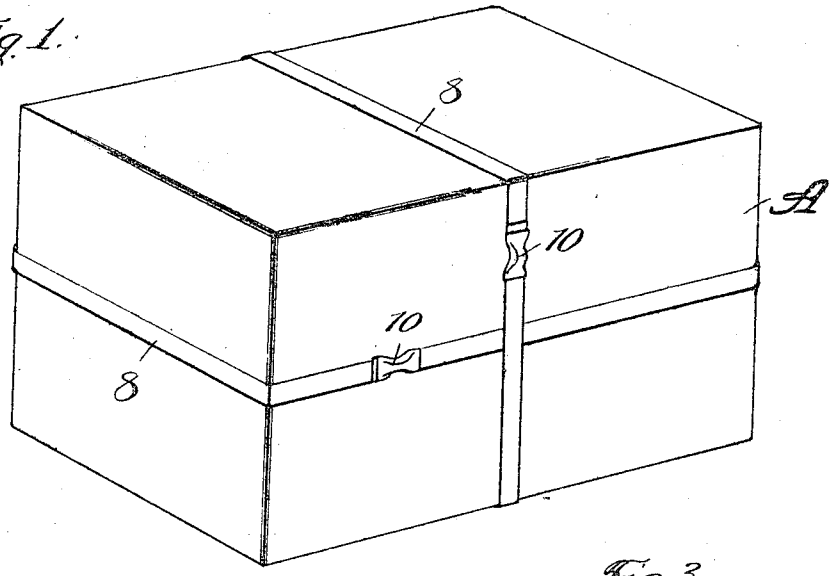


Fig. 2.

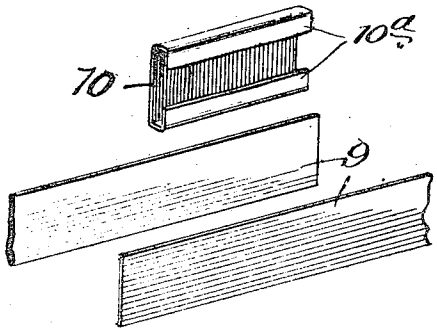


Fig. 3.

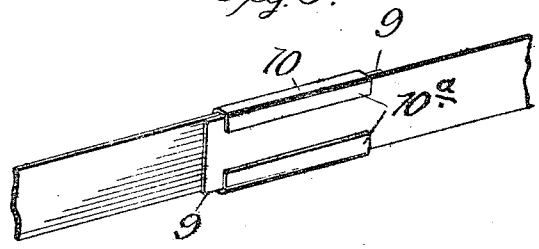


Fig. 4.

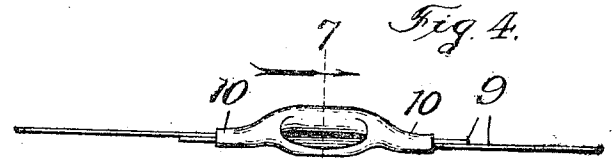


Fig. 7.

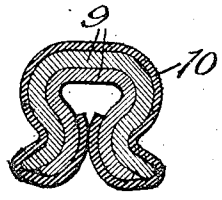


Fig. 5.

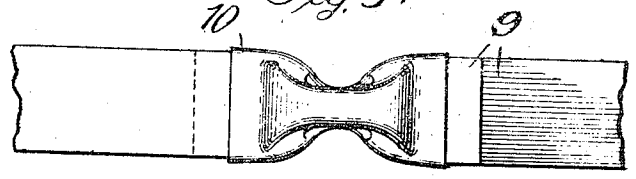
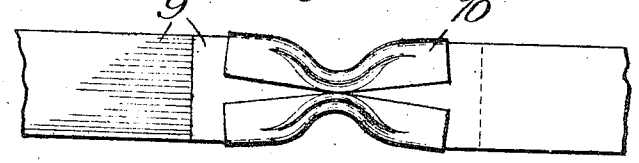


Fig. 6.



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UNITED STATES PATENT OFFICE.

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ART OF PROVIDING FLAT METAL STRIPS WITH SEALING-SLEEVES.

1,252,680. Specification of Letters Patent. Patented Jan. 8, 1918.

Application filed September 18, 1915, Serial No. 51,355. Renewed March 12, 1917. Serial No. 154,340.

To all whom it may concern:

Be it known that I, ELLSWORTH E. FLORA, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in the Art of Providing Flat Metal Strips with Sealing-Sleeves, of which the following is a specification.

This invention relates to an improvement in tension-resisting joints for metallic box-strapping or the like which is subjected in use to heavy tensional strains. A joint embodying this invention may be used to great advantage for joining end portions of metal strapping to complete the continuity thereof as an encircling binder about a box, bale or the like, and to hold the same securely under tension or against heavy tensional strains arising in use.

An object of the invention is to provide a reinforced joint of superior strength which is durably locked against accidental separation of the joined parts, either by heavy tensional or transverse strains, and is also sealed against intentional separation thereof except by readily detectable tampering with the joint.

