Aug. 15, 1933. W. P. SULLIVAN 1,922,560

HOLDER FOR BRICKS OR THE LIKE

Filed Aug. 29, 1930

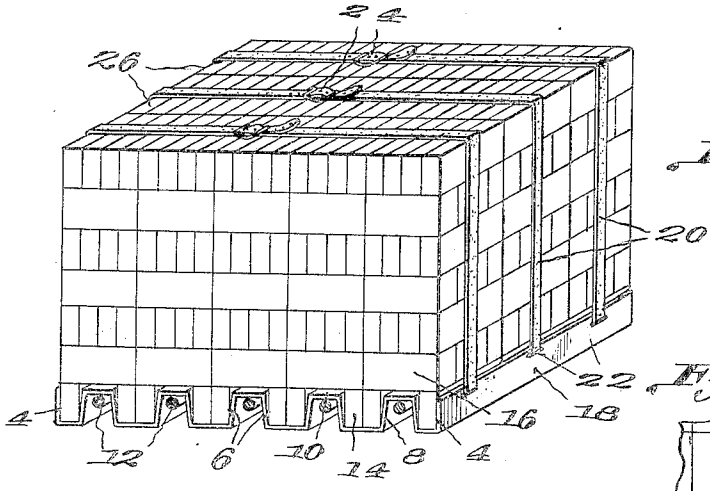

Fig. 1.

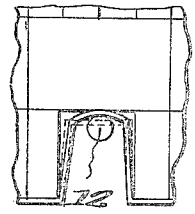

Fig. 5.

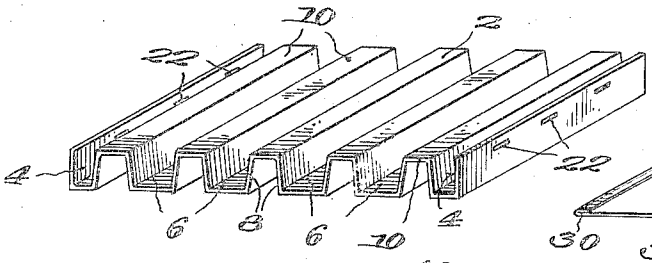

Fig. 2.

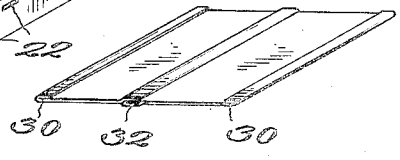

Fig. 3.

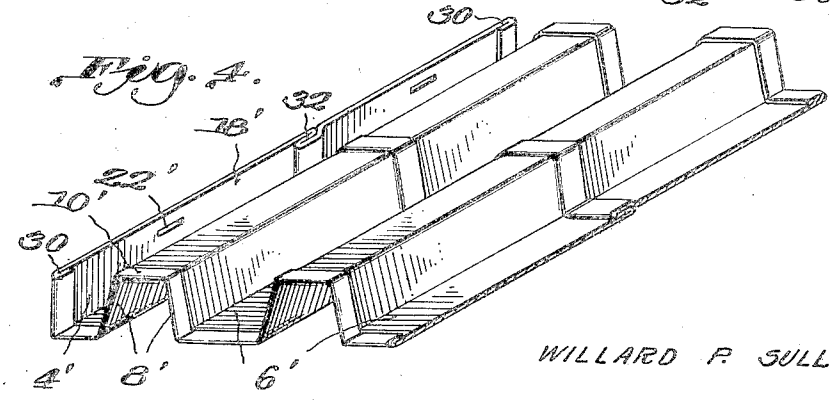

Fig. 4.

Inventor

WILLARD P. SULLIVAN,

By

Attorney

Patented Aug. 15, 1933

1,922,560

UNITED STATES PATENT OFFICE

1,922,560

HOLDER FOR BRICKS OR THE LIKE

Willard P. Sullivan, Suffolk, Va.

Application August 29, 1930. Serial No. 478,713

10 Claims. (Cl. 206—46)

This invention relates to a brick holder to replace the usual hod and to the package of bricks formed on such a holder.

The primary object of the invention is to provide a holder upon which a greater number of bricks or of similar objects may be carried at once, but which is so designed that the bricks are held in place to a considerable extent by their own weight. The chief feature of the invention resides in the provision of a channeled or corrugated holder, the channels of which may hold one or more objects side by side, the depth of the channels being such that a layer laid on the objects in the channels will not contact with the bridges between the channels.

