

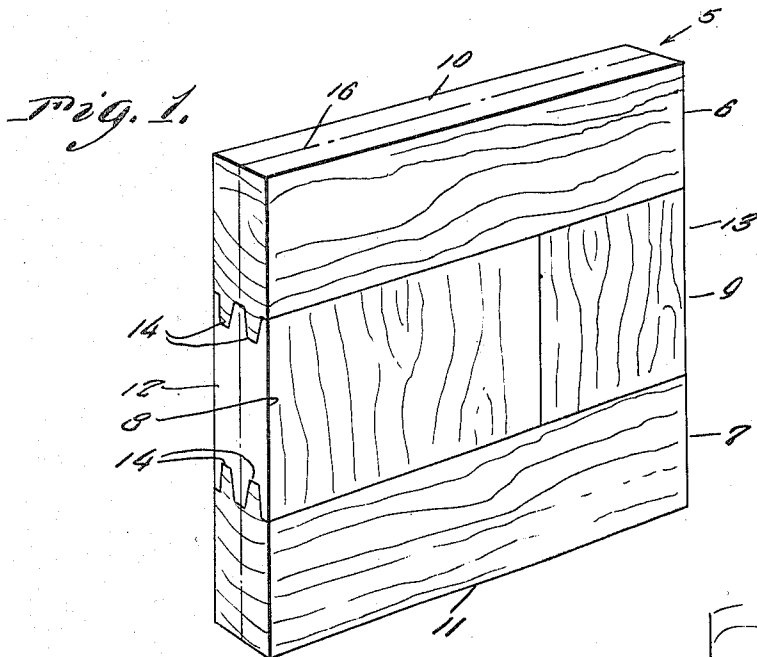
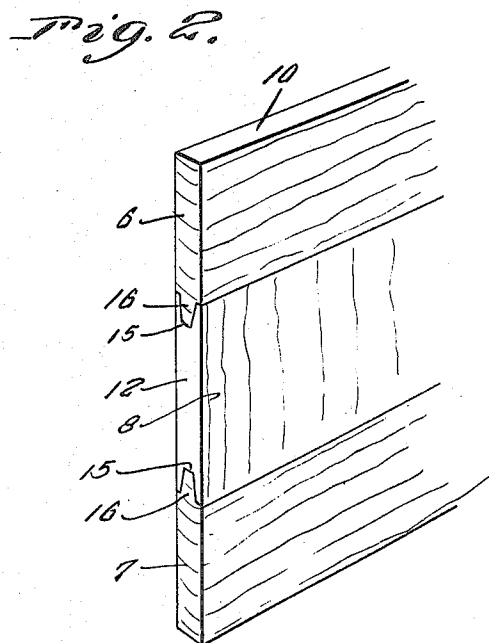
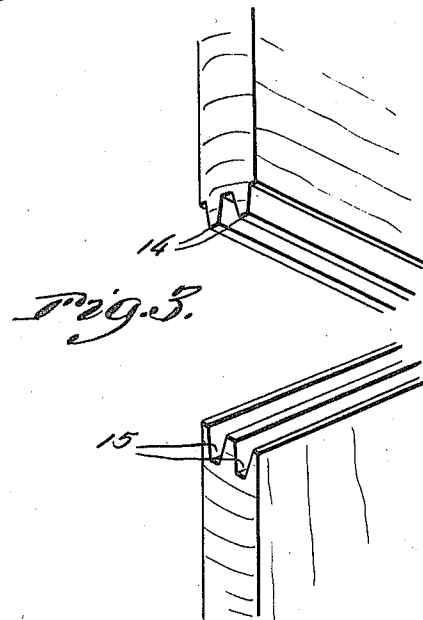
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SHOOK END

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SHOOK END

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4 Claims. (Cl. 217—36)

This invention relates generally to shook ends used in constructing boxes and crates, and particularly to a new and novel method of utilizing ordinarily waste lumber in the construction of an improved shook end which has the features of novelty and advantage set out in detail below.

It is well known in the industry that a standard citrus fruit box has its ends constructed of a standard size of eleven and one half inches by eleven sixteenths of an inch thick, and that the usual method of manufacture is to cut down twelve inch lumber of one and a half inch thickness to eleven and one half inch width. The cut pieces are then resawn in the center so as to make two identical shook ends, such shook ends having the disadvantage that they present end-grain nailing surfaces or edges on two sides, which are susceptible to and often do split.

