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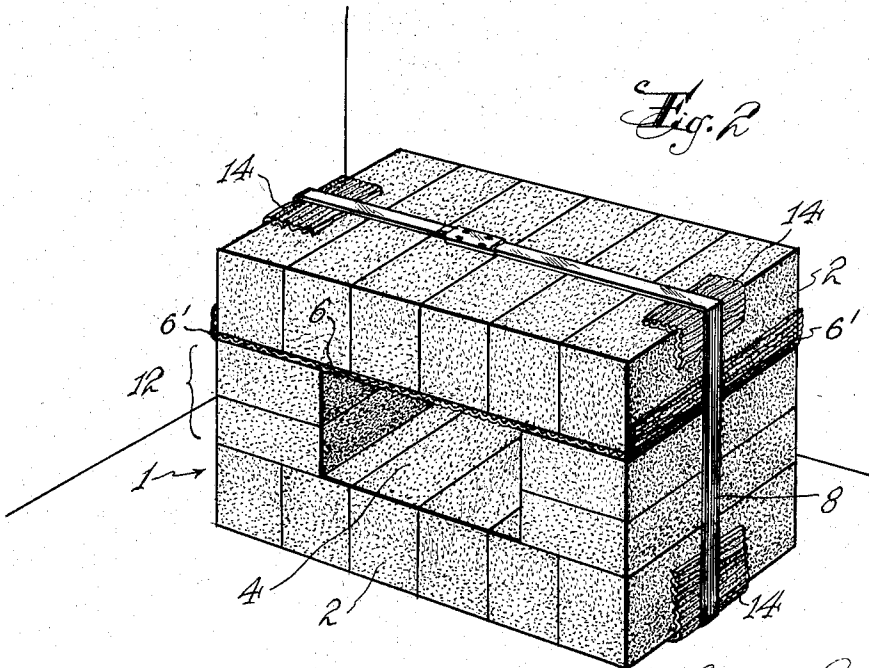
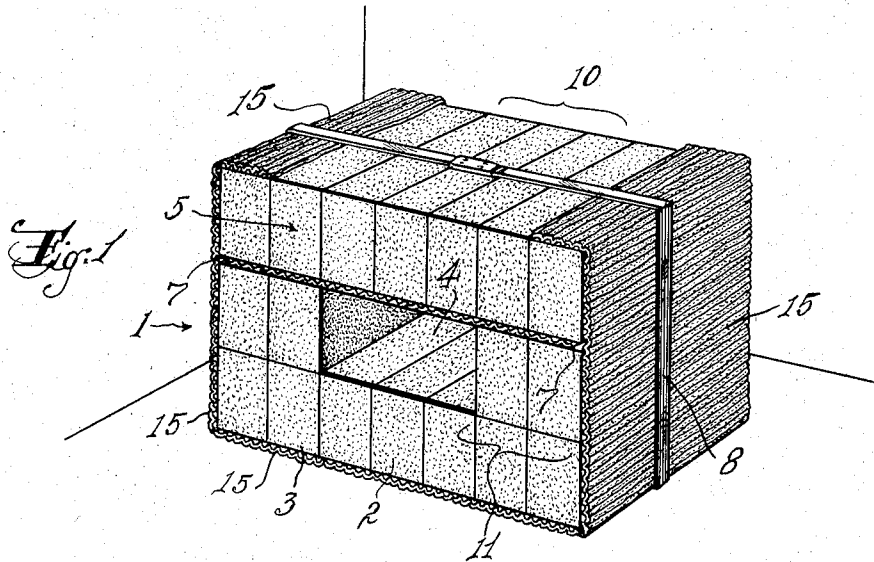
E. F. BAUMER

