June 17, 1924. 1,498,377

H. H. HONIGBAUM

CRATE

Filed Sept. 10, 1923

Fig. 1

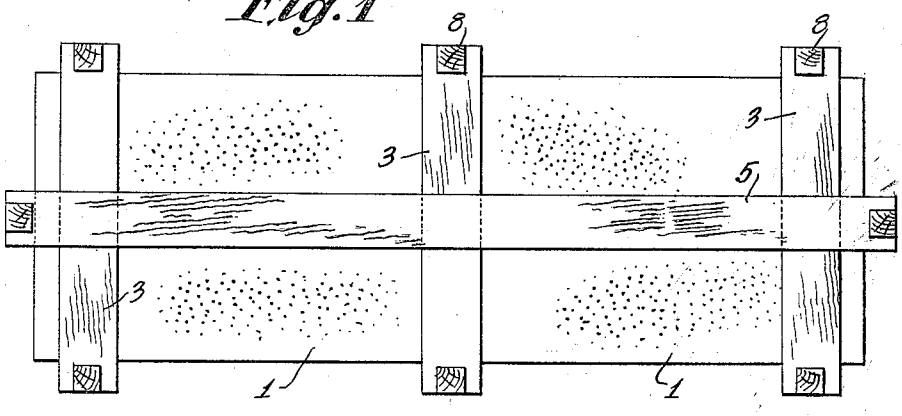
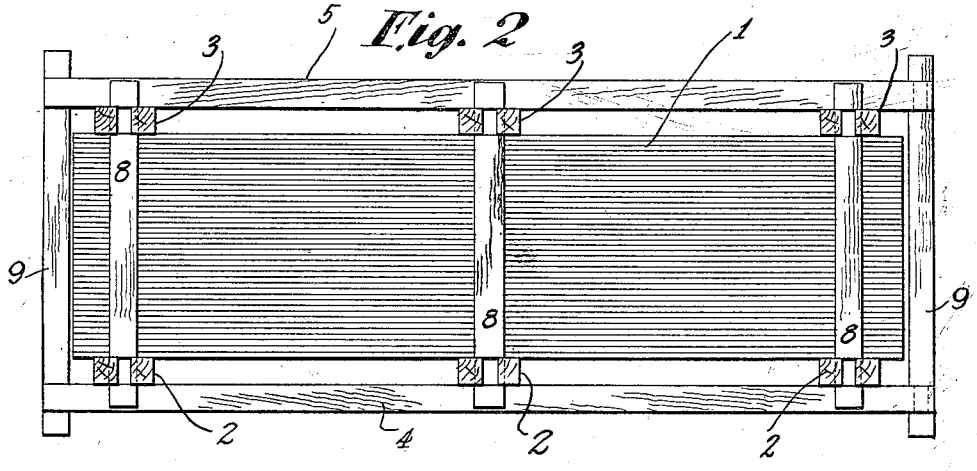


Fig. 2



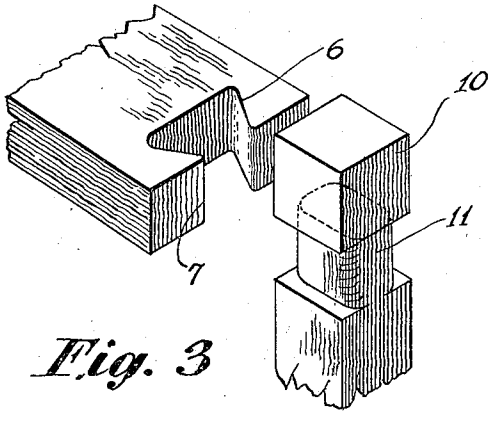


Fig. 3

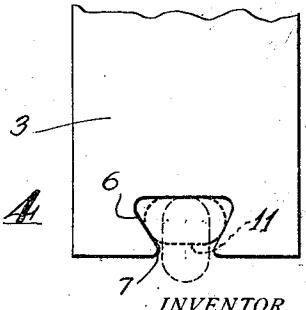


Fig. 4

INVENTOR.
Harry. H. Honigbaum
BY Jas. H. Griffin
ATTORNEYS.

