Nov. 3, 1936. J. V. PRESTWICH 2,059,906

BALE TIE AND BAND AND MEANS FOR FASTENING THE SAME

Filed April 20, 1935

Fig. 1.

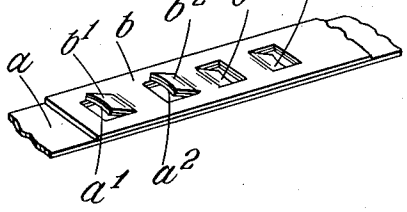


Fig. 2.

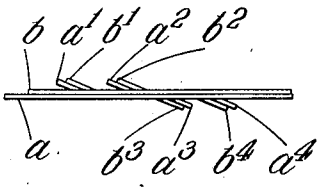


Fig. 3.

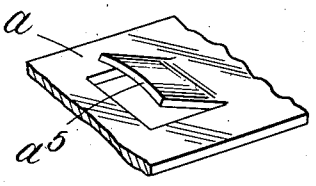


Fig. 4.

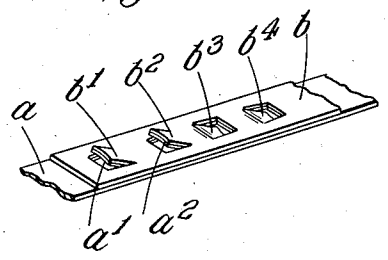


Fig. 5.

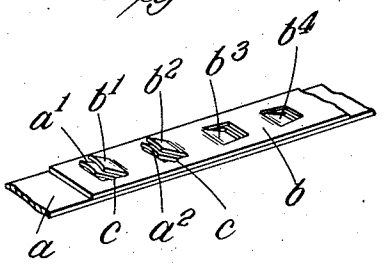
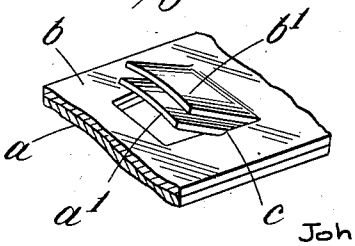


Fig. 6.



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BALE TIE AND BAND AND MEANS FOR FASTENING THE SAME

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Application April 20, 1935, Serial No. 17,475
In Great Britain May 5, 1934

2 Claims. (Cl. 24—20)

This invention relates to improvements in bale ties or bands and in the method of fastening the same. The chief object of the present invention is to provide an improved and simplified seal or fastening.

The band seal according to the present invention is characterized in that a plurality of spaced pairs of tongues are punched, at least one pair up and one pair down, from the overlapping parts of the band, the tongues of one band passing through the apertures formed by the punching up or down of the other tongues.

When the tension on the band is released, as, for example, when the band is severed from the coil, the two overlapping parts of the band move relatively to one another and those tongues which have been pressed through the apertures in opposed part of the band slide over or under that part of the band and give the desired sealing or locking of the two overlapping parts of the band.

In order to impart rigidity to the tongues and hence strength to the seal, the tongues may, if desired, be transversely curved or longitudinally ribbed, as hereinafter explained.

In cases where the seal is to be subjected to considerable strain, it may be found difficult to provide a seal which will withstand the strain when parallel sided tongues are employed. For this reason, therefore, the tongues are preferably tapered slightly whereby, when the overlapping parts of the band move relatively to one another, not only does one of each of the pairs of tongues become located over or under the other part of the band but also it bites into the sides of the aperture in that part of the band and a definite lock of the overlapping parts of the band is obtained.

In order that this invention may be the more clearly understood and readily carried into effect, I will proceed to describe the same with reference to the accompanying drawing, which illustrates by way of example and not of limitation certain convenient embodiments of this invention, and in which:—

Figure 1 is a perspective view of the overlapping parts of a band strap after the pairs of tongues in accordance with the present invention have been punched out.

Figure 2 is a side elevation of the seal according to this invention showing the parts after the overlapping portions of the band have moved relatively to one another to give the seal.

Figure 3 is an enlarged perspective view illustrating the form of the tongues.