2,869,721

SINGLE-VOID UNITIZED TRANSPORTABLE PACKAGE

Filed Oct. 18, 1957

2 Sheets-Sheet 1



Inventor:  
Earl F. Baumer

By: *Peter J. Kofner*  
Attorney

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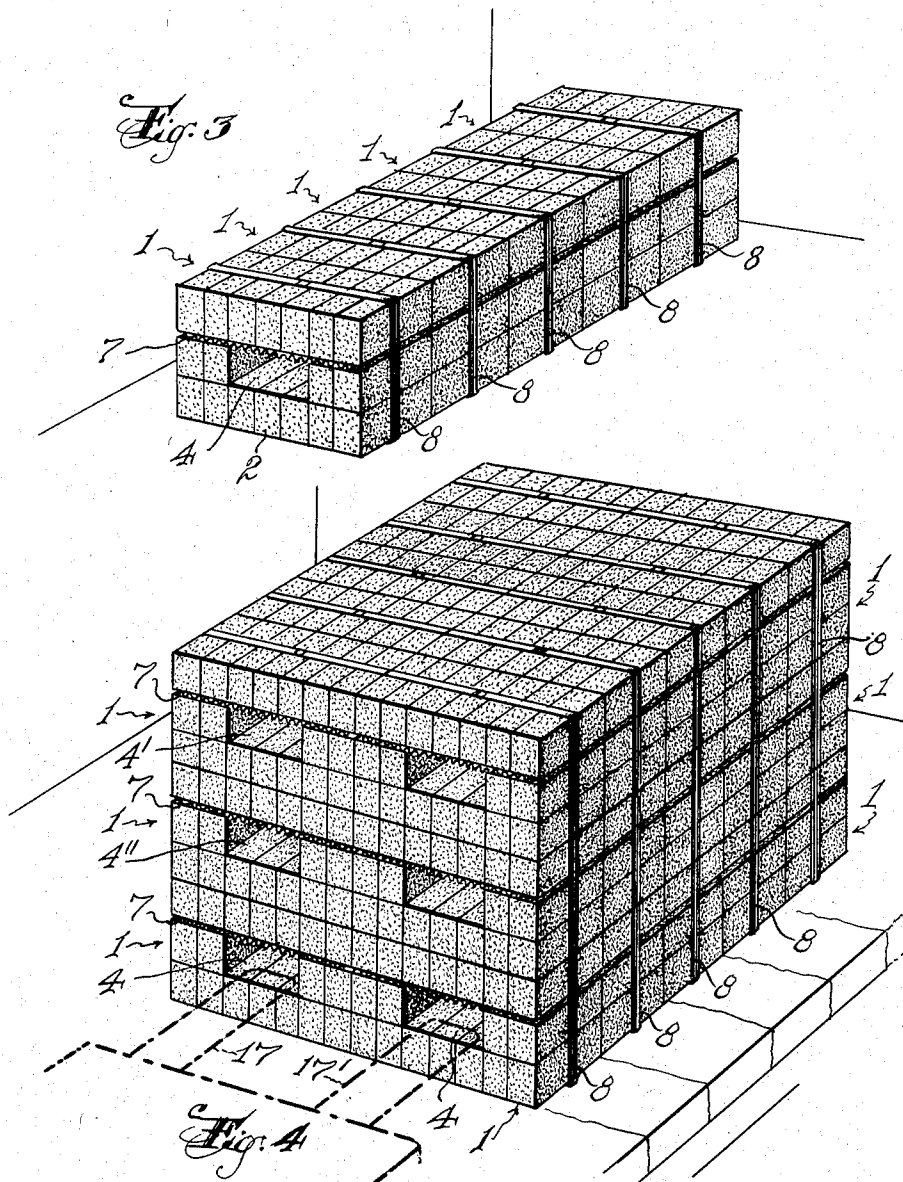
E. F. BAUMER

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SINGLE-VOID UNITIZED TRANSPORTABLE PACKAGE

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Inventor:  
Earl F. Baumer  
By: Peter J. Saylor  
Attorney

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## SINGLE-VOID UNITIZED TRANSPORTABLE PACKAGE

Earl F. Baumer, Parlin, N. J.

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2 Claims. (Cl. 206—65)

This invention deals with an all-purpose, light, unitized package of brick. More specifically, it relates to a banded stack of brick arranged vertically in three rows with a single wide opening or void in the second row, which layer has two brick disposed on each side of the void, all of the brick being stacked with their long dimension disposed in the direction of the axis of the opening.

In the past, numerous attempts have been made to produce banded stacks of brick which could be handled conveniently and efficiently. These attempts included the stacking of rows of bricks on a wooden pallet and the banding of the stack to the pallet for shipment. More recent attempts involved elimination of the expensive pallet and the forming of two openings near the bottom of the stack which has a number of layers of brick stacked above the openings. Such stacks, besides being clumsy, weighty and unwieldy, were not adaptable to be handled by conventional fork-lift trucks and required special hand-operated conveyances. The latter units have been made with larger openings, but they have been bulky and heavy to handle. Also, in the handling of sharp arris brick, considerable damage has been effected by chipping and cracking of brick edges due to use of conventional tongs which are required to transport the brick to the work. And these results appear in spite of what is considered to be proper supervision.

