Jan. 21, 1964 W. H. ALLEN 3,118,536

PACKAGE AND METHOD OF PROCESSING AND PACKAGING

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Fig. 1.

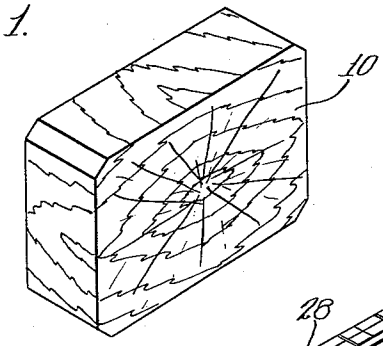


Fig. 2.

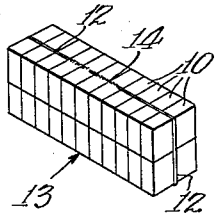
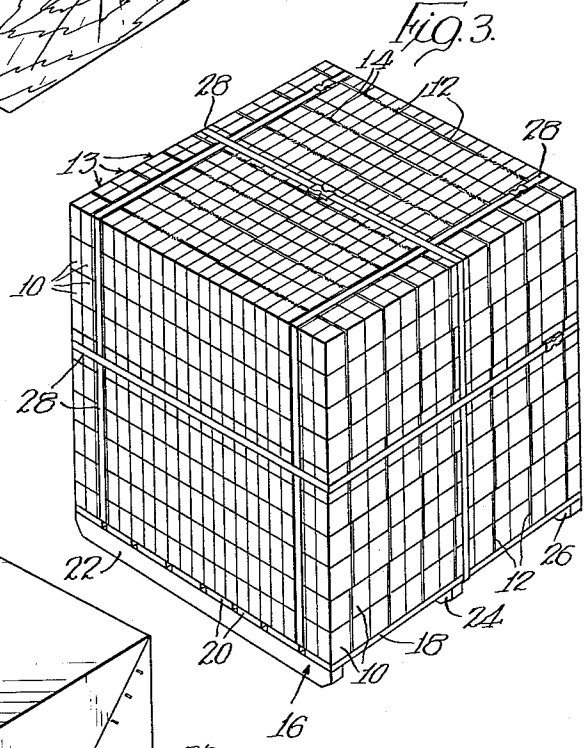


Fig. 3.



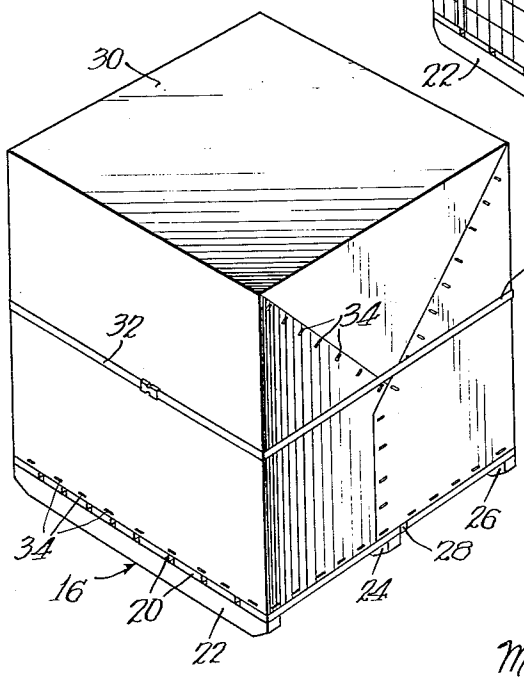


Fig. 4.