Patented June 17, 1924. 1,498,377

UNITED STATES PATENT OFFICE.

HARRY H. HONIGBAUM, OF RICHMOND HILL, NEW YORK.

CRATE.

Application filed September 10, 1923. Serial No. 661,846.

To all whom it may concern:

Be it known that I, HARRY H. HONIGBAUM, a citizen of the United States, residing at Richmond Hill, county of Queens, and State of New York, have invented a certain new and useful Crate, of which the following is a specification.

This invention is a crate and while adapted for general and varied uses in the different arts is especially intended for the packaging of shingles in bundles and more particularly composition shingles which are commonly made in strips.

It has been the practice to box these composition shingles since the material from which they are made is relatively soft and will not withstand the wear and tear which would result if they were bound together by means of stripping or wire.

The object of the invention with reference more particularly to its use in connection with shingles is to provide a simple and efficient construction for packing the shingles in bundles in such manner that they will not be defaced, marred or destroyed either severally or collectively by the means which holds them in assembled relation or by contact with other packages of the same character or of different character. Under prior practice, composition shingles have usually been entirely encased in a wooden box whereas in accordance with the present invention they are held in packaging form by means of a skeletonized crate which may be readily assembled without the use of any extraneous attaching means such as nails, screws or the like in an expeditious manner to hold the shingles in bundles.

The crate is so constructed moreover that when it is desired to use the shingles the parts of the crate may be manually manipulated to dismantle the crate so that the several elements entering into its construction can thereupon be compacted and returned to the point of original shipment.

In its preferred practical form, the invention embodies a crate embodying a plurality of cleats adapted to be positioned at the top and bottom of a bundle of shingles and the opposite ends of each of which cleats is provided with a reentrant portion which may in practice be of substantially dove tail shape. After the cleats have been assembled at the bottom and top of the stack of shingles, pressure is imposed upon the top cleats to place the shingles under slight compression and force the upper cleats sufficiently close to the lower cleats to permit the opposite ends of juxtaposed cleats at the top and bottom of the stack to be tied together by means of tie members each of which is provided at its opposite ends with heads immediately adjacent which each tie member is shaped with a substantially oval cross section of less cross sectional area than the adjacent head. Each tie member when brought into cooperative relation with the associated dove tail reentrant portions of juxtaposed cleats is so proportioned that the oval section adjacent the respective heads may pass freely through the mouth of the dove tail reentrant portions, but after entering these portions the tie member may be rotated through an angle of ninety degrees to lock the tie member against removal from said reentrant portions in a lateral direction while the heads of the respective tie members will overlap the margins of the reentrant portions of the cleats and lock the cleats against movement in a direction away from one another.

If the pressure is now removed from the shingle stack the stack will tend to expand thereby placing the tie members under tension and precluding inadvertent rotation of these members relative to the cleats. When the shingles reach their destination and it is desired to release them, the tie members may be rotated and individually removed to permit the cleats to be taken off and all of the elements of the crate may be compactly stacked and bound together in compact form and reshipped to the point of original shipment to be applied to another shingle bundle.

An important feature which will be apparent resides in the fact that no nails, screws or other extraneous attaching means are utilized in the construction and inasmuch as the cleats have a relatively extensive bearing surface with the shingles, the shingles will not be damaged or otherwise impaired when packaged in the manner described.

It is to be understood that the invention is not restricted to use in connection with strip shingles and other uses as well as additional features of advantage inherent in this invention will be apparent from the hereinafter detailed description and claims when read in conjunction with the accompanying drawings.

The accompanying drawings illustrate one practical embodiment of the invention but the construction therein shown is to be understood as illustrative only, and not as defining the limits of the invention.

Figure 1 is a plan view of a crate embodying the present invention showing the same as forming a package for a stack of strip shingles.

