

Fig. 1.

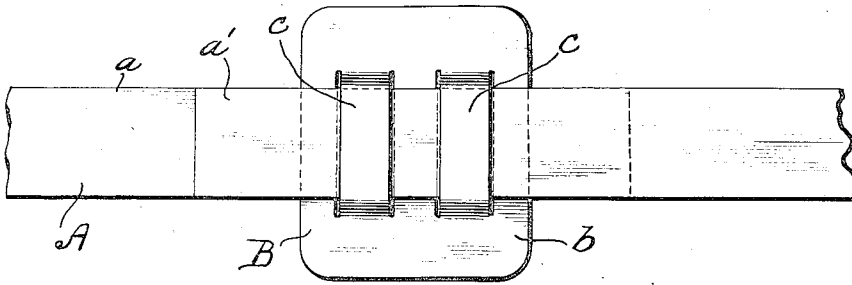


Fig. 2.

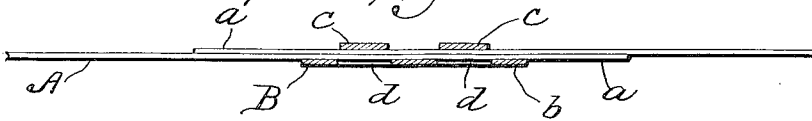


Fig. 3.

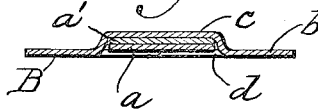


Fig. 4.

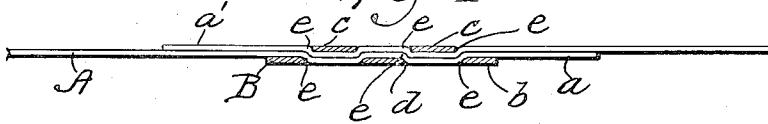
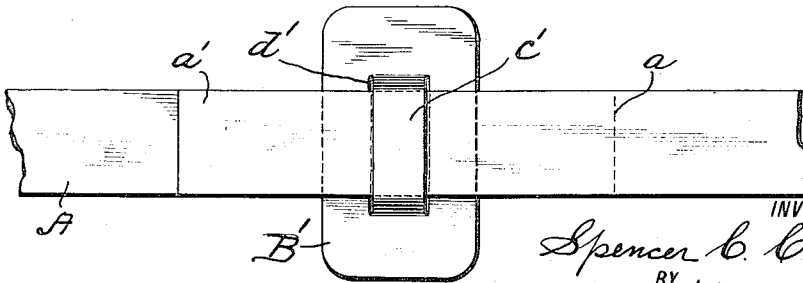


Fig. 5.



Fig. 6.



INVENTOR
Spencer C. Cary
BY
H. B. Bensch
ATTORNEY

UNITED STATES PATENT OFFICE.

SPENCER C. CARY, OF BROOKLYN, NEW YORK, ASSIGNOR TO CARY MANUFACTURING COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

MEANS FOR JOINING METAL PACKAGE-BINDERS.

1,301,102.

Specification of Letters Patent. Patented Apr. 22, 1919.

Application filed July 27, 1918. Serial No. 246,991.

To all whom it may concern:

Be it known that I, SPENCER C. CARY, a citizen of the United States, residing at the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Means for Joining Metal Package-Binders, of which the following is a specification.

This invention is a means for joining the meeting end portions of a metal binder after it shall have been positioned around a shipping package of one form or another.

The invention is useful, more particularly, in connection with a flat metal band or strap, and, further, as a means for securely retaining the lapping portions of such strap in immovable or fixed relation to each other, whereby tension placed upon the strap in the operation of stretching the latter around a shipping package will not pull the coupling or splice apart.

In the art of binding or strapping shipping packages, it is usual to supply the band or strap from a bundle or coil and to use straps in lengths which vary according to the external dimensions of the package, hence in nearly all instances it is not feasible to employ bands or straps, the end portions of which are specially constructed with a view to facilitating the operation of joining the meeting ends.

Manifestly, a means for joining or splicing the meeting end portions of a band or strap must be simple, strong, durable, and efficient, and moreover, capable of easy and quick manipulation.