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Fig. 5

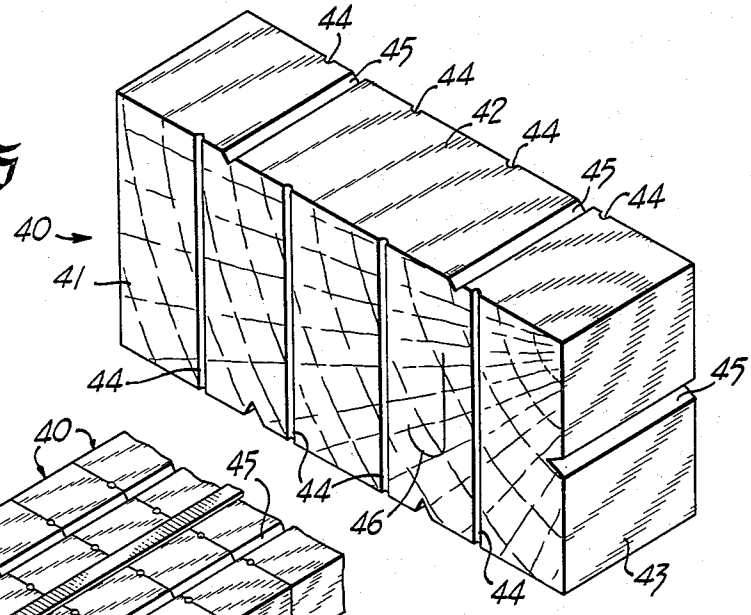
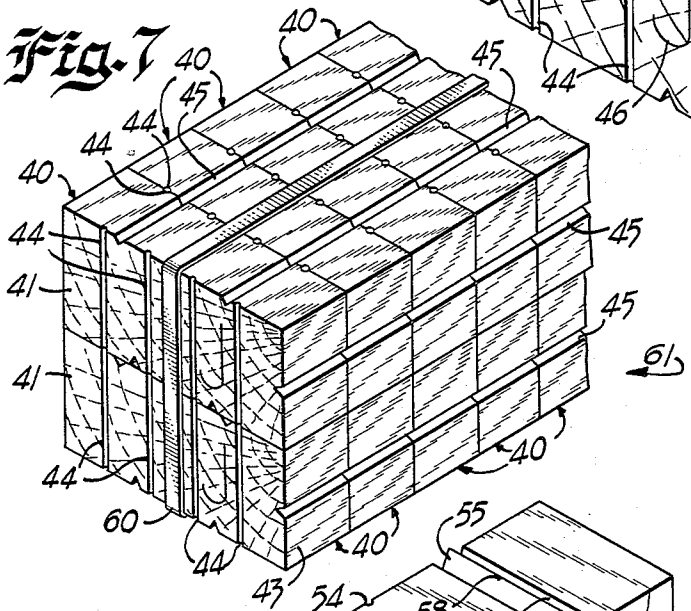


Fig. 7



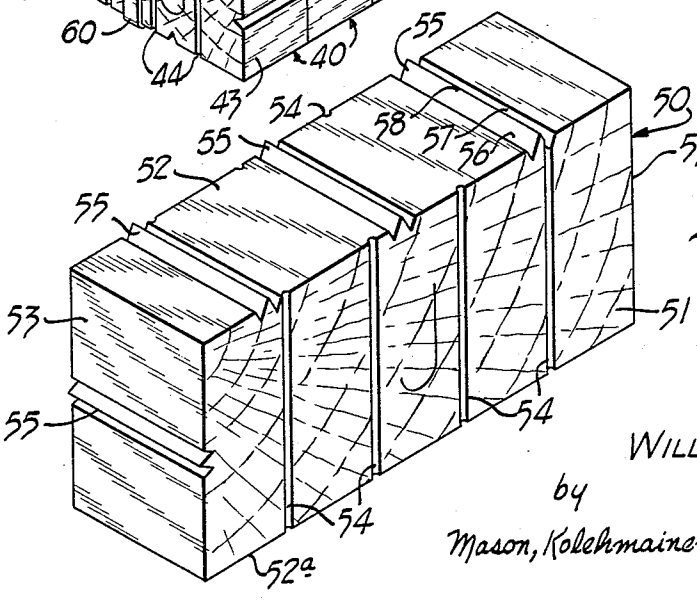


Fig. 6

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PACKAGE AND METHOD OF PROCESSING AND PACKAGING

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4 Claims. (Cl. 206—65)

The present invention relates to a method of processing and packaging substantially rectangularly-shaped wooden blocks, such as, for example, blocks of the type commonly used for factory flooring and the like, and the invention also relates to a new and improved package of such blocks. This application is a continuation-in-part of my copending application Serial No. 665,500 filed, June 13, 1957, now abandoned and which is a continuation of my copending application Serial No. 483,743, filed January 24, 1955, now abandoned.