Figures 4 and 5 are views similar to Figures 1 and 2 showing the preferred form of this invention in which the tongues are tapered slightly, and

Figure 6 is an enlarged perspective view of a single pair of tapered tongues showing the position of the parts when the seal is formed.

Referring now more particularly to Figures 1 to 3 of the accompanying drawing, after the band has been passed around the case or box to be bound and the strap has been tensioned, there are punched out of the overlapping parts a and b of the band four spaced pairs of tongues a^1, a^2, a^3, a^4 and b^1, b^2, b^3 and b^4, each pair comprising one tongue from each of the overlapping parts a and b of the band. Two pairs of tongues are punched up from the overlapping parts of the band and two pairs are punched down, the tongues of each set of two pairs lying back to back (see Figure 1). These tongues are not punched out at right angles to the plane of the band but are inclined thereto, although they may, if desired, be punched out so that for the major part of their length they lie parallel, or substantially parallel, with the band and spaced therefrom. The amount by which the tongues are punched up or down is preferably such that the free end of the tongue of one band passes completely through the aperture in the other band. In this way two tongues of each of the overlapping parts of the band pass through to the opposite side of the other of the overlapping parts of the band. Now, when the band is cut and the tension released, the two overlapping parts of the band will tend to pull away from one another but by reason of the displacement of the tongues a^1, a^2, b^3 and b^4 through the other part of the band this movement will be arrested by the tongues a^1, a^2, b^3 and b^4 abutting against the transverse edges of the apertures through which they have passed (see Figure 2). Hence the two overlapping ends of the band a and b will be firmly secured together with the tongues a^1 to a^4 and b^1 to b^4 on the two overlapping parts of the band now staggered.

An efficient seal will thus be produced as each part of the band is firmly secured to the other part. Furthermore, there will be no projections to catch the hands of any person handling the case and no additional seal part is required.

The tongues are preferably transversely curved, as shown more clearly at a^5, Figure 3, more particularly at the point where they join the band, in order to impart rigidity to them, and this transverse curving may extend, say, half the length of the tongue and a like distance back along the band in each case.

Obviously more than four pairs of tongues may be punched out of the band if additional sealing strength be desired and, if desired, two or more pairs of tongues may be arranged side by side in the case of wide bands. Also, where the strain is not too great, only a single pair of tongues may be punched up and a single pair down.

Now, in practice, it has been found that, when the tongues are parallel-sided, even when they are transversely curved or longitudinally ribbed as above described, then, when the band is subjected to considerable strain, the tongues have a tendency to tear out at the base.

In order to overcome this disadvantage, the tongues, which are punched up and/or down from the overlapping parts of the band, instead of being parallel-sided as in Figures 1 to 3, may be tapered slightly as shown in Figures 4 to 6 whereby, when the overlapping parts of the band move relatively to one another from the position of Figure 4 to the position of Figure 5, not only do the tongues become located over and under the other band but also they bite into the sides of the aperture in that part of the band as at *c* (see more particularly Figure 6), and a definite lock of the overlapping parts of the band is obtained.

Such a construction will enable the band to withstand all necessary strain, particularly if the tongues be transversely curved in the manner above described.

It has been found that a very slight taper is all that is necessary and, in fact, the taper should not be too great as difficulty may then be experienced in getting the one tongue to slip readily under the other part of the band.

In this way it has been found possible to produce a seal which will withstand a considerably greater strain due to the fact that the tongues now bite definitely into the sides of the aperture and give a definite locking together of the overlapping parts of the band, this side locking effectively preventing the tongues tearing out.

I claim:—

1. A bale tie or band seal, comprising a plurality of spaced oppositely directed pairs of tapered tongues the same being coaxially alined and disposed with at least one pair up and one pair down from the overlapping parts of the band, the tongues of one band passing through the apertures formed by the punching of the corresponding tongues and the overlapping parts of the band being displaced relative to one another, whereby one of the tongues of each pair not only becomes located on the opposite side of the band through which it has passed but also bites into the sides of the corresponding aperture in said band.

2. A bale tie or band seal as claimed in claim 1, characterized in that the tongues are transversely curved at least at their bases.

JOHN VIVIAN PRESTWICH.