

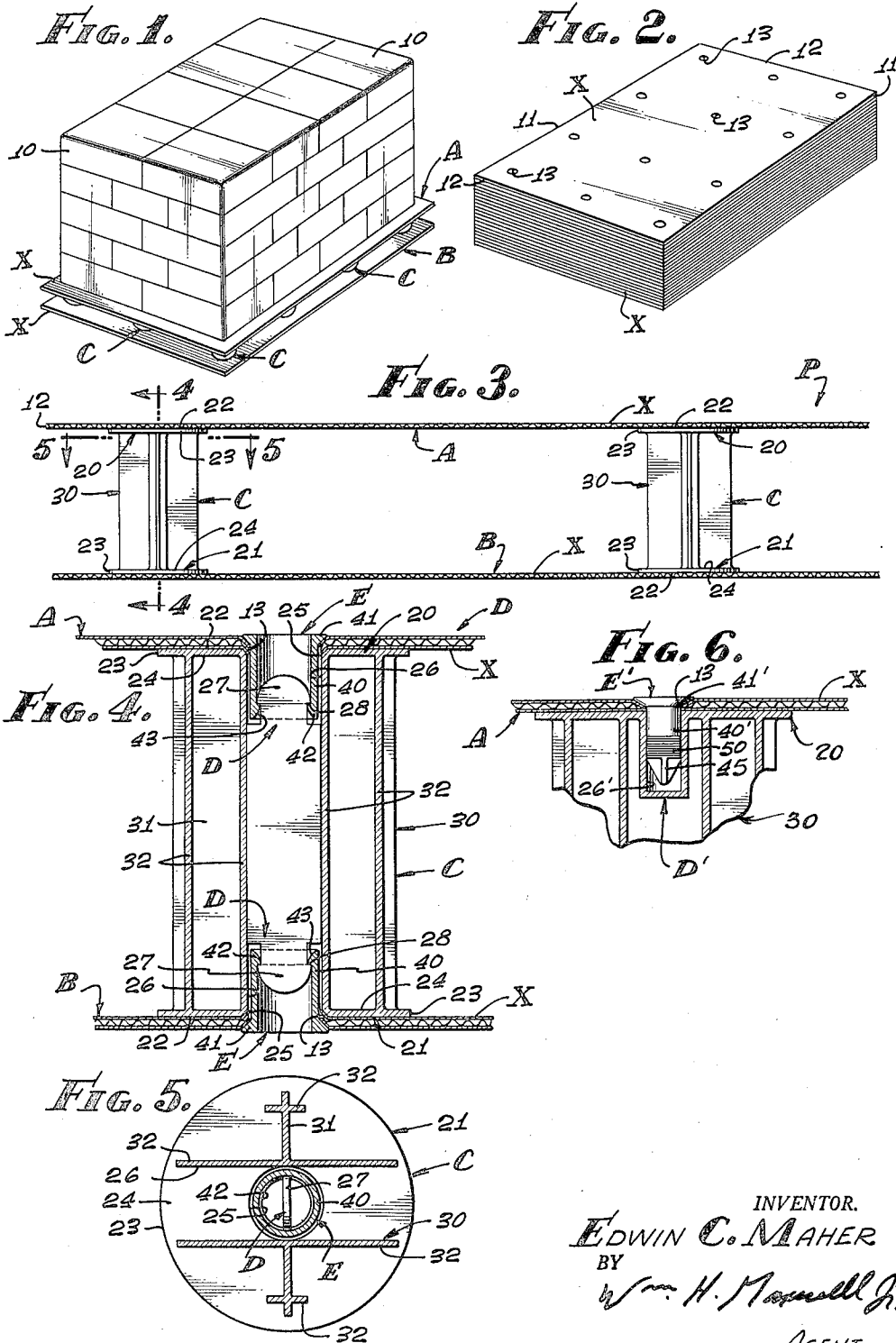
Dec. 22, 1959

E. C. MAHER

2,918,241

FABRICATED PALLET AND SPACER THEREFOR

Filed Nov. 22, 1954



INVENTOR.
EDWIN C. MAHER
 BY *Wm. H. Maxwell Jr.*
 AGENT.