For some time, there existed a pressure against manual handling of loads in excess of 90-100 lbs. Truck drivers have been refusing to unload brick in loose form by hand, and the tying up of trucks due to delays in unloading have risen sharply. As a result, brick companies for some years have been seeking some sort of a not-too-expensive means to remedy the situation. Furthermore, the forgotten man, who is the man on the brick-laying job, has been voicing his protests with respect to the present situation on brick delivery. He has to get the brick from the pile to the elevator and then to the mason as best he can. He may have a mechanical lift operating on reinforced floors, but this is very rare. Usually, he has some form of hand truck, dolly or wheelbarrow to take the pile of loose brick to the scaffold. For some time, he has been in need of modern means for effecting the operation properly, efficiently, with least damage, and with less bodily strain.

It is very important that a brick package be made up to give full payloads on all transportation facilities. Also, when the package arrives at its delivery point, it should be in condition to be unloaded either by hand, hand truck, dolly, mechanized lift, crane or conveyor, depending on the facilities available at the location.

The present invention eliminates all of these deficiencies and handicaps and makes possible a simple unit of 18 brick which can be readily assembled by hand or by conventional equipment, such as fork-lift trucks, into five-unit packages of 90 brick, which then may be conveniently stacked and transported into units contain-

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ing 180, 360, 540, and up to 1080 and more brick, this being done without use of any pallets.

One feature of the present invention is the formation of a compact light-weight package weighing 72-90 lbs., depending upon the size of the brick, which may be handled by hand easily and which also can be arranged easily and conveniently in rows and stacked in tiers in a manner making it possible to employ any type of conveying means available on the job. Only a single wide opening is provided in each banded stack in the second row thereof for pickup by a fork-lift truck or similar conveyance. Although the conventional fork-lift truck has two or three tines to be used in the pickup operation, the unique nature of the unitized stack of the present invention is that two or more tiers of such banded units, when disposed side by side, can be picked up simultaneously so that each tier aids in supporting the other laterally without possibility of any tier falling off the fork tines. Actually, one tier may be moved by one tine of a fork without any danger whatever.

Another feature of the present invention involves elimination of the costly pallet which not only consumes shipping space and weight but also generally has a very short life in brick usage. Other features and advantages of the present invention will become evident from the description which follows.

The invention may be more readily understood by reference to the accompanying drawing in which Figure 1 represents a perspective view of a preferred single void brick unit or stack, hereinafter referred to as an S. V. B. unit. Figure 2 illustrates a similar view of another embodiment adaptable for larger fork tines wherein the two brick on either side of the void are laid in their flat sides. A similar view of a single row of 5 S. V. B. units, which is basic unit for pickup by a fork-lift truck, is illustrated in Figure 3, while Figure 4 shows a similar view of two tiers of the basic unit of Figure 3 arranged for a heavier load on a fork-lift truck. Similar numerals refer to similar parts in the various figures.

Referring again to the drawings, and particularly to Figure 1, numeral 1 represents generally an S. V. B. unit of the present invention, comprising a unitized stack of brick in preferred embodiment, made of individual brick 2 which are stacked in three rows as a running stack, the brick lying on their stretcher sides 3, i. e., on their 2 1/4" sides. Standard brick generally run 8" x 2 1/4" x 2 3/4". It is essential that the void or opening 4 be at least about 6 3/4" in width so that even the largest tine of a conventional fork-lift truck can enter without damage to the brick. In the present invention, the bottom row of unit 1 must contain 7 brick lying on their stretcher sides. The second row containing the centrally-located void 4 has two brick 11 disposed on each side of the void. When regular fork tines are used, the two side brick 11 are laid on their stretcher sides as in Figure 1. However, in rare cases, there are a few fork-lift trucks which have exceptionally heavy tines. When such forks are to be used, it is desirable to lay side brick 11 on their flat sides, as in Figure 2, thereby providing more vertical space for the void.

The S. V. B. unit is readily handled by a single worker, and it consists of an upper layer 5 of seven brick lying on their stretcher sides, under which layer is placed a thin sheet of supporting material 6, such as a piece of corrugated cardboard, plywood, or the like, extending at least to near edges 7 of the unit. This sheet serves mainly as a support for the upper layer 5 of the brick until the unit is banded vertically by band 8 which circumscribes the closed periphery of the S. V. B. unit.