According to my invention, a splice plate is used as the member for receiving the straight end portions of a binder, usually a band or strap, said splice plate being provided with one or more loops which, when subjected to pressure, deflect the lapped portions of the binder so as to produce shoulders therein, whereby the splice plate and the shouldered portions of the binder are so locked together that the binder ends are held against pulling apart by the tension placed upon said binder or by rough usage to which the shipping package may be subjected during transportation.

Other features and advantages of the invention will appear from the following detailed description taken in connection with the drawings, wherein—

Figure 1 is a plan view of a portion of a

binder with the splice plate fitted to the lapped end portions thereof prior to compressing the binder and splice plate into locking relation.

Fig. 2 is a longitudinal section, and Fig. 3 a cross section, through the parts in the condition of Fig. 1.

Fig. 4 is a longitudinal section and Fig. 5 a cross section through the splice after the parts shall have been subjected to pressure in order to effect the interlocking engagement between the splice plate and the binder end portions.

Fig. 6 is a plan view illustrating another embodiment of the splice plate, wherein, a single loop is employed instead of the double loop shown in the construction of Figs. 1 to 5, inclusive.

A designates a package binder, consisting usually of a flat metal band or strap adapted to be drawn as required from a bundle or coil, that portion of the band to be used being of variable length, and such length depending upon the dimensions of the package around which the band is passed. The end portions *a, a'* of the band are in a straight condition so that they may be readily passed through or inserted into a splice member, two forms of which are shown in the drawings.

The splice member B shown in Figs. 1 to 5 inclusive, consists of a substantially flat plate *b* and a plurality of loops *c*. The plate and its loops constitute a single stamping, the plate being cut from a piece of metal and the loops being stamped or struck up from the body of the plate, whereby the loops are off-set from the plane of the plate. The operation of stamping or striking up the loops from the body of the plate produces a plurality of slots in said plate, the loops being opposite to the slots, and the end portions of the loops being merged into the plate, see Fig. 3. It is apparent that the operation of cutting the plate and stamping said plate to produce the slots and the loops, can be performed rapidly by suitable machinery, so as to economically manufacture the splice member. The loops *c* are off-set from the plane of the plate sufficiently to provide a space or opening which permits the free introduction of the straight ends of the flat band, whereby said band ends *a, a'* are adapted to be easily and quickly thrust through the loops, or between the

loops and the plate so as to position the band ends a, a' into lapping relation to each other and into lapping relation, also, to the splice plate and the loops thereof. When the band ends are thus positioned within the loops of the splice plate, said band ends and the splice plate will be relatively loose so that the splice plate may be shifted along the band ends to a desired position, but in order to join the band ends against pulling apart under the tension on the band, it is necessary in this invention that pressure be applied to the splice member and the band ends, in order to effect an interlocking engagement between the overlapping band ends and the splice member.

When pressure is applied laterally to the splice member and the band ends, the metal is displaced to effect the interlocking engagement in a manner illustrated in Figs. 4 and 5. According to this invention, the application of pressure displaces the loops c, c' , so as to flatten them with respect to the plane of the plate, and such displacement of the loops forces the metal of the overlapping band ends more or less into the slots d of the splice member, as a result of which shoulders e are produced at a number of points in the length of the overlapping band ends, which shoulders e have interlocking engagement with the plate at a margin of the slots therein, and said shoulders have interlocking engagement also, with the loops at the margins thereof, see Fig. 4. The lapped band ends are thus crimped simultaneously into locking engagement with the plate, and the loops thereof, and such interlocking engagement is obtained at a number of points in the length of each end portion of the band, as a result of which the band is so locked with the splice member that the end portions of the band cannot be pulled apart by tension applied to the band. It is to be understood that the band is positioned upon a shipping package, such as a case, crate, etc., and said band is stretched around the package, preferably by pulling upon the respective end portions of the band, the effect of which is to apply the band under tension to the shipping package and to position the respective end portions a, a' of the band into overlapping relation. While the band is under tension, the splice member is slipped over the meeting end portions until it reaches a desired position, and then pressure is applied, through the instrumentality of a suitable tool, so as to compress the loops and displace the metal of the overlapping band ends, whereby the parts are locked securely together.