1

2,918,241

FABRICATED PALLET AND SPACER THEREFOR

Edwin C. Maher, San Marino, Calif.

Application November 22, 1954, Serial No. 470,234

3 Claims. (Cl. 248—120)

This invention is concerned with a fabricated pallet and spacer therefor, and is particularly concerned with a construction including a spacer for relating two like pallet members, it being a general object of this invention to provide a simple, inexpensive and practical pallet construction that is durable and expendable.

Pallets, or the like, are commonly employed in the handling of goods or materials of manufacture so that a large quantity of material or a large number of boxes of goods or materials can be handled at a single time by a handling mechanism, such as a fork lift truck. Such pallets are usually flat, rectangular elements made up of wood or other like material, and have flat tops with runners across the bottoms. The tops are usually imperforate and are adapted to support the materials or goods and are spaced above the floor or ground level upon which the pallet rests by the runners. Thus, the goods are spaced above the floor and the forks of a lifting truck are easily applied beneath the pallet in order to engage and lift the pallet and the load of goods or materials carried thereby.

It is an object of this invention to provide a fabricated pallet which is light in weight and yet durable and easily handled.

Another object of this invention is to provide a pallet of the character referred to having spaced upper and lower elements, which pallet has a simple and inexpensive, practical spacer which is easily and quickly applied to the upper and lower elements of the pallet.

It is still another object of this invention to provide a pallet of the character referred to which is formed of upper and lower elements and a plurality of spacers, which elements and spacers are easily and quickly assembled to form a completed pallet. With the present invention the elements which are provided to form the finished pallet are easily stored in a minimum amount of space before they are required for use.

A further object of the invention is to provide an assembly of the character referred to which is easily and quickly fastened or secured together, so that it is permanent in nature and will not become disengaged, one part from the other.

The various objects and features of my invention will be fully understood from the following detailed description of typical preferred forms and applications of the invention, throughout which description reference is made to the accompanying drawings, in which:

Fig. 1 is a perspective view of the pallet of the present invention as it is used and showing a quantity of goods applied thereto and supported thereby. Fig. 2 is a perspective view of the sheet-like elements which I have provided in the pallet construction. Fig. 3 is an elevational view of a portion of the structure shown in Fig. 1. Fig. 4 is an enlarged detailed sectional view of a portion of the structure taken as indicated by line 4—4 in Fig. 3. Fig. 5 is an enlarged plan sectional view taken as indicated by line 5—5 in Fig. 3, and Fig. 6 is an enlarged detailed sectional view similar to a portion of Fig. 4 showing a modified form of construction.

The pallet P that I have provided, instead of being a unit composed of solid boards, or the like, is characterized by upper and lower panels A and B, respectively, and by spacers C. The panel A is adapted to receive and support goods or materials, for example, boxes 10, while the panel B is adapted to rest upon a support such as the ground level or floor.

2

A plurality of spacers C is provided to space the panels A and B so that the goods are elevated and so that the pallet P is adapted to receive lifting forks such as are commonly employed to lift and move pallets of the type under consideration. It will be readily understood how the lifting forks may be inserted into the pallet that I have provided between the panels A and B.

As illustrated in Fig. 2 of the drawings, the panels A and B are alike and are formed of elements X which are prepared to receive and locate the spacers C, above referred to. In practice, a stock of like elements X may be readily stored in a stack, as clearly shown in Fig. 2 of the drawings.

The elements X may be varied as circumstances require and each is preferably a simple rectangular piece of sheet material such as corrugated cardboard, or the like, and has parallel sides 11 and parallel sides 12. When constructing a pallet P of elements X, one element X is used for the panel A and one element X is used for the panel B. If so desired one or more elements X may be employed to form each panel. The number and location of the spacers C will vary widely as circumstances require. However, the panels A and B will be formed alike and are provided with a plurality of spacer locating holes 13. In practice, the locating holes 13 are uniformly spaced and are cut into the elements X in a symmetrical pattern or in a pattern to suit the particular load of the goods to be handled by the pallet P.

