Dec. 13, 1966 J. H. McCUE 3,291,298

HIP SHINGLE PACKAGE AND METHOD OF PACKAGING

Filed March 31, 1964 3 Sheets-Sheet 1

FIG. 1.

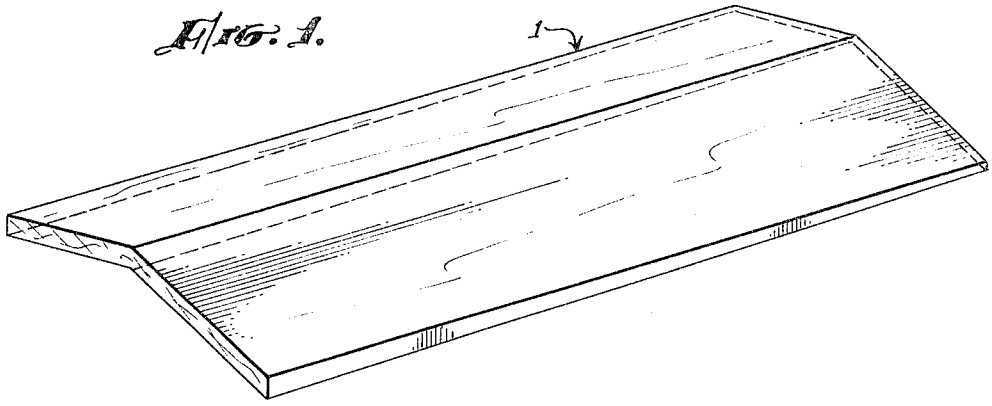
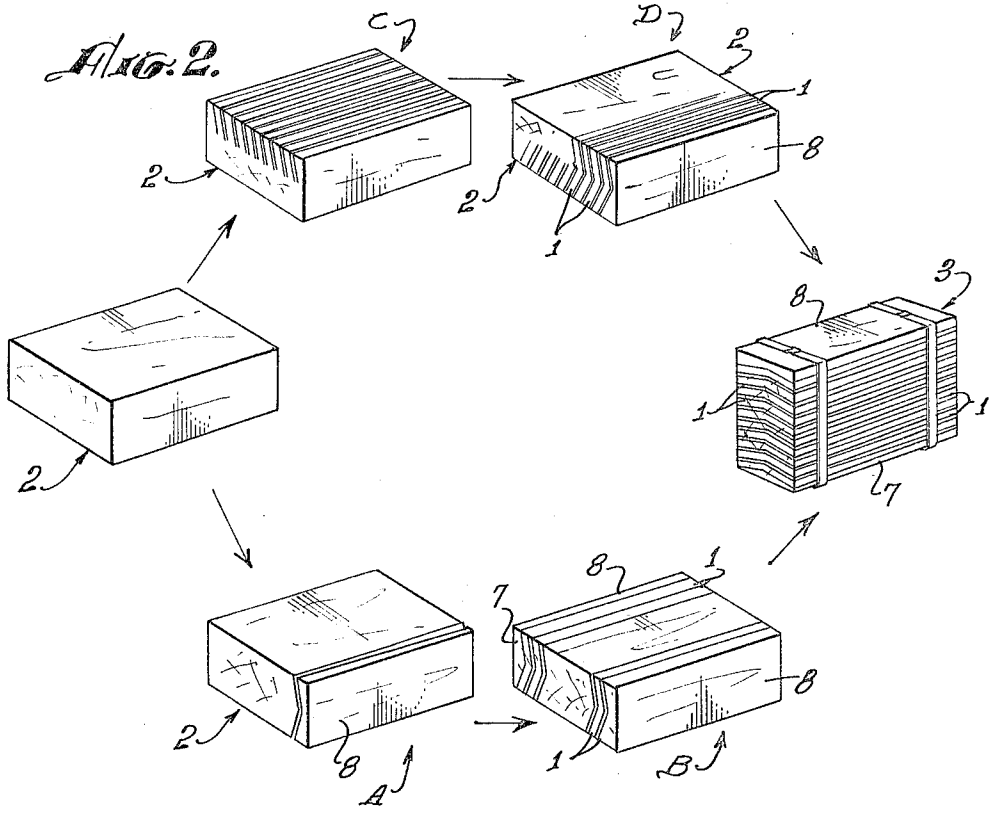


FIG. 2.



