

March 7, 1967
N. W. LYNN

FLOOR MAT
Filed June 24, 1965

3,307,317

2 Sheets-Sheet 2




3,307,317<br>FLOOR MAT

Neil W. Lynn, Fort Wayne, Ind., assignor to Life Management, Incorporated, Fort Wayne, Ind., a corporation of Endiana

Filed June 24, 1965, Ser. No. 466,724 10 Claims. (Cl. 52-667)

This is a continuation-in-part application of application Serial No. 239,033, filed November 20, 1962, entitled "Floor Mat," now abandoned.
The present invention relates to a floor mat and more particularly to a floor mat constructed almost entirely of rubber strips uniquely shaped to be inseparably interlocked together.
Conventional floor mats fabricated of rubber-like strips of material are bound or held together in a variety of different ways. In one structure, binding wire is used to lock the transverse mat strips together and also to bind the edges of the mat. In another construction, the individual rubber-like strips are provided with half-notches shaped complementary to be engageable with each other to thereby form a structure in which the crossing strips lie substantially in the same plane.
These prior art structures have been found to be deficient in a number of respects. In the mats which utilize wire bindings and reinforcements, such wires are subject to corrosive attack by moisture and chemicals. In other uses, the notches which hold the crossing strips together do not provide a satisfactory interlock such that the strips are continually separating while in use.
In one prior art mat, two different sets of crossing strips are firmly interlocked together by means of notches in one set which interlock with apertures in the other set. While these mats have been found to meet satisfactorily certain uses to which they have been put, they have been found to be deficient when subjected to heavy-duty use. Also, such prior mats have been relatively expensive to fabricate, which serves to detract from the marketability thereof.
In view of the foregoing, it is an object of this invention to provide a mat structure which withstands heavy usage and which is economical in the fabrication thereof.

It is still another object of this invention to provide a rubber or the like mat composed of interlocking transverse strips wherein all of the strips are substantially identical in size, shape and design.

Other objects will become apparent as the description proceeds.

The above-mentioned and other features and objects of this invention and the manner of attaining them will become more apparent and the invention itself will be best understood by reference to the following description of an embodiment of the invention taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a top plan view of one embodiment of this invention;

FIG. 2 is a fragmentary perspective illustration thereof;
FIG. 3 is a fragmentary side view, drawn to a one-toone scale, of one of the strips used in the mat of FIG. 1;

FIG. 4 is a similar fragmentary edge view of the strip of FIG. 3, and is drawn to a one-to-one scale;

FIG. 5 is an enlarged, fragmentary side view of a portion of the strip of FIG. 3, this FIG. 5 being drawn to double scale;
FIG. 6 is a sectional view taken substantially along section line 6-6 of FIG. 5 and is also drawn to double scale;

FIG. 7 is a fragmentary side elevation of the strip of FIG. 3 stretched to elongate the aperture thereof;
FIG. 8 is a fragmentary illustration in perspective of
several different strips in the process of being assembled together;

FIG. 9 is a view similar to FIG. 8 illustrating another step in the process of fabricating the mat;
FIG. 10 is a fragmentary, perspective illustration of another embodiment of this invention; and

FIG. 11 is a fragmentary, sectional illustration taken substantially along the section line 11-11 of FIG. 10.

Referring to the drawings, and more particularly to FIGS. 1 and 2, the floor mat there illustrated includes a plurality of first elongated strips 10 and a second plurality of elongated strips 12 which extend transversely to the strips 10. These strips preferably are formed of rubber, however, any material of rubber-like constituency having similar elastic properties which permit the strips to be stretched will suffice for the purposes of this invention.