A further disadvantage of such shook ends is that they readily warp. A further disadvantage of said shook ends is that they are comparatively expensive to manufacture in the manner referred to, since they require fresh or special stock or lumber from which they are made. A further disadvantage of such shook ends is in the manner of assembling them, where groove and tongue joints are employed, the manner of assembling and its susceptibility to breakage of the joints being well known.

I have discovered and invented a new and improved shook end which presents side grain nailing edges on all four sides of the shook ends instead of only on two, the improved shook ends having the further advantage of being comparatively non-warpable, and having the further great advantage of capability of being constructed from waste lumber, and so constructed from such waste lumber or stock as to be very easily and inexpensively and very solidly assembled.

Because of the structure of my invention, the constituent parts thereof may also be used in the manufacture of a great many other types of boxes, and an inferior grade of lumber, such as heavily knotted lumber, may be used for such parts of my improved shook end, thus promoting economy in manufacture and aiding in mass production as well as in the reduction of cost, besides providing a shook end having points of superiority not approached by any structure now used for this purpose.

Accordingly it is an object of this invention to provide a new and novel shook end of the type described which is composed of a plurality of pieces of lumber or stock arranged so as to present on all four sides or edges, sides-grain nailing edges.

It is also an object of this invention to so arrange the component parts of the new and novel shook ends as to have each part cooperate in

preventing and resisting warping of the shook ends.

It is also an object of this invention to facilitate the economical manufacture of my improved shook end by providing that they may be constructed of waste cuttings and in such a manner that parts constructed for use in the structure of my improved shook end may be used in a great many other types of boxes and in the manufacture thereof.

It is also an object of this invention to provide a shook end of the type described which because of its construction, permits the use of inferior grades of stock, such as heavily and largely knotted pieces in said portions thereof, which inferior grades of lumber or stock would otherwise be wasted, thus reducing the cost of the shook end and effecting a further economy in the use of lumber.

It is also an object of this invention to provide the cooperating parts of my improved shook end with an improved and novel tongue and groove arrangement, whereby the assembling and gluing of the parts is greatly facilitated, and the tenacity of the joints as well as the rigidity thereof is secured in the highest degree, preventing breaking off and separation of the parts at the grooved joints.

These and other objects in the invention, its nature and its composition and arrangement and combination of parts will be readily understood by any one acquainted with the art to which this invention relates upon consulting the following descriptions of the drawing in which:

Figure 1 is a general perspective view of a block constructed according to the principles of my invention, before sawing to provide a pair of shook ends.

Figure 2 is an end perspective view of a single shook end and

Figure 3 is a perspective view showing in detail the structure and arrangement of the tongue and groove between parts of the block illustrated in Figure 1.

Referring in detail to the drawing the numeral 5 generally designates a block constructed of an end piece 6, another end piece 7 and a pair or plurality of central pieces 8 and 9. The end piece 6 may be narrower than the end piece 7 in any proportion found desirable, according to the stock available and result desired. Of course it is provided that the central pieces 8 and 9 will be of such width as to give the block 5 the proper dimension when the end pieces 6 and 7 are assembled to the central pieces 8 and 9. It will be observed that the grain in the pieces 6 and 7 run longitudinally thereof, whereas the grain in the central pieces run transversely thereof, thus presenting at 10, 11, 12 and 13 side grain-nailing edges. Of course the end pieces 6 and 7

should be fairly clear lumber, but it will be obvious that the central pieces 8 and 9 may easily be of heavily knotted or imperfect lumber, since they do not expose end grain nailing edges, which are split frequently upon receiving nails therein. It is obvious the central pieces presents the side grain nailing surfaces 12 and 13. The inner edges of the end pieces 6 and 7 are provided with tongues 14 which are of a peculiar shape not known or applied previously in the art and to the use assigned herein.

The tongues 14 are V-shaped and provided with flat apexes as seen in the drawing. For receiving the tongues 14, the central pieces 8 and 9 have their end grain edges machined into grooves 15. The operation of machining the grooves 15 prevents under normal conditions the splitting of the edges of the central pieces. The tongues 14 are pressed into the grooves 15 by any suitable machinery, having first been coated with glue. The squeezing together of the component parts of the block 5 is very much facilitated by the shape of the tongues and grooves and this formation makes for a much better glue joint, since the surplus glue is pressed into the gullet of the grooves, which are made large enough to accommodate such surplus glue.

