April 3, 1934. C. E. KOHLMANN 1,953,303

BALING BIT

Filed April 24, 1931

Fig. 1

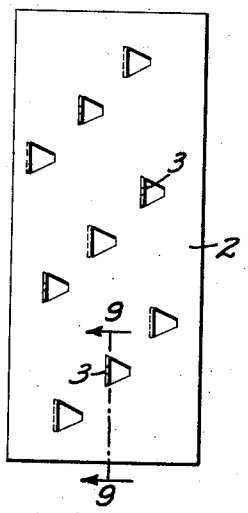


Fig. 2

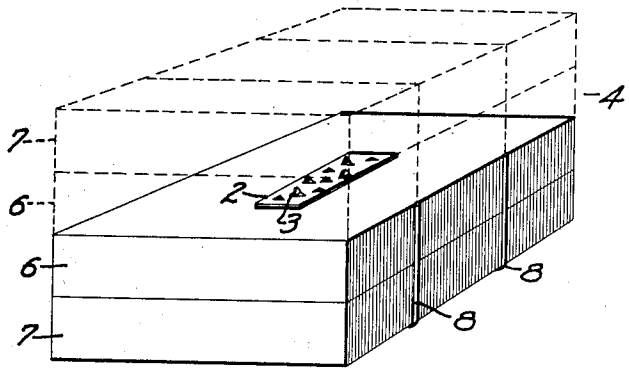


Fig. 3



Fig. 4

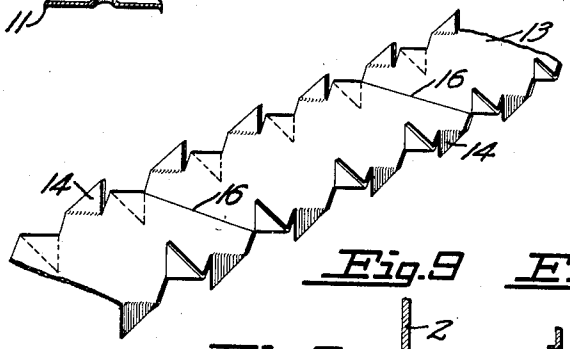


Fig. 5

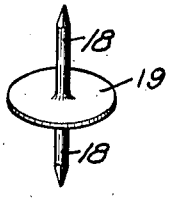


Fig. 9

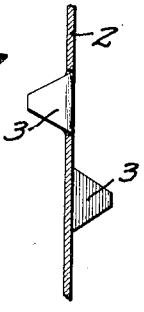


Fig. 10

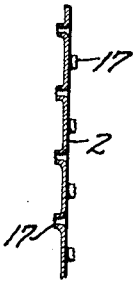


Fig. 6

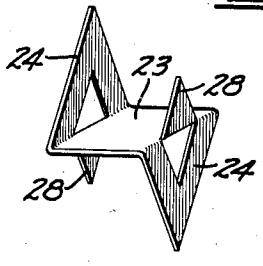


Fig. 8

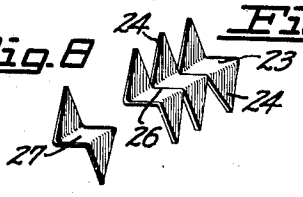
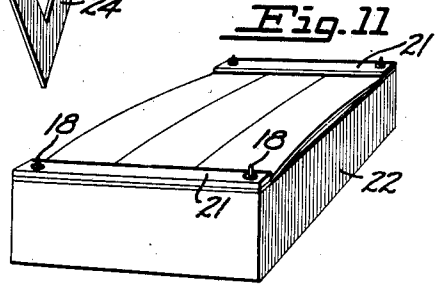


Fig. 7

Fig. 11



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UNITED STATES PATENT OFFICE

1,953,303

BALING BIT

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Application April 24, 1931, Serial No. 532,407

1 Claim. (Cl. 206—60)

My invention relates to a baling bit, and particularly to a bit for use in connection with the baling of boxes or cartons for shipment.

It is among the objects of my invention to provide a baling bit which will prevent the shifting of central units in a bale.

Another object of my invention is the provision of a baling bit which will preserve the form of the bale to facilitate the handling and stacking thereof.

Another object of my invention is the provision of a baling bit which may be produced cheaply enough to warrant discarding after it has served its usefulness in connection with a given bale.

The invention possesses numerous other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claim.

Referring to the drawing:

Figure 1 is a plan view of one form of bit embodying my invention.

Figure 2 is a perspective view of the bit as applied to a bale of boxes; portions of the bale being indicated by dotted lines to disclose the arrangement more clearly.

Figure 3 is a perspective view, partly in section, of a variant form of the bit embodying my invention.

Figure 4 is a perspective view of another variant form of bit and illustrates the method of forming the bits in a continuous strip.

Figure 5 is a modified form of the bit of my invention intended for use in the corners of boxes.

Figure 6 is a modification of the bit shown in Figure 5.

Figure 7 is a perspective view of a modification of the bit shown in Figure 6 and illustrates the method of forming the bits in a continuous strip; and

Figure 8 illustrates one of the bits separated from the strip.

Figure 9 is a cross sectional view of the bit shown in Figure 1. The plane of section is indicated by the line 9—9 of Figure 1; and

Figure 10 is a similar view showing a modified form of the bit.