The strips 10 and 12 are preferably formed identically as to size, shape and design, and preferably are of rectangular cross-section. The strips are interlocked together such that the mat may be handled as a unit without fear of any of the strips becoming accidentally separated. Since, in one embodiment of this invention all of the strips $\mathbf{1 0}$ and 12 are identical, a description of one will suffice for all. Referring, therefore, to FIGS. 3 through 6, each strip 10, 12 is provided with a plurality of longitudinally spaced apertures 14 which are formed midway between the strip edges 16 and 18 as shown. These apertures 14 are preferably rectangular in shape with the length thereof being at right angles to the edges 16 and 18. As shown more clearly in FIG. 5, the opposite longitudinal sides 20 of each aperture are slightly curved inwardly for a purpose which will be more fully explained hereinafter. The opposite shorter sides 22 of each aperture are straight and lie in planes substantially parallel to the strip edges 16 and 18 . These shorter sides 22 have a length which is substantially equal to the thickness of the strips 10,12 for a purpose which will be explained more fully hereinafter. Also, the distance between the two longer sides 20 is made to be slightly smaller than strip thickness for a purpose which will be explained more fully hereinafter. As shown more clearly in FIG. 6 , the sides forming the aperture 14 are slightly tapered, such that the aperture is larger on one side of the strip than on the other. The total strip is formed such that for all of the apertures the larger dimension lies on one side of the strip and the smaller dimension on the other side.
Midway between the apertures 14 are a plurality of longitudinally spaced pairs of notches 24 and 26 , respectively, which are essentially square or rectangular in shape and which extend inwardly toward each other from the opposite edges 16 and 18. In the illustrated embodiment, these notches 24 and 26 are of the same size and shape and are aligned oppositely to each other in a direction at right angles to the strip length.

The apertures 14 are spaced equal distances apart as are the notched pairs 24, 26, the latter being disposed at midpoints between adjacent apertures.
Since all of the notches 24, 26, in the illustrated embodiment, are identical in size and shape as well as design, a description of one will suffice for all. Each notch is composed of a bottom 28 and two spaced-apart sides 30. The bottom 28 is flat and lies in a plane parallel to the strip edges 16, 18. More importantly, the plane of the bottom 28 is parallel to the plane of the aperture sides 22. The notch sides 30 extend at right angles to the bottom 28 and edges 16 and 18, and as shown more clearly in FIG. 4 these sides 30 bow slightly inwardly toward each other. These sides 30 have a spacing therebetween which is slightly less than the thickness of the strips $10,12$.

The spacing between the bottoms 30 of the notches 24 and 26 of each pair is slightly greater than the length of the apertures 14. The reason for this is explained more fully hereinafter.

As shown more clearly in FIG. 2, when the strips 10 and 12 are assembled together, the web portions of the strips between the notches 24 and 26 of each pair intimately fit into the respective apertures 14 with the sides 30 of the notches engaging the opposite sides of the strips 10. All of the strips 10 are spaced apart and parallel and are at right angles to all of the strips $\mathbf{1 2}$ which are also spaced apart and parallel. The apertures and the notches are so dimensioned and formed that the web portions between notches 24 and 26 of each pair are intimately, frictionally gripped so as to secure the various strips 10 and 12 in the assembled relationship of FIGS. 1 and 2.
In fabricating the mat of FIGS. 1 and 2, the following described procedure may be followed. It will have been recognized up to this point that the size of each aperture 14 is substantially smaller than the cross-sectional size of the strip 10, 12. This being true, it is impractical, if not impossible, to insert the strips 12 into the apertures 14 of the strips 10 unless the latter can be enlarged or the strips 12 made smaller. In FIGS. 7, 8 and 9 is illustrated one method by which the strip 12 may be inserted through the apertures 14 of the respective strips 10 . As the first step in the procedure, the strips 10 are stretched longitudinally so as to elongate the apertures 14 therein to a form as indicated by the numeral $14 a$ in FIG. 7. When this is done, strips 12 are inserted through transversely aligned elongated apertures $14 a$ as shown in FIG. 8 until the notches 24, 26 become registered therewith. Before stretching the strips 10, they are spaced apart in parallel relationship distances which are equal to the spacing between adjacent notch pairs 24,26 . Thus, when the strip 12 is fully inserted and properly located, the notch pairs 24, 26 coincide precisely with the locations of the elongated apertures $14 a$. With the strip 12 in this position, it is rotated $90^{\circ}$ to the position shown in FIG. 9. Following this, the stretching of the strips 10 is released, thereby permitting the apertures $14 a$ to reduce to the original size of the apertures 14 in which the web portions between the notches 24 and 26 are intimately gripped and surrounded. The crossed strips 10 and 12 will then appear as shown in FIG. 2.