JAMES H. McCUE,
INVENTOR.

By Harold J. LeVesconte
ATTORNEY

Dec. 13, 1966 J. H. McCUE 3,291,298

HIP SHINGLE PACKAGE AND METHOD OF PACKAGING

Filed March 31, 1964 3 Sheets-Sheet 2

FIG. 3.

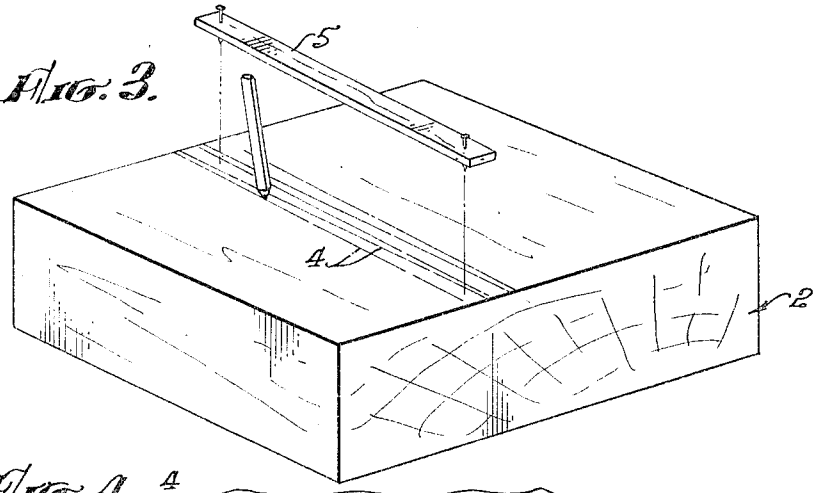


FIG. 4.

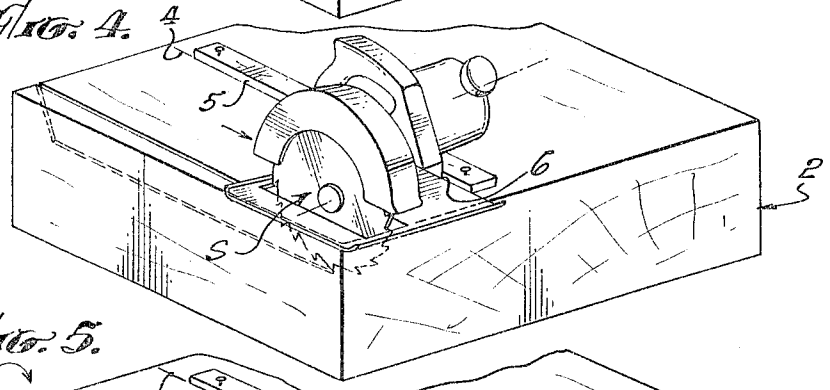


FIG. 5.

