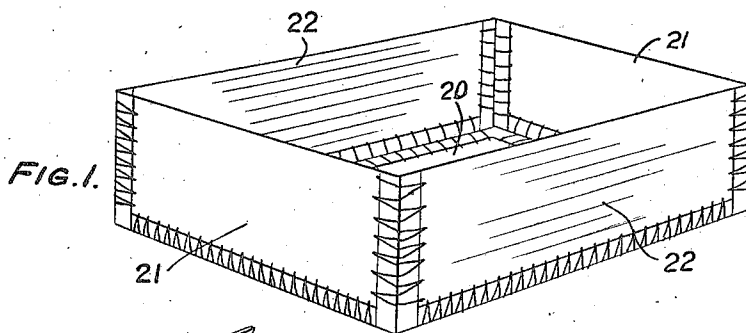
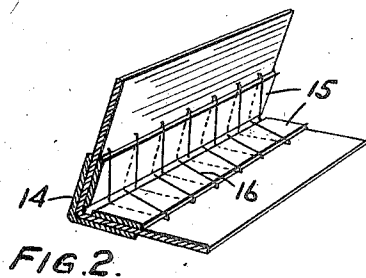
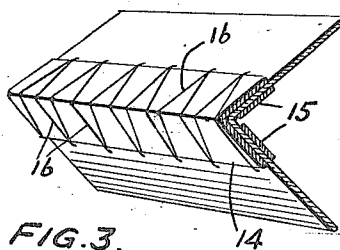
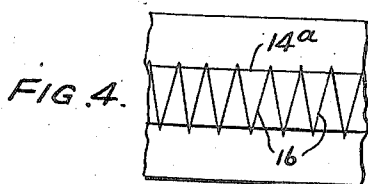
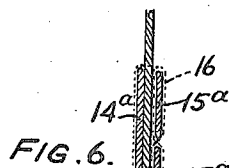
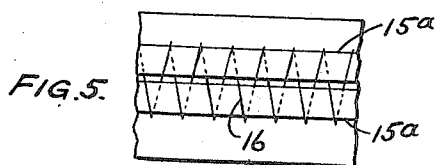
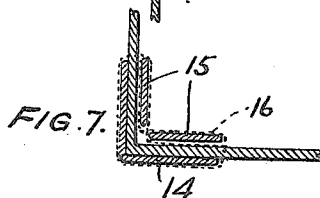
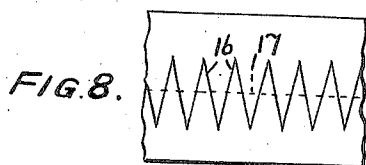
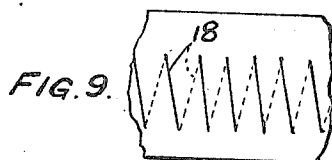


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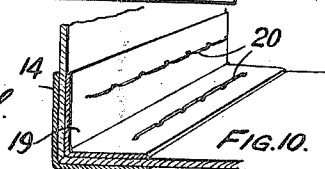
A. B. HUBARD,
REINFORCED JOINT.
APPLICATION FILED MAR. 23, 1921.

Patented Oct. 24, 1922.



WITNESS:

Robt. Mitchell



INVENTOR

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UNITED STATES PATENT OFFICE.

ARCHIBALD B. HUBARD, OF OGONTZ, PENNSYLVANIA.

REENFORCED JOINT.

Application filed March 23, 1921. Serial No. 454,619.

To all whom it may concern:

Be it known that I, ARCHIBALD B. HUBARD, a citizen of the United States, residing at Ogontz, county of Montgomery, and State of Pennsylvania, have invented a new and useful Improvement in Reenforced Joints, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to reenforced joints for paper or cardboard boxes, etc., and more particularly to joints reenforced with metal.

The object of my invention is to provide a box of this character with joints which are rigid, wear-resisting, and in which the joined members are held against separation and crushing at the joints between the members.

The precise nature of my invention will be best understood by reference to the accompanying drawings, which will now be described, it being premised, however, that changes may be made without departing from my invention as defined in the appended claims.

Fig. 1 of the drawings is a perspective view of one form of box made in accordance with my invention.

Fig. 2 is an enlarged detail sectional view of the interior of my preferred form of joint.

Fig. 3 is a similar view of the exterior of joint shown in Fig. 1.

Fig. 4 is an exterior face view of my preferred form of joint before bending.

Fig. 5 is an interior view thereof.

Fig. 6 is an edge view of the joint shown in Figs. 4 and 5.

Fig. 7 is a similar view of the device shown in Fig. 6 bent to form.

Figs. 8 and 9 are face views of other forms of joints, before bending.

Fig. 10 is a view similar to Fig. 2 of a modified form.

In these drawings, the reference characters 20, 21 and 22 designate the bottom, ends and sides, respectively, of the box shown and in which all of the joints have been reenforced.

Each corner of the box shown in Fig. 1 is reenforced by means of an exterior sheet metal angle member 14 and two interior sheet metal strips 15 held in position by double wire lacings 16. Each lacing extends across the face of the angle member 14 on

the outer face of each joint, and over one strip 15 and under the other on the inside of the joint.