Wooden blocks of this type are generally cut from pine or oak logs on multiple saws and are treated with a preservative such, for example, as creosote or pentachlorophenol, so that they are free from attack by termites, damp rot, and the like. The blocks are then shipped to the location at which they are to be assembled into floors or in many instances they are shipped to points of disbursement such as lumber yards where they are stored until required for use. Until recently, all such blocks were sold in bulk, i.e., they were sold and delivered in much the same manner as is coal or crushed stone. However, for a number of reasons the trend has ben for more and more users to demand packaged blocks so that at the present time the vast majority of blocks are sold in packaged form.

Various types of packages and methods of packaging have been and are in use at the present time but for one reason or another these packages have all proven to be unsatisfactory. For example, one such package comprises a fiber or cardboard carton in which the blocks are hand-packed. The cost of such a package is relatively high, the size is necessarily small because of the low strength of the fiber or cardboard, and when the package is opened the blocks must be handled loosely as with pitchforks and wheelbarrows, thus resulting in relatively high breakage. Another prior art form of package comprises burlap bags which are filled with blocks. Obviously, such a package is only slightly removed from bulk or loose blocks and has nearly all of the disadvantages of loose blocks such, for example as a high percentage of breakage, and difficulty of handling with the resulting high cost.

Since the type of wooden block with which the present invention is primaraily concerned is a relatively low cost item, from a standpoint of economy it is usually desirable to store these blocks outside. Under such circumstances it is important that the blocks be protected from the elements since they tend to absorb water and swell up. If laid in a floor while in this enlarged state, when they dry out and shrink, the blocks in the floor will be quite loose.

Another disadvantage of the above methods of packaging is that in accordance with these prior art techniques the blocks are first cut and then subjected to a chemical treatment with a preservative before being placed in the shipping containers. This technique has a great many

drawbacks of which the principal ones are that the blocks are individually handled during the treating process and are usually packaged in the containers while they are still sticky, thus making the handling thereof both difficult and expensive.

An object of the present invention is, therefore, to provide a new and improved method of processing and packaging wooden blocks of the general type heretofore described.

Another object of the present invention is to provide a new and improved package for wooden blocks.

Another object of the present invention is to provide a new and improved method of packaging blocks such that large numbers of these blocks may be provided in a single package which may easily be handled without damage thereto.

Still another object of the present invention is to provide a new and improved method of packaging and processing wooden blocks of the type described whereby both the processing and packaging operations are so related as to be each performed at a minimum cost to effect a final package which is free from the above-described disadvantages of the packages of the prior art.

Yet another object of the present invention is to provide a new and improved method of packaging wooden blocks in order to produce a package which contains a large number of blocks and yet which is readily maneuverable and easily transportable.

A further object of the present invention is to provide a new and improved package of wooden blocks of the type described which may be stored outside for long periods of time without incurring damage to the blocks.

A still further object of the present invention is to provide an improved method of packaging which is relatively inexpensive and yet results in the production of a package which is sturdier than any known in the prior art.

Further objects and advantages of the present invention will become apparent as the following description proceeds, and the features of novelty which characterize the invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

Briefly, in accordance with the present invention, after being cut on multiple saws the rectangular wooden blocks are baled end grain to end grain into a plurality of subunits which in turn are baled onto a slidable skid. The bale of subunits is then treated with a chemical preservative, and finally, where necessary, a cover material is placed over the bale of blocks and secured thereto to complete the package.

In one preferred embodiment of the invention, the faces of the blocks are embossed in a linear pattern designed to give access of the chemical preservative solution to adjacent faces of the blocks as they occur in the package.

For a better understanding of the present invention reference may be had to the accompanying drawing in which:

FIG. 1 is a perspective view of a single wooden block of the type with which the method of processing and packaging of the present invention finds particular application;

FIG. 2 is a perspective view of a single subunit comprising a plurality of the blocks of FIG. 1 baled together;

FIG. 3 is a perspective view of a package in which a multiplicity of the subunits of FIG. 2 are baled together and to a support skid;

FIG. 4 is a perspective view of the completed package of the processed blocks;

FIG. 5 is a perspective view of a modified form of wooden blocks with which the method of processing and packaging of the present invention finds particular application;

FIG. 6 is a perspective view of another modified form of wooden blocks with which the method of processing and packaging of the present invention finds particular application; and

FIG. 7 is a partial perspective view of a single subunit comprising a plurality of the blocks of FIG. 5 baled together.