It will be observed that the width of the tongues at their bases is much larger than that provided by other types of tongues. The grooves 15 being on the end grain of the central pieces, prevent splitting off of the sides of the grooves 15. The width of the bases of the partitions of the grooves 15 are also of greater width than the ordinary type provides, thus adding strength to the construction. It has already been observed that the block is not susceptible of warping under normal conditions, due to the opposition of the run of the grain in the various component parts thereof.

When the end pieces 6 and 7 and the central pieces 8 and 9, which latter may be of one piece, or of a greater plurality of pieces than the two pieces shown in the drawing has been pressed together and properly machined, they are then sawed on the line indicated at 16 in Figure 1, so that a pair of shook ends is provided each of which is of the form illustrated in Figure 2.

If desired, the end pieces 6 may be of different widths, but equal length, it being economical to provide that all of the pieces 6 be of the same width and all of the pieces 7 of a different width from the pieces 6 but all of the pieces 7 of equal width, and the length of the pieces 8 is such that the widths of the pieces 6 and 7 plus the pieces 8 and 9 will constitute the proper standard dimension in size for the block. After the block is assembled and glued together, it is dressed down to the proper size, and sawn in the center of the line 16 as already described.

It will be obvious to those acquainted with the art that the short end pieces of the central portion composed in the embodiment illustrated in the drawing by the central pieces 8 and 9, can be very extensively used in the manufacture of other types of boxes and parts thereof and as stated the central pieces may be of inferior lumber, since they are encased by clear lumber so as to provide the side, grain nailing edges, thus effecting a very considerable economy and providing for a utilization of otherwise waste material.

It is to be definitely understood that I do not desire to limit the application of this invention

to the particular modification set out herein to illustrate the principles thereof, and any change or changes may be made in material and structure and arrangement of parts consistent with the spirit and scope of the invention.

Having thus described my invention, what I claim as new is:

1. A shook end comprising a pair of narrow elongated end pieces of wood with relatively short lengths of wood therebetween, constituting a central piece, said end pieces having the grain running longitudinally thereof and the short lengths constituting the central piece having the grain running transversely thereof, said end pieces being of relatively clear and sound material, and said central piece being composed of two or more sections of knotted and unsound waste material, said pieces being tongue and groove connected and glued, said sections of material being of different lengths.

2. In a shook end composed partly of sound and partly of unsound waste material, a pair of longitudinally grained relatively wide elongated flat plate of sound wood, a tongue projecting from one longitudinal edge of the plates, a relatively narrow elongated plate of unsound cross grained wood having a groove on either longitudinal edge receiving the tongue of the plates, said relatively narrow elongated plate comprising a plurality of sections of approximately equal transverse dimension, but different widths.

3. A method of making a pair of shook ends comprising providing a pair of relatively elongated blocks of wood having longitudinal grain, forming a pair of tongues on one longitudinal edge-grained edge of each of the blocks, making an intermediate portion having the grain running transversely with respect to the blocks by assembling in side-by-side manner a plurality of relatively short unsound pieces of wood having longitudinally running grain, then forming a pair of grooves in each longitudinal end-grained edge of said intermediate portion for receiving the tongues on the pair of blocks, assembling the blocks and pieces together with the tongues and grooves engaged, then gluing the tongues in the grooves, and cutting the resultant body longitudinally and centrally to produce a pair of similar shook ends, said tongues tapering divergently toward their base, the base being almost as wide as the edge of the shook.

4. In a shook end composed partly of sound and partly of unsound waste material, a pair of longitudinally grained relatively wide elongated flat plates of sound wood, a tongue projecting from one longitudinal edge-grained edge of the plates, a relatively narrow elongated plate of unsound cross grained wood having a groove on either longitudinal end-grained edge receiving the tongue of the plates, said relatively narrow elongated plate comprising a plurality of sections of approximately equal transverse dimension, but different lengths, the bases of the tongues being almost as wide as the plates are thick and the sides of the tongues convergently tapering from their bases toward their apex to provide a blunt apex and the grooves conformably tapering to receive the tongues and afford relatively large mutually supporting surfaces without unduly weakening the edges in which they are located, and the tongues being glued in the grooves.