The operations of assembling the splice member and compressing said splice member or its loops, are very easily and quickly performed, for the reason that the end portions of the band are in a straight condi-

tion, and the loops of the splice member are open for the free introduction of the band ends, thus enabling the operator to easily and quickly position the splice member upon the band ends, after which a tool is positioned upon the splice member, and said tool is operated to crimp the band ends and simultaneously therewith lock the splice member to the band ends.

The splice shown in Fig. 6 of the drawings involves substantially the same construction of the splice member and the crimping of the band ends thereof, as heretofore described. As shown the splice member B' is provided with a single loop c' , the latter being struck up from the plane of the splice plate so as to produce a slot d' , there being a single loop and a single slot in the splice member B' . The end portions of the band are inserted into the loop of the splice member B' , and the latter is shifted to a desired position with respect to said lapping end portions, after which pressure is applied so as to compress the loop c' and to crimp the lapping end portions into locking engagement with the splice member and its loop.

Having thus fully described the invention, what I claim as new and desire to secure by Letters Patent is:

1. A splice of the kind described embodying a substantially flat splice member provided with one or more bridge members, and a binder the end portions of which are in lapping relation and are positioned intermediate the substantially flat portion of said splice member and the bridge members thereof, said bridge members and the lapping portions of the binder being compressed into substantially the plane of the splice member and said lapping portions of the binder being interlocked with each other and with the splice member, and said splice member being provided with means for permitting said lateral compression of the bridge members and the binder end portions for positioning the same substantially in the plane of said splice member.

2. A splice of the kind described embodying a substantially flat slotted plate provided with one or more loop-shaped bridge members, the latter being normally positioned in spaced relation to said plate, and a binder the end portions of which are in lapping relation and are adapted for free insertion within said loop shaped bridge members, said lapping portions of the binder and the bridge members being displaced by pressure into substantially the plane of said plate and said lapped binder portions being interlocked with each other and with the splice plate.

3. A splice of the kind described embodying a substantially flat plate provided with a slot and a loop-shaped bridge member

which spans said slot and is offset from the plane of said plate, and a binder the lapping end portions of which are positioned intermediate the bridge member and said plate, said bridge member and the lapped binder portions being displaced by pressure to lie in substantially the same plane as the plate and said lapped binder portions being formed with shoulders which are in locking relation to the plate and the bridge member.

4. A splice of the class described embodying a substantially flat plate provided with a slot and with a bridge member, and a binder the lapping end portions of which are crimped by displacement of the bridge member to bring said lapped portions and said bridge member into substantially the same plane as the plate, said crimped lapped portions of the binder having locking relation to the plate and the bridge member.

5. A splice of the class described embodying a substantially flat slotted plate provided with one or more bridge members positioned to span said slot and offset from the plane of the plate, and a binder with lapping end portions positioned intermediate the plate and said bridge members, said bridge members and the lapping binder portions being displaced to lie in substantially the same plane as the plate and said lapping binder portions being crimped within the slots of the plate so as to produce shoulders

which are in locking engagement with the plate and the bridge members.

6. A splice for metal package binders embodying a member provided with a loop struck up from the body of the member and producing therein a slot and forming a space for the free introduction of the end portions of the binder so as to position said end portions into lapping relation, said loop being displaceable by the application of lateral pressure for crimping the lapped portions into the slot of the splice member, and for effecting an interlocking engagement between the end portions and the splice member.

7. A splice for metal package-binders embodying a member provided with a plurality of loops each struck up initially from the body of the member and producing therein a plurality of slots and producing, also, a space initially open for the free introduction of the end portions of the binder, so as to position the latter into lapping relation, said lapping end portions being crimped into the slots of the splice member by pressure applied laterally, and effecting an interlocking relation at a number of points between the lapped end portions and the splice member and its loops.

In testimony whereof, I have hereunto signed my name at Stamford, N. Y., this 24th day of July, 1918.

SPENCER C. CARY.