The lacings are arranged to secure the adjacent members to each other as well as to secure the angle member 14 and strips 15 in position, while the angle member and strips further reenforce the joint and at the same time prevent the lacings from tearing out.

When forming a box in which all of the joints are reenforced, I cut and score a blank in the usual manner and lace the wires across the line or score 17 along which it is then bent as shown in Fig. 8. I then insert a flat strip 14^a under all of the lacings on one side as shown in Fig. 4, and two strips 15^a, such as shown in Fig. 5, are then inserted under alternate lacings on the other side. Each strip underlies a portion of every other pass of lacing and overlies a portion of the other passes.

The strips are so arranged with relation to the different passes of the lacings that a portion of each pass on the one face of the joint underlies one strip 15^a while the other portion thereof overlies the other strip.

The sides and ends as well as the strips 14^a are then bent by a suitable bending device between the pieces 15^a and along the line or score 17 into the position shown in Fig. 7 to dispose the strips 15^a at right angles to each other, one on each side of the bend, and to bend one portion of the strip 14^a at right angles to the other portion thereof.

After the sides and ends are bent into position, the joints between the sides and ends are reenforced by means of similar devices.

The joints above described are reenforced both on the inside and outside by means of metal strips which are held in position by the lacings.

If desired, either or both of the reinforcing strips may be omitted, and in the latter case the joint is reenforced by means of the wire lacings only.

In the joints above described, I have shown a double lacing, but, if desired, any of the joints may be formed of a single lacing such as shown in Fig. 9.

Referring to Figure 10 in which I have illustrated a modification of my invention, the joint is reenforced on the outside by an angle strip 14, as in the preferred form above described, and on the inside by a second similar angle strip 19, the angle strips

being secured together and to the marginal portions of the box members by means of metal lacings 20.

The advantages of my invention result from the provision of a joint between two angularly disposed members having a wire reinforce interlaced through both members extending across the joint on both faces of both members and shaped to lie against both sides of said members.

A further advantage results from the provision of sheet metal reinforces laced to the members at the joints to resist crushing strains and also to prevent the tearing out of the wire laces.

Having now fully described my invention, what I claim and desire to protect by Letters Patent is:

1. A reenforced joint between two members comprising a metal strip overlapping both members and the joint and metal lacing confining the strip in position.

2. A reenforced joint between two members comprising a metal strip overlapping both members and the joint between them, and metal lacing extending through both members and back and forth across the joint.

3. A reenforced joint between two members comprising metal lacing extending through both members and back and forth across the joint, and a metal strip overlapping the joint and confined between the lacing and the adjacent marginal portions of both members.

4. A reenforced joint between adjacent members arranged in angular relation to each other comprising an angle strip contacting with adjacent margins of adjacent members and metal lacing extending through both members and back and forth across the joint.

5. A reenforced joint between two members comprising a metal strip overlying both members and the joint between them, and metal lacing extending through both members and repeatedly back and forth across the joint and over both sides of the adjacent marginal portions of both members.

6. A reenforced joint between two members comprising metal lacing extending through both members and repeatedly back and forth across the joint and over both sides of the adjacent marginal portions of both members, and metal strips extending on opposite sides of said members, each strip overlapping the joint and confined against said members by the lacing on the corresponding side thereof.

7. A reenforced joint between two angularly disposed members comprising two metal angle strips each overlapping the joint and the adjacent marginal portions of said members, one strip located on the inside, and the other on the outside, of said angle,

and metal lacing holding the strips in position.

8. A reenforced joint between two members extending at an angle to each other formed of back and forth passes of metal lacing passing through both members a plurality of times, and a metal reinforce held in position at the joint by the lacing.

9. A reenforced joint between two members extending at an angle to each other formed of back and forth passes of metal lacing passing through both members a plurality of times, and an angular metal reinforce at the joint held in position by the lacing.

10. A reenforced joint between two members extending at an angle to each other formed of back and forth passes of metal lacing passing through both members a plurality of times, and metal reinforces on the opposite sides of both members on both sides of the joint held in position by the lacing.

11. A box having a bottom, side and end members, some of the joints between said members being reenforced by means of an angle member, and a wire lacing passing back and forth across said reinforce and through the box members.

12. A box having cardboard bottom, side and end members connected to each other at the junctions of said members, some of the joints being reenforced by an angle member overlapping the ends of the joined members on the exterior of the box, and a wire lacing passing over and through said members.

13. A box having cardboard bottom, side and end members connected to each other at the junctions of said members, some of the joints being reenforced by an angle member overlapping the ends of the joined members on the exterior of the box, a metal reinforcing strip near the end of each member at the reenforced joints and on the inside of the box, and a wire lacing passing back and forth across the reenforced joints and through both members, said lacings securing the joined members to each other and securing the reinforces in position.

14. A paper box having a bottom, side and end members secured to each other by reenforced joints, said joints being formed of back and forth passes of wire lacings passing through the members near the ends and over the joint, each joint having an angular reinforcing strip on the outside of the box under the several passes of the laces, and two metal strips at each joint lying over some of the passes of the lacing and under the other passes.

In testimony of which invention, I have hereunto set my hand, at Philada., Penna., on this 16th day of March, 1921.

ARCHIBALD B. HUBARD.