Referring to the drawings, and particularly to FIG. 1, there is shown a generally rectangular block 10, constructed of wood and particularly adapted for use as factory flooring and the like. A plurality of the blocks 10 may conveniently be cut from larger pieces of lumber, such as logs, on multiple saws so that a large number of these blocks may be cut in a minimum amount of time and with relatively few operations and, consequently, the blocks can be produced at a minimum cost. It will be understood, however, that the blocks 10 may be cut or formed in any other desired manner and may, in fact, be constructed of materials other than wood if desired.

Referring particularly to FIG. 2, a plurality of the blocks 10, namely, twenty-two, are contiguously arranged, as shown, in two adjacent rows with the end grain of adjacent blocks in mutual abutment and secured together by a baling strip of flexible material 12 to form a subunit 13. It has been found that by providing two rows in each subunit rather than one or three or more, the degree of tightness of the strip 12 required to prevent disassembly of the subunits during shipment does not result in damage to the end blocks in each subunit and, furthermore, that disassembly of the subunits when the blocks are to be used may be readily accomplished without cutting the strip 12. The strip 12 may conveniently be wire, cord, metal strapping, etc. In the illustrated embodiment of the invention, baling wire is employed, with the ends thereof being attached together as indicated at 14 by twisting. Whereas, a single length of strip 12 is shown in FIG. 2, additional pieces may be employed where necessary to hold the blocks 10 together in a subunit. It has been found, however, that a single strand of baling wire suitably wrapped once around the subunit 13 and twisted together at its ends in the manner shown in FIG. 2 is sufficient to maintain the subunit 13 intact without requiring the baling wire 12 to be taut.

Referring to FIG. 3, wherein there is shown a plurality of subunits 13 stacked on a skid 16, the skid 16 includes a flat support member 18 including a plurality of boards 20 arranged in parallel relationship and secured to a set of parallel runners 22, 24 and 26. The runners thus facilitate sliding or skidding of the package of blocks along the ground or other surface, assist in maintaining the support member 18 in place, and maintain the support member 18 above five inches off the ground so as to enable handling of the package by means of the conventional fork type lift trucks (not shown).

The subunits 13 are baled to one another and to the skid 16 by means of a plurality of flexible metallic bands 28, which are wrapped over the subunits, under the boards 20, and have their ends secured together by any suitable means such, for example, as by stapling. As best shown in FIG. 3, the subunits 13 are so disposed on the pallet 16 that the vertical planes defined by the baling strips 12 are all parallel and in addition the straps 28 are perpendicular to the adjacent baling strips 12 of the subunits 13 which are disposed at the upper four corners of the overall package. There is thus provided a

package of the blocks 10 which may be readily transported with standard equipment without danger of breakage. Whereas, flexible metallic straps may conveniently be employed to secure the subunits 13 to the skid 16, the bands 28 may be constructed of other materials such, for example, as baling wire, cord, rope, and the like.

After the subunits 13 of the blocks 10 have been baled to the skid 16, the entire unit is chemically treated with a preservative as by moving the package into a suitable treating area where it may be subjected to a pressurized treatment with a liquid preservative. Because certain commonly used types of preservatives such, for example, as creosote, at first leave the blocks somewhat sticky, it is especially desirable that they need not be manually handled until they have dried. It will thus be appreciated that an important feature of the invention is that the blocks 10 are partially packaged prior to the chemical treatment thereof and need not be individually or manually handled thereafter since the blocks 10 may be facilely transported while still wet and sticky by means of conventional lift trucks which have fork-lifting portions for insertion beneath the support surface 18 of the skid 16 for the lifting and subsequent transporting of the blocks 10.

Preferably, the individual blocks are arranged so that the end grain surfaces thereof lie in vertical planes and the baling strips 12 are also disposed in vertical planes whereby the blocks in adjacent subunits are spaced apart by at least a predetermined distance by the strips 12. This space between the subunits as well as the channels which are defined by the adjacent beveled corners of the blocks provides a sufficient number of transverse passageways through the unit to insure satisfactory distribution through the unit of the preservative during the chemical treating process.