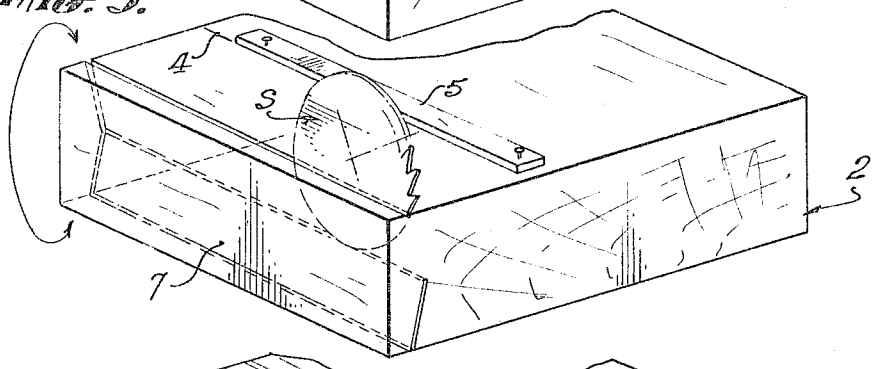
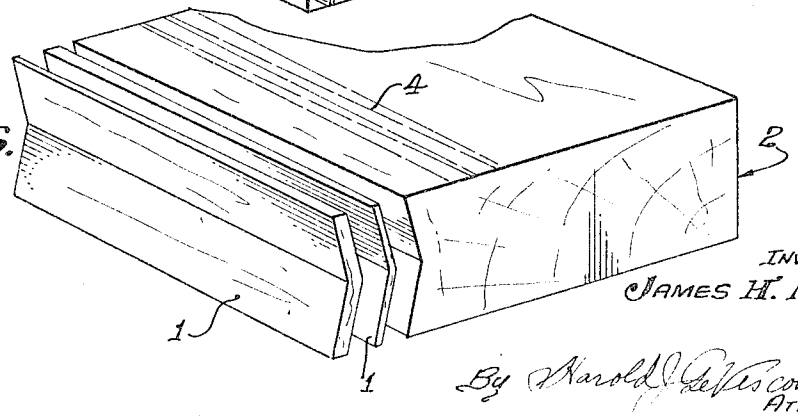


FIG. 6.



INVENTOR.
JAMES H. McCUE,

By Harold D. DeVisconte
ATTORNEY.

Dec. 13, 1966 J. H. McCUE 3,291,298

HIP SHINGLE PACKAGE AND METHOD OF PACKAGING

Filed March 31, 1964 3 Sheets-Sheet 3

FIG. 7.

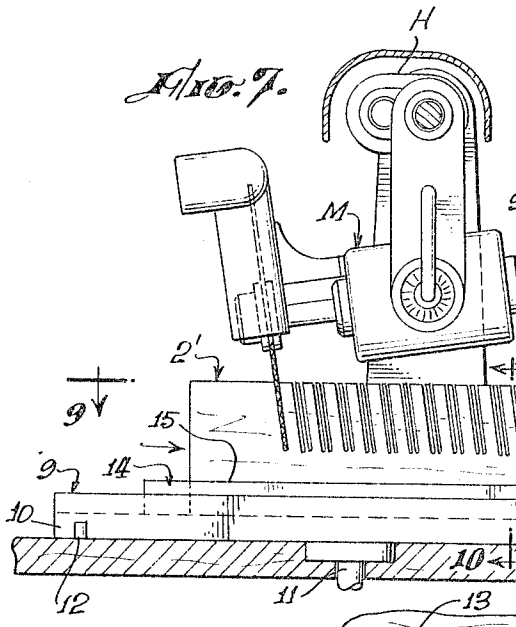


FIG. 8.

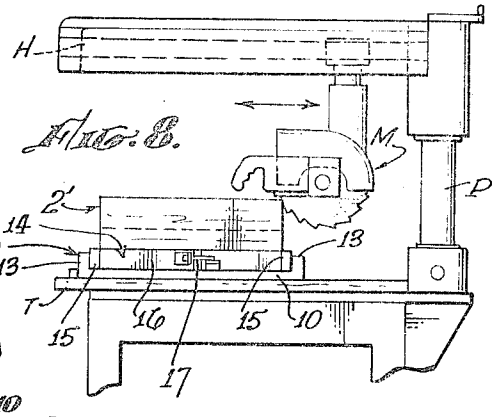


FIG. 9.