A second object is to produce a new type of holder which will permit the moving of a great number of bricks at one time, yet which may be used in the same way as a hod for lifting bricks to the upper floors of a building or for storing the bricks. A further object is to provide a brick holder formed of sheet metal and therefore of light weight, yet so designed that a great number of bricks may be carried thereby without damage to the holder. Another object is the production of a corrugated tray which may be set on the ground or on the floor, in which the bricks may be so arranged that the weight of the pile of bricks rests only on those portions of the corrugations which lie on the floor, thus avoiding any strain on the tray.

Still another object is the provision of a corrugated tray so arranged and formed of such material that upon the extension of lifting rods or the like through the corrugations, the upper portions of the corrugations will yield to such an extent that the weight of the bricks will be carried by these rods and will be exerted only on that portion of the corrugations which is directly supported by the lifting rods.

The package of bricks formed on such a holder, with the holder itself, is also intended to be a part of my invention, since the bricks are stacked on the holder and are kept in place thereon in a novel manner which is adapted to produce a package which is steadier, easier to form, and in which the bricks are less likely to be damaged than in those used heretofore.

The holder consists broadly in a sheet metal plate having channel shaped corrugations, the width of each channel being slightly more than the thickness of two bricks, except for the outer channels which have each a width equal to the thickness of one brick. The space between the centers of adjoining channels is equal to the length of a brick, and the depth of the channels is slightly less than the width of a brick. The sheet material is moderately resilient, and straps or other means may be secured thereto for fixing the bricks on the holder. The principle of the invention is that, as will be explained hereafter, the weight of the bricks in the package will rest on the bricks in the channels when the device is resting on the ground, but, on account of the resilience of the metal, a rod passed through the spaces between the channels will deform the channels until the weight of the pile is supported by the rods and the bricks immediately thereabove, thus taking the weight of the pile off the corrugations during lifting operations.

The invention, while described herein as applied to bricks, may also be used for the packing and moving of hollow tiles, ceramic ware, wood blocks, stones, timbers, glass or metal ingots, or of any objects capable of being piled in superimposed layers. The dimensions of the holder should, of course, be varied to suit the size of the object to be packed. Also, while the description applies more particularly to channels of widths equal to twice the thickness of a brick or other object, it may also be applied to channels of twice the thickness of the object and of a depth slightly less than the thickness of the object. The chief feature of the invention is the provision of channels of a width equal to an even multiple of one dimension of the object to be packed and of a depth slightly greater than another dimension thereof, space between centers of adjoining channels being preferably equal to another dimension of the object.

Other objects and advantages of the invention will appear more clearly from the following description when taken in conjunction with the accompanying drawing which forms a part thereof.

In the drawing:

Fig. 1 is a perspective view of a holder with a pile of bricks arranged thereon.

Fig. 2 is a perspective view of the holder.

Fig. 3 is a detail view of a modified form of sheet for use in making the holder.

Fig. 4 is a perspective view of a holder made from the sheet shown in Fig. 3.

Fig. 5 is a detail view of one of the channels during a lifting operation.

In the drawing, 2 indicates the holder which is formed of a single piece of sheet metal. The holder may be of any desired size although preferably it is not too large for convenient handling. In this sheet are formed, at either end, channels 4,

each of a width equal to the thickness of one brick; for instance, in a 6"x4"x2" brick, these channels will be 2" wide or slightly more, so that a single brick may be set up on edge in the channel. The remainder of the sheet is formed into channels 6 of a width equal to the thickness of two bricks, for instance, 4", so that two bricks may be set up on edge and side by side. The depth of each channel, that is, the height of one of the sides 8, is slightly less than the width of a brick, say 3⅞". The distance between the centers of two adjoining channels is equal to the length of a brick, say 6". The material of the holder is so resilient that, when sufficient pressure is applied, the bridges 10 between the channels will be deformed to such an extent that the center of the bridge will be raised above the bottom of the channel to a distance as great as or slightly greater than the width of a brick, the amount of this deformation being, in the example given, ⅛" to $\frac{3}{16}$". This deformation is shown more clearly in Fig. 5, where the solid line shows the shape of the bridges and channels under pressure while the broken line shows the normal condition without pressure. In this figure, the rod 12 represents a lifting member which is passed beneath the holder for moving it from place to place.