In order to protect the blocks 10 from the elements and also to maintain the package intact during transit, a flexible cover 30, conveniently formed of a treated paper material, is wrapped over the stack of blocks. As shown, the cover 30 may conveniently be attached to the bale of subunits by one or more flexible metal straps 32 and a plurality of staples 34. The cover 30 is thus securely held in place whereby the package may be stored outside in inclement weather without damage to the blocks 10 or to the package. Moreover, the individual blocks cannot creep out of the package as a result of vibration of the package during transit. Although flexible metal straps and staples may conveniently be employed in attaching the cover 30 to the package, other means, such, for example, as adhesive tape, string, cord, etc. may suitably used. However, because of the rough handling to which such packages are subjected, a metallic band appears to be the most desirable way to hold the cover 30 on the package of blocks.

It has further been found desirable to wrap the cover 30 over the stack of blocks so that the runners 22, 24 and 26 of the skid 16 are left exposed. In this way the cover 30 is not readily torn or otherwise scarred during handling and transporting of the package by means of forked lift trucks and the like.

Although the chemical treatment of the blocks 10 has been described as being done after the subunits 13 are baled to the skid 16, it will be understood that this is by way of explanation and not by way of limitation, since the treating operation may be performed after the blocks 10 have been baled into the subunits 13 prior to their being baled onto the skid 16, or it may be performed before the blocks 10 are baled into the subunits 13, or even before the blocks 10 have been cut. However, it has been found that it is most expedient to chemically treat the blocks 10 after they have been baled into the subunits 13 and secured to the skid 16.

Also, while a cover 30 has been employed to protect the package of the blocks 10 from the weather, etc., it will be understood that for certain applications a cover is

unnecessary, and in such instances it may be left off the package of the present invention. For example, where the blocks are to be used a short time after cutting, and ample, relatively dust-free space is available for the drying of the blocks **10** after the treatment thereof, it may be expedient to dispense with the cover **30**. Generally, however, the blocks are not to be used a short time after packaging, but must be shipped great distances and usually stored for long periods of time. In such cases, the use of a cover **30** is most desirable, if not altogether necessary. It will also be appreciated, as indicated above, that the cover **30** gives additional structural support to the package in addition to protecting the blocks **10** from the elements, and, as a result, the rough handling to which the package of blocks is likely to be subjected should be considered before a final decision is reached with respect to elimination of the cover **30**.

Modified forms of wooden blocks which have been found to give good access of preservative solution to the adjacent faces of the blocks as they occur in the package are illustrated in FIGS. 5 and 6. Referring specifically to FIG. 5, a block **40** having a pair of end faces or end-grained faces **41** and a plurality of side faces **42**, **43** has a plurality of beveled portions or V-shaped grooves **44** formed or embossed in the end faces **41** by means of a press or embossing rolls. The end faces **41** may be embossed after the blocks **40** have been cut or formed and before the blocks are secured together to form a subunit. As shown, the grooves **44** are arranged in a linear pattern designed to give access of preservative to the end faces **41** when the blocks **40** are secured in a subunit. The blocks **40** may also contain one or more grooves embossed in the side faces, for example, a plurality of V-shaped grooves **45** in the side faces **42** and **43** of block **40**. If desired, the end faces **41** of the block **40** may contain a design **46** to identify the block with the manufacturer thereof. The design **46** may conveniently be embossed simultaneously with the embossing of the grooves **44** in the end faces **41**.

Another modified form of block is illustrated in FIG. 6. A block **50** has a pair of end faces **51** and a plurality of side faces **52**, **52***a* and **53**, **53***a*. Each end face **51** is provided with a plurality of V-shaped grooves **54** embossed therein and two of the side faces **52** and **53** contain W-shaped designs **55** embossed or rolled therein; each W-shaped design includes a pair of V-shaped grooves **56** and **57** joined by an elevated knife edge **58** raised above the surface of the respective sides **52** and **53** by the embossing process.

A subunit of the blocks **40** is illustrated in FIG. 7. A plurality of blocks **40**, such as twenty-two, are contiguously arranged in two adjacent rows with the end grained faces **41** of adjacent blocks in mutual abutment and secured together by a baling strip of flexible material **60** to form a subunit **61**. The aligned V-shaped grooves **44** in the end faces **41** form a plurality of passages through the subunit **61** which provide access of preservative solution to the adjacent end faces of the blocks in the subunit **61** or the package and provide favorable effect on the treatment of the blocks during the treating operation.