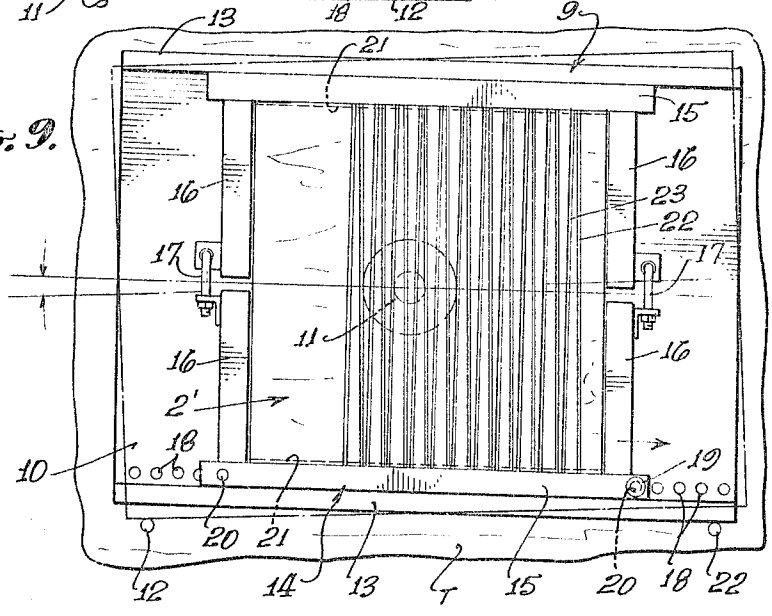
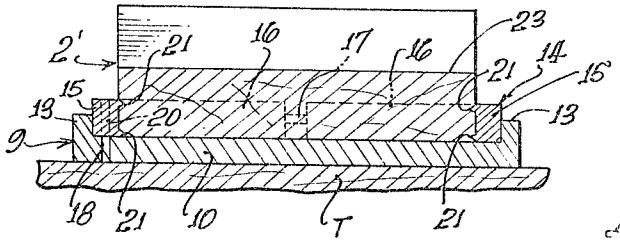


FIG. 10.



INVENTOR.
JAMES H. McCUE,

By Harold J. Delvecchio
ATTORNEY.

United States Patent Office 3,291,298 Patented Dec. 13, 1966

3,291,298

HIP SHINGLE PACKAGE AND METHOD OF PACKAGING

James H. McCue, 2200 N. Arroyo Blvd., Altadena, Calif.

Filed Mar. 31, 1964, Ser. No. 356,212
6 Claims. (Cl. 206—46)

This invention relates to wood shingles and more particularly to hip shingles.

The common finish for the ridge of a wood shingled roof or dormer is a row of hip shingles usually comprising two rather narrow shingles having the adjacent edges nailed together at an angle corresponding to the corresponding slope of the rige to which it is to be applied. Generally, the manufacture of such shingles comprises, first ripping standard flat shingles to the desired width (usually about 3") with the edges of one or both of the shingles which are to be joined formed at such an angle that when nailed together, they form the desired angle for the resulting hip shingle. Generally, also for shipping purposes, hip shingles are nested and packed in bundles in which the shingles are arranged with the thick or butt ends thereof in alternation and the bundle of shingles is then secured by wires or straps. This then requires the steps of, first sawing the flat shingles, next cutting them to the desired widths and with the desired angles at one side edge thereof, then nailing or stapling the pairs of shingles together, and finally stacking them in bundles and securing the bundles with straps or tape thus making a total of at least five separate operations.

It is an object of the invention to saw a plurality of one-piece hip shingles from a block of wood in such manner that as the individual shingles are thus produced, they are automatically positioned for securing into a bundle by the application of straps.

Another object of the invention is to provide a method of manufacturing one-piece wooden hip shingles.

A further object of the invention is to provide an improved bundle of hip shingles.

With the above objects in view, together with such additional objects and advantages as may subsequently appear, the invention resides in creating a novel package of one-piece wood hip shingles, a novel manner or method of the manufacture thereof, and a novel mode of packaging of the said hip shingles, all of which is disclosed, by way of example, in the description of certain presently preferred embodiments of the invention contained in the following specification, reference being had to the accompanying drawings which form a part of said specification and in which drawings:

FIG. 1 is a perspective view of a one-piece hip shingle constituting a component of the invention so far as the product is concerned,

FIG. 2 is a diagrammatic showing of the basic principles of the method, product and package embodying the invention,

FIGS. 3 through 6 show typical steps of the practice of one form of the method not involving the use of any special tools therefor and in which figures:

FIG. 3 shows a block of wood from which a plurality of hip shingles of the invention are to be cut, the initial step of applying layout lines on the block being indicated,