In accordance with the invention, only a few spacers C will be required when the load of goods is heavy. In each instance, the number of and the spacing of the spacers C will be determined by the type and weight of the goods or materials being handled by the pallet P.

The spacers C are simple, light-weight and inexpensive, but durable parts that provide a column or support between the panels A and B and are arranged between the panels, A and B, in alignment with the holes 13, above described. It is preferred that each spacer C be molded of a so-called plastic material, say for example, polystyrene, or the like. It is to be understood, however, that any suitable type of material can be employed in forming the spacers C.

Each spacer C is characterized by relatively thin web-like walls of material and involves like heads 20 and 21, a body 30 extending between the heads 20 and 21, and fastener receiving means D adapted to receive fasteners E provided to secure the panels A and B to the spacer C. The heads 20 and 21 are alike and each has a flat outer face 22 in a plane normal to the longitudinal axis of the spacer C. The outer faces 22 engage and cooperate with the faces of the panels X and may be secured thereto as by means of a suitable adhesive if so desired. As shown in the drawings, the heads 20 and 21 may be round in plan configuration having outer peripheries 23. In the preferred form of the invention the heads 20 and 21 are flat disc-shaped elements having opposed inner faces 24.

The body 30 of the spacer C is a column-like element that extends between the opposed faces 24 of the heads 20 and 21 and may vary widely in form. That is, the body 30 may be of solid material, or may be of cellular material, and may be either tubular walled or solid in cross section. As illustrated, in Fig. 5 of the drawings, the body 30 may include a plurality of web-like elements and preferably includes a central longitudinally disposed plate 31 in a plane coincidental with the axis of the spacer C, and a plurality of stiffeners 32 in planes normal to the plane of the plate 31. Both the plate 31 and stiffeners 32 are provided to take compressive stresses and the plate 31 and stiffeners 32 act to reinforce or stabilize each other against failure such as buckling. As clearly shown in the drawings, the heads 20 and 21,

the plate 31 and stiffeners 32 are integrally formed of a continuous body of molded material.

A fastener receiving means D is provided at each head 20 and 21 and each means D involves an opening 25 in the head and a recess 26 in the plate 31 adjacent each opening 25. The opening 25 is preferably circular and is defined by a chamfered wall that is concentric with the axis of the spacer C while the recess 26 extends into the plate 31 longitudinally thereof. The opening 25 and recess 26 are adapted to receive a fastener E and in accordance with the invention each means D involves, further, a central projection 27 having inwardly faced radially projecting shoulders 28. The projection 27 extends outwardly and longitudinally from the bottom of the recess 26 and the shoulders 28 are at the sides of the projection 27 and are provided to engage and retain a fastener as hereinafter described.

The fastener E is adapted to be inserted through a hole 13 and to be received in the means D, above referred to, to be engaged by the shoulder 28, and involves a simple, tubular part 40 having a flared top 41 and an inwardly turned bottom 42. The flared top 41 has a downwardly and inwardly faced portion engageable with the outer surface of an element X so that the portion of the element X surrounding the hole 13 is compressed and turned, or crimped, and is drawn into tight engagement with the head of the spacer C. The turned bottom 42 has an inclined portion 43 slidably engageable with the projection 27 and when the fastener E is inserted into the recess 26 the inwardly turned bottom 42 slidably engages with the projection 27 whereupon the tubular body of the fastener E is deflected so that the inwardly turned bottom 42 engages and locks over the projection 27 to engage the shoulder 28 thereby permanently securing the fastener in the recess so that the panel A or B, as the case may be, is held tightly in engagement with the head 20 or 21 by the flared top 41 of the fastener E.