In forming a package of bricks, as shown in Fig. 1, bricks 14 are first laid on edge in the channels and longitudinally thereof to fill the channels, the length of the channels being preferably an even multiple of the length of a single brick. On top of these bricks is placed a layer 16, the bricks of this layer being also set on edge but having their longer axes at right angles to the axes of the bricks in the channels and the ends of the adjoining bricks of this second layer overlying the centers of the channels 6. The end channels, which hold only single bricks, are so spaced from the adjoining two-brick channels that the ends of the outer bricks of this layer are flush with the outer walls of the outer channels, that is, the edges of the holder. A second layer is then placed on the first layer with the bricks parallel to those in the channels but covering the whole surface of the first layer. A third layer like the first is then put on, and the bricks are laid on in the two different types of layers alternately until a package of the desired size is obtained.

To either end wall 18 of the holder, straps 20 are secured, as at 22. These straps carry buckles 24 so that they may be placed around the pile of bricks as shown to hold it securely on the tray. Preferably, the last layer of bricks is of the same type as the second layer, that is, the number of layers exclusive of the bricks in the channels, is even, and a strap is provided for each row 26 of bricks in the top layer. The above construction provides a secure package, the bricks in the intermediate layers being held in place by their frictional contact with the layers above and below.

In lifting such a package, rods 12 are inserted through the channels whereupon the resilience of the material permits deformation sufficient to allow the upper faces of bridges 10 to engage the bricks 16 so that the weight of the bricks in the pile is carried directly by the rods and not by the holder, since the rods engage the bricks directly through the bridges. In this way the holder is not subjected to any great strains when it is lifted, yet a heavy load of bricks may be carried as one unit. When the holder rests on the ground, the bricks 14 rest directly on the ground through the bottoms of the channels. Since the depth of the channels is less than the width of the bricks, the bricks 16 and the weight of all the remaining layers are carried by the bricks 14 and do not rest at all on the bridges 10. In this way, strain upon the channels is also avoided when the holder rests on the ground.

A reinforced form of holder is shown in Figs. 3 and 4. In this modification, the sheet metal of which the holder is constructed is strengthened by having both its edges bent upon themselves, as at 30, and its central portion folded upon itself twice, as at 32. Channels 4', 6' are then formed in the sheet transversely of its reinforced edges.

In Fig. 4, reference characters 4', 6', 8', 10', 18', and 22' correspond to the reference characters 4, 6, 8, 10, 18 and 22 in Fig. 1.

While I have described my invention with relation to bricks, it is obvious that it may be applied equally well to the handling and packing of hollow tiles, ceramic ware, wood blocks, stones, timbers, glass or metal ingots, or to any objects which can be piled in superimposed layers, the dimensions of the holder being varied to suit the particular objects to be carried. I therefore wish it to be clearly understood that any of these objects come within the scope of the invention, and that the terms "bricks or the like" and "brick", when used in the appended claims, are intended to cover any objects which can be piled in superimposed layers; more particularly, of course, objects of regular rectangular shape; but any other objects which might be piled in this way, as cylinders, would come within the scope of my invention.

In addition, throughout the specification, I have referred to the length, width and thickness of a brick, as this is the preferred form of my invention. However, any form of holder would also come within the scope of the invention in which the width of the channels is an even multiple of one dimension of the object to be packed, or in which the depth of the channels is slightly more than an even multiple of one of the dimensions, or in which the length of the channels is an even multiple of any dimension, the distance between centers of adjoining channels being preferably equal to one of the dimensions. It is obvious that bricks might be laid flat in the channels instead of on edge, or that two or more might be superimposed in the channels, and each of these forms comes within the scope of the invention, whether applied to bricks or to any other suitable objects.

While I have described some embodiments of my invention, I wish it to be understood that I do not intend to limit myself thereby except within the scope of the appended claims.

I claim:

1. A package of bricks or similar articles, including a holder comprising a sheet having channels transversely thereof, bricks laid on edge in said channels, a layer of bricks laid on edge on said first bricks and at right angles thereto, a second layer upon said first layer parallel to the bricks in said channels, and means to secure said bricks to said holder.