FIGS. 4 and 5 show the first two saw cuts which remove an end from the block and form one side face of the first shingle to be cut, and

FIG. 6 shows the next two saw cuts and the completion of the first shingle; the base block or end piece which was previously cut being omitted for clearness of illustration,

FIGS. 7 through 10 show a mechanized version of the method in which a so-called radial arm saw is employed, said figures being employed only to disclose and teach

that the method is not necessarily confined to the simple steps shown in the preceding figures, and in these figures:

FIG. 7 is a front elevational view of a radial arm saw arranged for the practice of the method and the production of the novel shingles of the invention,

FIG. 8 is a reduced scale, side elevational view as viewed from the right hand side of FIG. 7,

FIG. 9 is a top plan view taken on the line 9—9 of FIG. 7, the saw being omitted for clearness of illustration, and

FIG. 10 is a fragmentary transverse sectional view taken on the line 10—10 of FIG. 7.

Referring first to FIG. 1 of the drawings, there is shown a hip shingle 1 formed according to the invention, said shingle being sawed out of a block of wood by the method presently to be described. While the size of the shingle is not important to the present invention, it may be mentioned that hip shingles, by whatever process they may be produced, are generally approximately 16" in length and taper from a butt end thickness of ½" to about ⅛" or less at the other end and extending laterally approximately 3" from the center ridge, the angle between the halves being that which will accommodate the pitch of the roof at the opposite sides of the ridge. In the drawings, the shingles are shown somewhat out of proportion from the dimensions above given for the sake of clearness of illustration. The block will, therefore have a thickness equal to the desired width of shingle a length equal to the desired length of shingle and a width sufficient to cut a desired number of shingles therefrom, the dimension being transverse to the grain of the wood, being subject to limitation by the diameter of log from which the block is sawed. The shingle thus has two sides forming the external V-shaped surface and two sides forming the internal or under V-shaped surface.

FIG. 2 illustrates schematically two modes of manufacture showing the stages between the block 2 from which the shingles are to be formed to the resultant package or bundle 3. Having reference to stages A and B, a method is shown in which the shingles are cut one at a time by alternate saw cuts from opposite sides of the block. Stages C and D show a more practical method embodying the use of a radial arm saw and special holding and indexing equipment and such equipment is shown in FIGS. 7 through 10 and differing in that all cuts are first formed on one side of the block and then on the opposite side thereof.

Referring first to FIGS. 3 through 6, FIG. 3 shows the preliminary step of laying out one side of a surface of a block 2 with guide lines 4 generally parallel to the grain of the wood and being alternately oppositely inclined to form the tapers of the alternately disposed shingles, the said layout including drawing identical guide lines at the opposite side of the block. A straight edge strip 5 is tacked on the first guide line for the edge guide 6 of the power hand saw S, the motor and saw blade of which has been tilted to the correct angle and the saw blade adjusted vertically to form a kerf of half the width of the shingle as shown in FIG. 4. When the first cut is completed, the strip 5 is removed, the block inverted and the strip tacked on the matching guide line and the second cut taken as shown in FIG. 5 thus cutting out the base piece 7 and forming the under side of the first shingle 1. The strip 5 is then moved to the next guide line which, of course, is at a slight angle to the first guide line to form the taper of the first shingle. The cut is made, the block again inverted and the matching second cut is made thus completing the formation of the first shingle 1. The next shingle is similarly cut but the angles of the guide line are changed so that the butt end of the next shingle is at the opposite edge of the block. These cuts are con-

tinued until the other end of the block is reached. Since the guide lines are some distance from the saw cuts, the guide lines for the last several cuts may be formed on an adjacent block against which the block being sawed is held while the final cuts are made. Alternatively, if the operator has sufficient skill, the guide lines may represent the actual saw cuts and the guide strip eliminated. When all of the shingles have been cut, they may be stacked as cut on the base piece 7 and the stack of shingles capped with the cap piece 8 remaining after the last shingle is cut from the block and the whole bundle then bound by straps or other tie means. Alternatively, the block might have all of the cuts formed on one side thereof, then inverted and the other cuts be formed as shown in stages C and D in FIG. 2.