One practicable embodiment of the invention is shown by way of illustration in the accompanying drawing, wherein:

Figure 1 is a perspective view of a box bound with metal strapping which is provided with the illustrative form of reinforced joint;

Fig. 2 shows, in disassembled relation, two strap-ends and a reinforcing member in the form of a sleeve, by which the joint may be made;

Fig. 3 shows the same parts assembled in readiness for the formation of the joint;

Fig. 4 is an edge view of the connected strap ends showing the illustrative form of joint in side elevation;

Figs. 5 and 6 are respectively top and bottom plan views of the joint shown in Fig. 4.

Fig. 7 is a transverse section on the line 7—7 of Fig. 4.

As shown in Fig. 1, the illustrative joint is used for connecting the ends of box strapping to complete the continuity thereof as an encircling box binder. Those portions of the strap which are to be connected, are formed of metal which is sufficiently ductile to admit of its being distorted for the purposes of making the joint, but stiff enough when so distorted to resist effectually tendencies to re-distortion under severe tension lengthwise of the strap.

The specific form of joint shown in the drawing, comprises three parts,—the two strap ends 9, 9 and the reinforcing member 10, which is shown as a preformed sleeve. The strap ends 9, 9, in overlapped relation, as shown in Fig. 3, are embraced more or less by the reinforcing sleeve 10; and contiguous parts of the reinforcing member and strapping are distorted conjointly in an edgewise direction or by deforming the cross-sectional shapes of the parts, to provide mutually interlocking distortions, in the strapping and the reinforcing member, such that the joint is effectually locked against separation by heavy tensional strains in the strap, or otherwise.

The sleeve shown in Fig. 2, or its equivalent, in addition to forming an effective reinforcing element of the completed joint, may also serve as a seal to render intentional separation of the joint impracticable without leaving evidence of tampering with the seal.

One of the important advantages of a joint embodying this invention, resides in the fact that the strapping and the reinforcing member are so distorted at their margins as to deform more or less their cross-sectional shapes and produce a novel character of interlocking tension-resisting engagement of the parts. A preferred degree of distortion in the manner described, is illustrated in the drawing; but evidently it is the character of distortion to produce a desired interlocking engagement of the parts, and not the particular degree of distortion, which distinguishes this invention.

I claim:

1. A method of providing a flat metal strip with a sealed joint, which comprises bringing opposite end-portions of the strip flatwise together; surrounding them with a thin-metal sleeve; and conjointly crimping edgewise the sleeve and the strip.

2. A method of providing a flat metal strip with a sealed joint, which comprises bringing opposite metal-strip end-portions together in flatwise overlapping relation; surrounding them with a thin-metal sleeve; and conjointly crimping edgewise the sleeve and said overlapping end-portions of the strip.

3. A sealed joint comprising in combination, flat metal-strip end-portions in flatwise contacting relation; and a thin-metal sleeve embracing the same; said parts being conjointly crimped edgewise.

4. A sealed joint comprising, in combination, flat metal-strip end-portions in flatwise contacting relation; and an open-sided thin-metal sleeve embracing said end-portions; said parts being conjointly crimped edgewise.

5. As an article of manufacture, a reinforcing seal for uniting the ends of metallic box strapping, comprising a preformed, flattened, slotted, tubular sheet metal sleeve having preformed embracing and guiding flanges to receive pieces of box strapping inserted endwise into the sleeve from opposite directions, said flanges and the body of said sleeve being relatively positioned to guide said pieces of box strapping into and hold them in contacting overlapping relation, whereby the sleeve assists to determine assembly of the pieces of strapping in desired relation; the sleeve and the said pieces of strapping being arranged to have marginal portions thereof conjointly distorted out of their normal cross sectional shapes; the lines of distortion running longitudinally of the strap and the sleeve being of proper character of metal to be so distorted with the pieces of strapping to form a sealed joint and to reinforce the marginal distortions against slippage or separation of the joined pieces of strapping.

6. A method of uniting pieces of metallic box strapping, which comprises inserting the pieces of strapping into a preformed sleeve and assembling said pieces in overlapping relation within said sleeve; and distorting marginal portions of said sleeve and strapping by deforming their cross-sectional shapes.

7. A binder for packages comprising, in combination, a metallic strap surrounding the package, and having its ends overlapped; a reinforcing member embracing said overlapped ends; said strapping and reinforcing members having interlocking tension-resisting engagement formed by distorting conjointly marginal portions thereof out of their normal cross-sectional shapes.

8. A tension-resisting joint for the overlapped ends of tensional box binders comprising, in combination, a reinforcing member adapted to embrace a plurality of overlapping metal strap ends; and said overlapping strap ends embraced by said reinforcing member; said member and the strap ends having conjoint interlocking marginal distortions, the cross-sectional shape of the strap ends through said distortions being different from the normal cross-sectional shape of said strap ends.

9. A tension-resisting joint for box strapping comprising, in combination, the portions of the strapping to be joined; and a reinforcing member embracing said strapping; the reinforcing member and said strapping having interlocking tension-resisting engagement formed by distorting their edges conjointly out of their normal cross-sectional shapes.

10. An imperforate tension-resisting joint for box strapping comprising, in combination, imperforate portions of the strapping to be joined; and a reinforcing member embracing said strapping; the reinforcing member and the strap portions having interlocking tension resisting engagement formed by distorting them conjointly out of their normal cross sectional shapes while maintaining the continuity of the materials.

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In presence of—
L. HEISLAR,
K. O'NEILL.