In order to provide adequate space for entry of the

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fork-lift truck tine or prong 17 or 17' (Fig. 4) void 4 is provided with a width of about three thicknesses of brick 10 (Fig. 1). It has been found necessary that opening 4 be in the second layer of brick (counting from the bottom). Also, it is necessary that both sides of opening 4 be bounded by two brick 11, preferably lying on their stretcher sides as in Figure 1, although, as stated previously, they may lie on their face sides 12 as in Figure 2.

Before strap 8 is applied to the stack, it is desirable to insert pieces of cardboard 14 (Fig. 2) under the strap to prevent any local breakage by the strap when it is tensioned and locked. However, to eliminate manual effort as much as possible and also to give better protection to the brick, it is preferable to employ a large length of cardboard 15 which circumscribes the entire bottom (Fig. 1), as well as the sides, and also overlap a portion of the top so that adequate protection is provided the brick against impact damage. Such latter protection is particularly desirable when the S. V. B. units are made continuously on a conveyor belt or rollers, in which case the sheet 15 serves as a protection for the rollers against the abrasive action of the brick. Supporting sheet 6 which supports layer 10 of brick also may have end portions 6' overlapping the sides of the S. V. B. unit, as in Figure 2, prior to banding.

An S. V. B. unit made of 18 standard size brick, as in Figure 1, will weigh about 72 lbs., which is easily moved about by a single worker. A similar unit made of 18 heavier standard size brick (8" x 2 5/8" x 2 3/4") will weigh about 81 lbs., while an S. V. B. unit of five pound Jumbo size brick (8" x 2 5/8" x 3 3/4") would weigh about 90 lbs., all of which would still be moved about by a single worker.

It has been found convenient to produce these S. V. B. units on an assembly line basis wherein the brick are assembled on a roller conveyor, then banded by an automatic banding machine and arranged in a single tandem layer of five units as in Figure 3. Such layer then may be picked up by a conventional fork-lift truck whose tine 8 is inserted in opening 4 of the entire tandem grouping, and then placed on the floor for tiering.

An important advantage of the present S. V. B. units is their versatility in being readily arranged in vertical tiers for moving. For example, if the stacked units are to be moved by two-tined forks, they may be arranged in two adjacently-disposed vertical tiers, as in Figure 4, to a height determined only by the capacity of the truck or the demand of the moment. The forks 17 and 17' of the truck are inserted in the lower voids 4 of the stacks and the entire mass is moved to the desired loca-

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tion. If one or more S. V. B. units are required, the tines 17—17' are inserted in upper openings 4' or 4'', as desired, and the required number of S. V. B. units are removed. It is thus apparent that a load of one S. V. B. unit or a full payload of any number of units may be transported with ease and efficiency. It makes it possible for one man with a mechanized lift to load conveyances after hours in the afternoon, during the night, or on off-days when a plant is normally closed. A pile of S. V. B. unit packages laying on the job will permit a man to use any mechanical means now available or, as a last resort, to lift the brick in units of 18 to his wheelbarrow, which is the normal conveyance on most jobs. Furthermore, the S. V. B. unit is light enough to be passed out on the scaffold on which the mason is working.

From the foregoing, it is apparent that the S. V. B. unit packages of the present invention eliminate pallets, limit handloading to one operation, eliminate the use of tongs at the delivery points, make large packages, in multiples of 18, easily transportable by existing mechanized conveyances, promote ideal warehousing, enable full payloads on all conveyances, eliminate extra handling and concomitant chipping, and thus promote quality control.

I claim:

1. A light-weight unitized transportable package of brick comprising a vertically-disposed stack in running relation consisting of a lower layer of seven brick, a second layer of four brick disposed in a manner as to define a centrally-located void while the outer brick thereof are in flush relation with the outer brick of said first layer, a sheet of supporting material disposed over said void and over at least a portion of the brick in said second layer and serving as a support for a third layer, a third layer of seven brick disposed over said second layer and in outside edge flush relation with said other layers, and a band circumscribing the closed periphery of said three-layer package and serving to hold all of said brick together.

2. A light-weight unitized transportable package of brick according to claim 1 in which the brick in the second layer are laid face down so as to form a larger void capable of accommodating a deeper tine.

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