While the more common motor driven saw is shown, it is obvious that while admittedly less economical, the shingle could thus be cut by an ordinary hand saw, if desired. The purpose of thus illustrating a very simple and primitive way of forming these shingles is to make it completely clear that the practice of the method is not dependent upon a particular piece of apparatus or equipment.

Referring finally to FIGS. 7 through 10, the invention is shown as applied to radial arm saw equipment, such equipment comprising a table T having a post P rising therefrom at the rear of the base, said post carrying a forwardly extending horizontal arm H on which a motor saw unit M is mounted for manually inducing travel longitudinally of the arm. The post is vertically adjustable for depth of cut by the saw and the motor and saw are mounted for angular adjustment about an axis parallel to the arm H.

Mounted on the base T is a fixture **9** for positioning a block of wood for successive cuts in the formation of a plurality of shingles therefrom said fixture comprising a base **10** mounted on the table T for limited pivotal movement about a vertical axis pivot **11** and the extent of movement of the base being limited by stop pins **12, 12** carried by the table T. The base **10** is provided with parallel side rails **13, 13** between which the shingle block holding frame assembly **14** is slidably mounted. The shingle block holding frame comprises substantially identical, halves, each half comprising a side rail **15** having an outer face engageable with one of the side rails **12** and end rail members **16, 16** extending substantially half of the length of a block in the direction in which saw cuts are to be made. Clamp bolts **17, 17** afford means for securing the frame around a block **2'** to be sawed and beneath the path of one of the rails **15**, the base member **10** is provided with a row of indexing holes **18** engageable by a stop pin **19** slidable in one or the other of holes **20, 20** in the one of the side rails **16** which overlies the holes **18**, the spacing between said holes being the thickness of the shingle at midlength plus the width of the saw kerf. Preferably also, the side rails **16** have ridges or points **21** which bite into the end grain of the wood of the block from which the shingles are to be made and the total height of this block clamping means is substantially less than half the thickness of the block.

Three steps of the method using the above described apparatus are generally as follows, assuming that a block of wood of a desired size to form a bundle of shingles is placed in the holding means and is clamped therein and is moved to the position for making the first saw cut and assuming, further, that the saw has been adjusted to cut a shingle of the desired angle and a depth of cut equal to half the width of the shingle, the first saw cut **22** is made with the base **10** against one of the stop pins **11**. The block and the holding means is then indexed one space to the right as viewed in FIG. 9 and the base is swung to engage the other stop pin **11** thus producing a second cut **23** at such an angle to the first cut **22** as to produce the desired thickness at the butt and opposite ends of the shingle. The block and frame are again indexed to the next hole and swung in the opposite direction about the pivot **11** and this procedure is followed until one side of the block has been completely provided with the saw cuts. The block is then released from its clamping means and is inverted without turning it end for end again clamped in the clamping means and the same cuts are repeated thus forming the base piece **7**, the cap piece **8** and the intermediate nested shingles already arranged in the manner in which they are to be bound in the bundle whereupon, the straps can be applied around the nested shingles and their cap and base pieces to complete the formation of the bundle.

Thus it is believed to be apparent that there is provided a new type of hip shingle package as well as a method by which the package may be formed, such method, so far as the production of the shingles is concerned, being capable of being practiced with the use of ordinary carpenters' tools. Additionally, the practice of the method with more sophisticated equipment is shown in FIGS. 7 through 10 and it will be obvious to those skilled in the art to which the invention appertains that in the light of this teaching, only ordinary engineering skill would be required to produce equipment which would be at least partially, if not entirely automatic if that should be desired, the practical consideration being the fact that compared to ordinary wood shingles the proportion the hip shingles used on building is so small as probably not to warrant the expenditure of capital outlay for highly specialized automatic or semi-automatic sawing equipment. It is particularly to be noted that as the individual shingles are sawed from the block they are automatically arranged for packing and that leaving the base piece and cap piece of each block with the bundle makes a bundle which is more stable than a bundle not thus reinforced and which can more readily be stacked than bundles not having the flat ends thus provided.