Figure 2 is a side elevation of the construction shown in Figure 1.

Figure 3 is a perspective view illustrating one end of one of the cleats and the cooperating end of one of the tie members, these parts being separated in the interest of clearness; and,

Figure 4 is a plan view of one end of one of the cleats showing diagrammatically the manner in which a tie member may be brought into and out of locking relation with reference thereto.

In the accompanying drawings which illustrate the invention as applied to a crate for the packaging of shingles, 1 designates a stack of composition shingles. These shingles are adapted to be held tightly together for shipment from the point of manufacture to the place where they are to be applied to roofs.

In packaging the shingles for shipment I employ a plurality of cleats, eight being shown in the drawings. Three cleats 2 are positioned beneath the stack and extend transversely thereof, three similar cleats 3 are positioned on top of the stack and are juxtaposed with reference to the cleats 2. A long cleat 4 extends longitudinally beneath the cleats 2 while a similar long cleat 5 extends longitudinally of the stack and above the cleats 3. If desired the cleats 2 and 4 may be cut with half lapped joints to interfit with one another to preclude any tendency to shift relative to one another and the cleats 3 and 5 may be similarly jointed if desired although in practice this is not necessary.

All of the cleats are constructed in the same manner. That is to say, the free end of each cleat is provided with a reentrant portion 6 best shown in Figures 3 and 4. This reentrant portion may differ in shape but is preferably substantially dove tail as shown so that the mouth 7 of said portion is relatively constricted while that portion of the recess back of the mouth is enlarged. The form shown in Figures 3 and 4 has been found to give thoroughly satisfactory results although this form may differ without departing from the spirit of this invention.

With the corresponding ends of each two juxtaposed cleats is associated a tie member. The tie members 8 are adapted for cooperation with the cleats 2 and 3 while the tie members 9, which are somewhat longer, in the form of the invention shown, than the tie members 8 are adapted to cooperate with the corresponding ends of the cleats 4 and 5. Except for slight differences in length all of these cleats are of the same construction and this construction is best shown in Figure 3.

At the opposite ends of each tie member are heads 10 which in practice are made larger than the confines of the recesses 6 and directly adjacent each head 10, the tie members are cut away to provide a substantially oval cross sectional shank 11. The smaller dimension of this oval cross sectional shank is substantially equal to, though slightly less than, the mouth 7 of the recess 6, while the larger diameter of this oval cross section is considerably larger than the mouth opening. The oval portion is however so proportioned that when its smaller diameter is presented to the recess, it may be slipped through the mouth 7 to bring the oval cross section within the recess and the tie may be thereupon rotated through 90 degrees to bring the long dimension of the oval cross section transversely of the associated cleat for the purpose not only of locking the cleat against direct withdrawal through the mouth, but also positioning the head 10 of the cleat so that it cannot pull through the recess 6.

As stated all the cleats are made in the same manner and the method of applying the crate to a stack of shingles, when the parts are thus constructed, will now be described.

The lower cleats 2 and 4 are first laid upon a suitable support in proper assembled relation with reference to one another. This having been accomplished the stack of shingles to be packaged is laid upon the cleats 2. The cleats 3 and 5 are thereupon laid on top of the shingle stack and pressure applied to these cleats in a downward direction. This pressure may be obtained from any suitable source such as a power press or otherwise, the purpose being to place the shingles under compression and to force the cleats toward one another and into such spaced relation that the tie members may be brought into cooperation therewith. The tie members are made of such length that when the shingles are under compression as described they may be individually brought into cooperative relation with the corresponding ends of juxtaposed cleats in such manner as to present the narrow

portions of the shingles 11 to the mouths of the cleat openings. In this way, the tie members are, one at a time, brought into cooperative relation with the respective pairs of cleats and are rotated through 90 degrees to lock them in position. After the cleats are in position pressure on the shingle stack is released whereupon the stack will expand sufficiently to place all of the tie members under tension and thus firmly lock the crate in assembled relation, with the shingle stack enclosed therein.