Figure 11 illustrates the method of applying the bits of Figure 5 to the corners of a box.

Broadly stated the baling bit of my invention comprises a base, preferably a plate, having oppositely extending spurs arranged thereon. This plate is adapted to be inserted between each layer of units or boxes in a bale; the spurs engaging the walls of the boxes to prevent shifting of the central boxes relative to the outer boxes in the bale.

In greater detail the baling bit of my invention, as shown in Figure 1, comprises a base or plate 2 preferably of thin metal having burred surfaces. This burring is preferably accomplished by integrally forming the spurs 3 from the main body of the plate and arranging them in an oppositely extending and staggered relation. The spurs are preferably arranged so that alternate spurs project from opposite surfaces of the plate. As shown in Figure 2, the plate is adapted to be inserted between each layer of boxes in a bale 4; the purpose of this being to prevent the central boxes 6 from shifting relative to the outer boxes 7. The binding of the bale by the cords 8, or by other suitable means, causes the spurs 3 of the plate 2 to imbed themselves in the walls of the boxes, thereby locking each box to its neighbor. Staggering of the spurs on the plate reduces the likelihood of splitting the heads of wooden boxes, because no more than one spur engages the same grain of the wood.

Figure 3 shows a modification of my invention, in which the baling bit takes the form of a circular base plate or disk 9 produced by a loosely fitting punch and die so that a natural bur 11 is formed on the edge to provide a spur. A centrally disposed spur 12 is provided on the disk by forcing a spiculum thru the material. This form of bit may be used for smaller containers by positioning it in a manner similar to the bit shown in Figure 2, or, in the case of larger containers, by distributing several of the bits over the surfaces of the containers.

It is desirable, due to ease of manufacture, that the bits be formed from a continuous strip of material. As shown in Figure 4, a strip 13 of thin metal with the oppositely extending spurs 14 integrally formed along the side edges is provided; each alternate spur being bent to lie adjacent opposite sides of the strip. The scoring 16 extending transversely across the strip separates the strip into detachable unit portions, each forming a baling bit. By a slight flexing of the strip one or more portions may be severed from the main body. This permits of regulating the size of the bit to accommodate different sizes of containers.

Figure 10 shows a modification of the bit illustrated in Figure 1. In this case burring of the plate surfaces is affected by piercing the ma-

terial to provide a series of jagged protuberances or spurs 17. This type of bit is well suited for use on thin walled boxes where penetration of the wall by the longer spurs, would be liable to damage the contents of the container.

Still another type of bit is shown in Figure 5. This bit may be formed by welding a double pointed rod 18 into an apertured disk 19, or, in the preferred form by securing together, by welding or otherwise, the flat heads of a pair of tacks. In baling boxes in which the tops and bottoms thereof assume a curved position when nailed, it has been found that the bit just described is more desirable than the plate type. As shown in Figure 5 a bit is driven into the end of each cleat 21 of the box 22. This provides a pointed dowel in each corner of the box, upon which the next box of the bale is seated, thereby providing a secure connection between the boxes.

A modification of the type of bit shown in Figure 5 is illustrated in Figures 7 and 8. This modification is formed by serrating the edges of a strip of material 23 to provide spurs 24. These spurs are bent to lie at right angles to the strip; the spurs on one edge of the strip being bent oppositely from those on the other edge of the strip. Scoring 26 provides means whereby individual bits 27 may be separated from the parent strip. A further modification of this type of bit is shown in Figure 6. The general shape of this type is similar to that of the bit of Figure 8, with the exception that a second spur 28 is pierced from the spur 24. This provides a double pointed bit; the addition of the second set of spurs serving to materially increase the tenacity of the device. The application of the latter two types of bit to a box is effected by hammering them into the box by a method similar to that used in applying the bit of Figure 5.

The shipment and handling of small and medium sized boxes and cartons is best facilitated by securing numbers of the containers into separate bales. This may be accomplished in several ways; the method of tying the bale with wire or metal straps being the one most generally used. However this method of handling has a drawback in that the unsecured central boxes or cartons of the bale have a tendency of working loose and destroying the regular form of the package. This results in the inconvenience of rearranging the bales to restore their regularity so that they may be further handled or conveniently stacked. By the use of any of the bits of my invention an effective anchor for each container is provided which is preserved until the bale is unbound. This insures against shifting of the individual boxes and eliminates the possibility of collapse of the bale. Another important feature of my invention resides in the fact that the baling bits may be produced cheaply enough to warrant discarding after they have served their usefulness in connection with a given bale.

I claim:

A bale comprising a plurality of stacked sections, a bit normally separate from the sections and adapted for temporary placement between the sections to hold the same against shifting while in the bale and comprising a plate adapted to lie flatly between adjacent sections and having spurs extending from opposite sides thereof for engaging the opposing faces of the sections, said spurs being short relative to the width and length of the plate so that the bit when thrown haphazard upon the upper face of a bale section falls naturally into a position with the plate lying substantially parallel with said face and with the spurs pointing up and down and ready for engagement with the bale sections when another section is placed on the bit, and a tie wire surrounding the bale for holding the sections thereof in stacked relation.

CLARENCE E. KOHLMANN.