While in the foregonig specification there has been disclosed presently preferred examples of the embodiments of the invention representing the package and, the method of producing the package, it is not to be inferred therefrom that the invention is to be deemed to be limited to the precise details thus shown by way of example, and it will be understood that the invention includes as well, all such changes and modifications in the article, the method and the package as shall come within the purview of the appended claims.

I claim:

1. As an article of manufacture, a rectangular package comprising a plurality of one piece wood hip shingles disposed in nested relation to each other and with the butt ends of alternate shingles disposed at opposite sides of the package, a base piece having a side surface complementary to the exposed internal V-shaped surface of said nested plurality of singles and an oppositely disposed flat surface, a cap piece having a side surface complementary to the exposed external V-shaped surface of said plurality of shingles and an oppositely disposed flat surface parallel to said parallel surface of said base piece and band means securing said nested plurality of shingles and said base and cap pieces in a rectangular package.

2. As an article of manufacture, a package of hip shingles as claimed in claim **1** in which said plurality of shingles and said base and cap pieces are cut from a single block of wood and are bound together by said band elements in the same order as cut from the block.

3. As an article of manufacture, a package of hip shingles as claimed in claim **1** in which each said shingle is sawed as an entity from a block of wood by a series of four saw cuts generally parallel to the grain of the wood and defining the four side faces of the shingle, the side edges of the shingle being defined by the side edges of the block from which the shingle has been sawed and the ends of the shingle being defined by the ends of said block.

4. As an article of manufacture, a package of hip shingles as claimed in claim 1 in which said base piece has an external V-shaped side surface complementary to the internal V-shaped surface of the adjacent shingle, the side edges of said base piece constituting the side edges of the block from which said base piece and the shingles of said package were cut, the ends of said base piece constituting the ends of said block and the side of said base piece opposite said V-shaped surface constituting one side of said block.

5. As an article of manufacture, a package of hip shingles as claimed in claim 1 in which said cap piece has an internal V-shaped surface complementary to the external V-shaped surface of the adjacent hip shingle in the package, the side and end edges of said cap piece and the side surface opposite said internal V-shaped surface constituting the portions of the surfaces of the block from which the package of shingles including said cap piece has been cut.

6. The method of manufacturing wood hip shingles which comprises the steps of, providing a rectangular block of wood having a thickness dimension substantially equal to the desired width of shingle, a second dimension at right angles to said first dimension and generally parallel to the grain of the wood and which is equal to the desired length of shingle, and a third dimension at right angles to both of said other dimensions and greater than the combined thickness of the desired number of shingles to be cut from said block measured at the midlength of the shingles plus the total width of the saw kerfs necessary to cut said desired number of shingles plus the height of one shingle also measured

at said midlength position, then sawing said block by a first series of saw cuts extending generally parallel to said second dimension on one side of said block and a second series of saw cuts complementary to said first series of saw cuts and meeting mating ones of said first series of saw cuts at the median of said thickness dimension; all of the saw cuts of said first series being disposed to the complementary ones of said second series of saw cuts at an angle corresponding to the desired hip angle, and the individual saw cuts in each of said series being disposed at such angles to each other as to produce successive hip shingles with the butt ends thereof alternatively at opposite ends of said block, and finally securing all of the shingles cut from said block and the end pieces of the block resulting from cutting said shingles into a package as cut from said block.

References Cited by the Examiner

UNITED STATES PATENTS

513,813	1/1894	Munro et al.	206—46
2,133,683	10/1938	Black	206—60
2,346,450	4/1944	Owen	206—46
2,440,994	5/1948	Wilde	144—13
2,499,959	3/1950	Kruse et al.	144—256
2,934,110	4/1960	Barker	144—13
2,987,088	6/1961	Dennison	144—326
3,053,295	9/1962	Duncan	144—326
3,206,050	9/1965	McCracken	206—60

THERON E. CONDON, *Primary Examiner.*

WILLIAM T. DIXSON, JR., *Examiner.*