When the assembly reaches its destination, the ties may be removed without necessarily applying pressure to the shingles. The rotation of the tie members may be accomplished by a wrench or otherwise but in any event said members may be readily released to dismantle the cleats and permit the removal of the shingles.

After the shingles are removed, the cleats and tie members may be tied together with a piece of cord or wire and returned to the point of original shipment for further use. For such return shipment, the parts will be compacted so as to occupy minimum space.

A marked advantage in the present construction over prior practice resides in the great simplicity of the construction, the ease of assembly and dismantling and the fact that no nails, screws or other extraneous devices are necessary. The crate elements are economical and easy to manufacture and nice fitting of the parts is not necessary.

Experience has shown that the shingles will be properly protected during transit against damage such as is commonly the case when the shingles are bound together with metallic strapping, wire or cord and, moreover, a much more economical and efficient construction results from the employment of the present invention than is the case when closed wooden boxes are used as a package for the shingles.

The fact that the heads of the tie members project beyond the cleats is an advantage since these projections protect the shingles from damage by adjacent articles during shipment.

The accompanying drawings show the employment of cleats running both ways of the shingle stack, but I am aware that the cleats may if desired run in one direction. That is to say, the cleats 4 and 5 may be omitted if desired although for greater security I prefer to use them in conjunction with the remaining cleats.

In the foregoing detailed description, the invention has been specifically described as used as a packaging for strip shingles. I am aware however that it is capable of other and general uses. For example, it is well adapted for employment in connection with express and parcel post service since it enables articles either of a fragile or a non-fragile nature to be securely packaged in such manner as to preclude their breakage or separation in the mails. The foregoing specification, in describing the method of packaging the shingles has referred to the employment of pressure on the goods when attaching the tie members. I am aware however that this pressure is not necessary in all connections or even in the packaging of strip shingles, since, when the ties are in position with reference to the cleats they will form a firm and rigid container for the articles housed therein.

Furthermore it will be apparent that while the drawings show the cleats and spacers to be positioned relatively far apart so as to form a relatively open crate, it will be apparent that instead of employing cleats at the top and bottom, plates may be employed and sufficient number of spacers positioned sufficiently close together may be used to form a substantially closed receptacle.

I am also aware that instead of employing cleats at the top and bottom a platform constructed in any suitable manner may be used at both the top and bottom or a flat board may be employed with the notches cut in the margins thereof. For these reasons, the invention is to be understood as not restricted to the specific construction shown but is to be understood as fully commensurate with the appended claims.

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

1. A crate embodying a plurality of cleats, each of which is provided at its opposite ends with reentrant portions having constricted mouths, and a plurality of tie members each of which is adapted to be associated with two juxtaposed cleats and each of which tie members is provided at its opposite ends with heads adjacent which the ties are provided with shanks of greater cross sectional dimension in one direction than in the other direction to permit the shanks to enter the reentrant portions of the cleats and to be thereupon rotated to lock said tie members against inadvertent removal from the reentrant portions, the heads of said tie members being sufficiently large to preclude their passage through the reentrant portions.

2. A crate unit embodying two cleats and two ties, each of the cleats being provided at its opposite ends with reentrant portions having constricted mouths and each of the ties being provided at its opposite end with slots and shanks adjacent the heads, said shanks being of greater dimension in one direction than in the other direction to permit the shanks to be introduced into the

reentrant portions and thereupon rotated to lock said shanks against inadvertent removal from such portions, the heads being sufficiently large to preclude the passage of the heads through the reentrant portions.

3. A crate embodying at least two cleats, each of which is provided in its opposite ends with reentrant portions and at least two ties, each of which is provided at its opposite end with a head adjacent the base of which head is formed a shank of reduced cross section to permit the shanks to be positioned in the reentrant portions of the cleats, said heads being sufficiently large to preclude their passage through the reentrant portions.