Although the many advantages of the present invention will be apparent to those skilled in the art, some of the more important ones will become apparent from a consideration of the manner in which the package is shipped and used in the laying of a floor. After the package has been completed in the manner described above, it and a number of similar packages will be placed in boxcars for shipment to lumber yards or to their points of final destination. These packages are, of course, ordinarily handled by conventional lift trucks and may be stacked one upon the other in tiers in the freight cars. Obviously, the use of mechanized transportation equipment such as fork lift trucks greatly reduces the cost of loading the packages in the boxcars as well as unloading the packages when the cars reach their final destination. When the packages

of blocks have been transported to their place of destination, inasmuch as the relative cost of the blocks as compared to other equipment and materials present at that location is usually very low, the blocks are frequently stored in the open but because of the cover material thereon, the blocks are fully protected from the elements. Moreover, since the flat portion of the skid **16**, as shown in FIGS. 3 and 4, comprises a plurality of spaced apart boards **20**, and the spaces between the boards **20** are not covered by the cover **30**, the blocks in the completed package are vented to the atmosphere so that any moisture which may get into the unit is evaporated when the humidity of the atmosphere decreases.

In using the blocks in the laying of a floor, the packages are transported by fork lift trucks to the laying area and the outer bales **28** are open and the individual subunits are then placed on hand trucks and distributed throughout the laying area. Because the exact number of blocks and subunits are known, rapid and accurate distribution of the blocks may be effected, thereby reducing the cost of laying the floor. Moreover, because the blocks are handled in groups, the speed of handling is increased and, more importantly, they are not damaged as is the case when the blocks must be handled loosely and transported in wheelbarrows. Because of the manner in which the blocks are arranged in subunits, i.e., a single baling strip being used to hold them in place, the baling strip **12** need not be broken in order to remove the blocks from the subunits since it has been found that by merely grasping the baling strip on opposite sides thereof the blocks can be readily shaken loose by a single snap of the subunit. Because the blocks may be equally distributed in a laying area, the speed with which they can be assembled into a floor is, of course, increased, thus lowering the overall cost of the floor. Therefore, it may be seen that the package of the present invention provides a new method and means of handling the type of blocks which are used for factory flooring and the like.

While a particular embodiment of the invention has been shown, it will be understood, of course, that the invention is not limited thereto, since many modifications may be made, for example, blocks containing both grooves and beveled edges may be employed to provide the desired penetration of the preservative into the subunit or package. It is, therefore, contemplated by the appended claims to cover any such modifications as fall within the true spirit and scope of the invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A package of rectangular wooden blocks of the type used for factory flooring and the like, said package comprising a support skid, a plurality of rectangular subunits of said blocks arranged in a rectangular solid on said skid, each of said subunits comprising a plurality of said blocks disposed end grain to end grain and baled together to provide a plurality of relatively small passages at the interfaces of adjacent blocks, said blocks having beveled portions interconnecting surfaces other than end grain surfaces to provide when the blocks are assembled a plurality of continuous passageways extending between opposite sides of the rectangular solid, and means for baling said plurality of subunits to said skid.

2. A package of rectangular wooden blocks as set forth in claim 1 above wherein said beveled portions comprise bevels on interconnecting surfaces other than the end grain surfaces.

3. A package of rectangular wooden blocks as set forth in claim 1 above wherein said beveled portions comprise grooves linearly arranged on surfaces other than the end grain surfaces.

4. A package of untreated rectangular wooden blocks of the type used for factory flooring and the like, said package comprising a support skid, a plurality of rectangular subunits of said blocks arranged in a rectangular solid on said skid, each of said subunits comprising a

plurality of said blocks disposed end grain to end grain and baled together to provide a plurality of small passages at the interfaces of adjacent blocks, said blocks having beveled portions interconnecting surfaces other than end grain surfaces to provide when the blocks are assembled a plurality of continuous passageways extending between opposite sides of the rectangular solid, and means for baling said plurality of subunits to said skid.

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