2. A package of bricks or the like, including a holder comprising a sheet metal form having channels transversely thereof, the channels at either end of said holder being of a width equal to the thickness of a brick, the intermediate channels being of a width equal to twice the thickness of a brick, the depth of said channels being slightly less than the thickness of a brick, the distances between the centers of adjoining in-

termediate channels and between the centers of the outermost intermediate channels and the outer edges of the end channels being equal to the length of a brick, the material of said holder being deformable to such an extent that the depth of said channels may by pressure be increased to equal or slightly exceed the width of a brick, the width of said holder being an even multiple of the length of a brick, the bricks laid on edge in said channels longitudinally thereof, a layer of bricks resting on edge on said first bricks and at right angles thereto, the ends of the bricks of said layer being in alignment with the edges of said holder and with the centers of said intermediate channels, a second layer of bricks resting on edge on said first layer and parallel to the bricks in said channels covering completely said first layer, and means for holding said bricks in place on said holder.

3. A carrier for a plurality of similar substantially rectangular articles having three dimensions comprising a sheet metal form having channels opening on both faces thereof and extending transversely thereof, the channels opening on the upper face being of a width equal to an even multiple of one dimension of one of said articles, the distance between the centers of adjoining channels being substantially equal to another dimension of one of said articles, whereby said carrier and the objects carried thereby may be lifted by means of rods inserted in the channels opening on the lower face.

4. A carrier for a plurality of similar substantially rectangular articles having length, breadth and thickness, comprising a sheet metal form having channels opening on both faces thereof and extending transversely thereof, the channels opening on the upper face being of a width substantially an even multiple of the thickness of one of said articles, the distance between the centers of adjoining channels being substantially equal to the length of one of said articles, whereby said carrier and the articles carried thereby may be lifted by means of rods inserted in the channels opening on the lower face.

5. A carrier for a plurality of similar substantially rectangular articles having three dimensions, comprising a sheet metal form having channels opening on both faces thereof and extending transversely thereof, the channels opening on the upper face being of a width equal to an even multiple of one dimension of one of said articles, the depth of said channels being slightly less than an even multiple of another dimension of one of said articles, whereby said carrier and the articles carried thereby may be lifted by means of rods inserted in the channels opening on the lower face.

6. A carrier for a plurality of similar substantially rectanglar articles having length, breadth and thickness, comprising a sheet metal form having channels opening on both faces thereof and extending transversely thereof, the channels opening on the upper face being of a width substantially equal to an even multiple of the thickness of one of the articles, the depth of said channels being slightly less than the width of one of said articles, whereby said carrier and the articles carried thereby may be lifted by means of rods inserted in the channels opening on the lower face.

7. A carrier for a plurality of similar substantially rectangular articles having length, breadth and thickness, comprising a sheet metal form having channels opening on both faces thereof and extending transversely thereof, said channels being of such a width as to hold two of said articles set on edge therein, the depth of said channels being slightly less than the width of one of said articles, the distance between the centers of adjoining channels being substantially equal to the length of one of said articles, whereby said carrier and the articles carried thereby may be lifted by means of rods inserted in the channels opening on the lower face.

8. A carrier for a plurality of similar substantially rectangular articles having length, breadth and thickness, comprising a sheet metal form having channels opening on both faces thereof and extending transversely thereof, the channels opening on the upper face at either end of said carrier being of a width equal to the thickness of one of said articles, the intermediate channels being of a width equal to twice the thickness of one of said articles, the distances between the centers of adjoining intermediate channels and between the centers of the outermost intermediate channels and the outer edges of the end channels being equal to the length of one of said articles, whereby said carrier and the articles carried thereby may be lifted by means of rods inserted in the channels opening on the lower face.

9. A carrier for a plurality of similar substantially rectangular articles having three dimensions, comprising a sheet metal form having channels opening on both faces thereof and extending transversely thereof, the channels opening on the upper face being of a width equal to an even multiple of one dimension of one of said articles, the depth of said channels being slightly less than another dimension of one of said articles, the material of said carrier being deformable to such an extent that the depth of said channels may by pressure be increased to equal or slightly exceed said second dimension, whereby said carrier and the articles carried thereby may be lifted by means of rods inserted in the channels opening on the lower face.

10. A carrier for a plurality of similar substantially rectangular articles having length, breadth and thickness, comprising a sheet metal form having channels opening on both faces thereof and extending transversely thereof, the channels opening on the upper face at either end of said carrier being of a width equal to the thickness of one of said articles, the intermediate channels being of a width equal to twice the thickness of one of said articles, the depth of said channels being slightly less than the width of one of said articles, the distances between the centers of adjoining intermediate channels and between the centers of the outermost intermediate channels and the outer edges of the end channels being substantially equal to the length of one of said articles, whereby said carrier and the articles carried thereby may be lifted by means of rods inserted in the channels opening on the lower face.

WILLARD P. SULLIVAN.