4. A crate for shingles embodying a plurality of cleats adapted to underlie a shingle stack and extend beyond the edges thereof, a like number of cleats adapted to overlie a shingle stack in juxtaposition with the underlying cleats and to extend beyond the edges of said stack, each of said cleats being provided in its opposite ends with a reentrant portion, and a plurality of ties and each of which ties is provided at its opposite ends with heads and adjacent which heads the ties are of reduced cross section to form shanks adapted to enter the reentrant portions of juxtaposed cleats, the heads of the ties being sufficiently large to preclude their passage through the reentrant portions of the cleats.

5. A crate for shingles embodying a plurality of cleats adapted to underlie a shingle stack and extend beyond the edges thereof, a like number of cleats adapted to overlie a shingle stack in juxtaposition with the underlying cleats and to extend beyond the edges of said stack, each of said cleats being provided in its opposite ends with a reentrant portion, and a plurality of ties and each of which ties is provided at its opposite ends with heads and adjacent which heads the ties are of reduced cross section to form shanks adapted to enter the reentrant portions of juxtaposed cleats, the heads of the ties being sufficiently large to preclude their passage through the reentrant portions of the cleats, the heads of the ties being spaced apart a distance which precludes the cooperation of the cleats and ties until the stack is placed under compression, whereby the release of such compression will place the ties under tension and preclude their inadvertent disengagement.

6. A crate for shingles embodying a plurality of cleats adapted to underlie a shingle stack and extend beyond the edges thereof, a like number of cleats adapted to overlie a shingle stack in juxtaposition with the underlying cleats and to extend beyond the edges of said stack, each of said cleats being provided in its opposite ends with a reentrant portion, and a plurality of ties equal in number to the number of cleats, and each of which ties is provided at its opposite ends with heads and adjacent which heads the ties are of reduced cross section to form shanks adapted to enter the reentrant portions of juxtaposed cleats, the heads of the ties being sufficiently large to preclude their passage through the reentrant portions of the cleats.

7. A crate for shingles embodying a plurality of cleats adapted to underlie a shingle stack and extend beyond the edges thereof, a like number of cleats adapted to overlie a shingle stack in juxtaposition with the underlying cleats and to extend beyond the edges of said stack, each of said cleats being provided in its opposite ends with a reentrant portion, having a constricted mouth, and a plurality of ties equal in number to the number of cleats and each of which ties is provided at its opposite ends with heads and adjacent which heads the ties are provided with substantially oval shanks of reduced cross section adapted to enter the reentrant portions of juxtaposed cleats, the heads of the ties being sufficiently large to preclude their passage through the reentrant portions of the cleats.

8. A crate for shingles embodying members positioned below and above a shingle stack and extending beyond the edges of the stack, said extending portions being provided with reentrant openings, and a plurality of ties each of which is provided with a head at its opposite ends and adjacent which heads the ties are of reduced cross section to form shanks adapted to enter said openings, the heads being sufficiently large to preclude their passage through the openings and positioned at such distance apart that the shanks can be positioned in the openings only when the shingle stack is under compression whereby the releasing of the compression will place the ties under tension and preclude their inadvertent disengagement.

9. A packaged shingle stack embodying a stack of shingles having upper and lower compression members and lateral tie members, the compression members extending beyond the edges of the stack and slotted to receive the tie members which are provided with heads adapted to engage the compression members beyond the slots for the purpose of holding the parts in assembled relation.

10. The method of packaging shingles which consists in placing a stack of shingles under compression, thereafter interfitting members extending around four sides of the stack and thereafter releasing the pressure on the shingle stack to hold the parts in assembled relation under the residual pressure of the shingle stack.

11. Means for packaging articles embodying top and bottom members both of which are provided with reentrant portions and tie members, each of which is provided at its opposite ends with a head adjacent the base of which head is formed a shank of reduced cross section adapted to permit the shanks to be positioned in said reentrant portions, said heads being sufficiently large to preclude their passage through the reentrant portions.

In testimony whereof I have signed the foregoing specification.

HARRY H. HONIGBAUM.