In the form of the invention illustrated in Fig. 6 of the drawings, the fastener E' and the fastener receiving means D' are of modified construction. In this form of the invention the fastener receiving means D' is characterized by a recess 26' having continuous side walls forming a cylindrical bore or opening. In this form of the invention the fastener E' involves a cylindrical body 40', a flared top 41' and a fluted point 45. The top 41' is substantially the same as that above described in connection with the first form of the invention. However, the body 40' is modified in that it is provided with a series of ribs or serrations 50 which press into the cylindrical wall of the recess 26' and act to grip the wall of the recess 26'. Also in this form of the invention the point 45 is fluted. By providing tapered flutes terminating at a point, as shown in Figure 6 of the drawings, the fastener E' may be manipulated to pierce the element X in such a manner that the layers of material forming the element X are cut and spread apart evenly. Thus, the fastener E' may be pressed through the element X without deviating from the position where it is initially placed.

From the foregoing it will be apparent that I have provided a simple and inexpensive fabricated pallet construction of the character referred to and that I have provided an extremely simple spacing device and means for reliably fastening the panels to the spacer. It is to be understood, however, that the spacer is not merely limited to use in forming a pallet but is also useful in packaging, and the like, to provide spacing means between the object being packed and the outer side walls of the package or between several objects being packed. Therefore, it is contemplated that spacing units be formed very much like the pallets above referred to, which spacing units can be employed in the packaging of articles of manufacture, such as appliances and the like.

Having described only typical preferred forms and applications of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any variations or modifications that may appear to those skilled in the art and fall within the scope of the following claims.

Having described my invention, I claim:

1. A spacer for joining a pair of pallet panels, including, an elongate body having a central longitudinally disposed plate on a longitudinal axis and two like heads, there being one head at each end of the body and in a plane normal to said axis, each head having a flat outer face adapted to engage a panel, said plate extending between the heads and supporting one head from the other, said plate being in a plane coincidental with said longitudinal axis and forming a column-like support, and fastener receiving means in the body at each head and adapted to receive a fastener for securing a panel to the head and including, an opening formed in and extending through the head, a recess formed in the plate and underlying the opening in the head, and a projection extending from the plate and into the recess to engage with a fastener.

2. A spacer for joining a pair of pallet panels, including, an elongate body having a central longitudinally disposed plate on a longitudinal axis and two like heads, there being one head at each end of the body and in a plane normal to said axis, each head having a flat outer face adapted to engage a panel, said plate extending between the heads and supporting one head from the other, a fastener engageable with the body at each head and having a shank with a shoulder and having a top engageable with a panel, said plate being in a plane coincidental with said longitudinal axis and forming a column-like support, and fastener receiving means in the body at each head and adapted to receive a fastener for securing a panel to the head and including, an opening formed in and extending through the head, a recess formed in the plate and underlying the opening in the head, and a fastener engaging projection extending from the plate and into the recess to lock with the shoulder on the fastener.

3. A pallet of the character described including, flat upper and lower panels of sheet material, and a plurality of spacers joining the panels and each including, an elongate body having a central longitudinally disposed plate on a longitudinal axis and two like heads, there being one head at each end of the body and in a plane normal to said axis, each head having a flat outer face engaged with a panel, said plate extending between the heads and supporting one head from the other, a fastener engageable with the body at each head and having a shank with a shoulder and having a top engageable with a panel, said plate being in a plane coincidental with said longitudinal axis and forming a column-like support, and fastener receiving means in the body at each head and adapted to receive a fastener for securing a panel to the head and including, an opening formed in and extending through the head, a recess formed in the plate and underlying the opening in the head, and a fastener engaging projection extending from the plate and into the recess to lock with the shoulder on the fastener.

References Cited in the file of this patent

UNITED STATES PATENTS

1,266,547	Baxter	May 21, 1918
2,267,126	Moretti	Dec. 23, 1941
2,673,700	Eberhardt	Mar. 30, 1954
2,691,499	Watts	Oct. 12, 1954
2,705,120	Owen	Mar. 29, 1955
2,783,960	Herz	Mar. 5, 1957

FOREIGN PATENTS

135,671	Switzerland	Dec. 2, 1929
---------	-------------	--------------