As explained earlier, the apertures 14 are slightly tapered as shown in FIG. 6. When the strips 10 are initially arranged just prior to being stretched, they are turned such that the larger aperture portions thereof open in the same direction from which the strips 12 are to be inserted. By this means, initial insertion of the strips 12 through the elongated apertures $14 a$ is facilitated. Also, to further facilitate insertion of the strips 12 through the apertures $14 a$, an elongated metal needle 32 having two resilient, preformed fingers 34 are clamped over the end of the strip 12 with inturned flanges 36 entering one of the apertures 14 . This needle 32 may therefore be initially inserted through the elongated apertures $14 a$ and used as an instrument for pulling the strip 12 through the apertures against any frictional resistance which might be present.

As described earlier, the longer sides 20 of the apertures 14 are slightly bowed inwardly toward each other as shown in FIG. 5. There are two reasons for this. The first reason is that because of the elastic characteristic of the rubber, the bowed portions exert appreciable gripping effect on the sides of the strip which is inserted therethrough. The second reason resides in the stretching of the strip wherein the sides 20 are stretched to the shape $20 a$ in FIG. 7. By bowing the sides 20 inwardly toward each other as shown in FIG. 5, more stretchable material is made available for elongating the aperture to the shape $14 a$. This permits the aperture 14 to be stretched to a longer dimension, without tearing the rubber, than would
otherwise be possible if the sides 20 were made perfectly straight.
As will now be apparent, the entire mat of FIGS. 1 and 2 may be fabricated of strips which are of identical size, shape and design. Thus, it is necessary only to fabricate one design of strip which may be cut into suitable lengths for forming the orthogonal pattern of the mat. This conduces to economy with respect to the initial cost of the strip as well as to the assembling operation inasmuch as it is not necessary to keep differently designed strips segregated for use as male and female strips, respectively.
While economy in fabrication is realized from the single strip design, still another advantage resides in the use of the notched pairs 24, 26 and apertures 14. As will be seen in FIG. 2, every space enclosed by adjacent strips 10 and 12 have notches 24,26 and apertures 14 therein. When the mat is laid on the floor, these notches and apertures provide for drainage of water or other liquids from the mat. Additionally, the apertures 14 which do not have strips therein provide localized, softer regions which renders the mat more comfortable while being used. The unused notches as seen in FIG. 2 add to the frictional characteristics of the mat surface, whereby a person walking on the mat is less apt to slip and fall.

Lastly, one of the most important features of this invention resides in the fact that by dimensioning and forming the various apertures and notches as already described, the crossed strips 10 and 12 are firmly and intimately locked together such that it is virtually impossible for the strips 12 to be rotated in the apertures 14 of the other strips 10 while the mat is being used. This is a particularly desirable feature in a mat of this character inasmuch as rotation of any of the strips 12 in the strips $\mathbf{1 0}$ seriously reduces the usefulness of the mat as well as the safety characteristics thereof. The various features which conduce to the firm interlocking of the strips 10 and 12 are the elongated configuration of the apertures 14, the bowed configuration of the aperture sides 20 , the length of the web portions between notches 24 and 26 of each pair (this web portion being slightly longer than the apertures 14), the narrowness of the notches 24,26 and the resilient clamping which results from the fit between the interlocking portions of the crossed strips.

Referring to the embodiment of this invention illustrated in FIGS. 10 and 11, a further significant advantage residing in the use of the strip configuration of FIGS. 3 and 4 will be demonstrated. In the explanation hereinabove, it bas been shown that the strips 10 and 12 in the matting configuration of FIG. 1 are firmly and frictionally locked together in a way to inhibit rotation of the strips 12 in the apertures 14 of the strips 10 . This is primarily due to the gripping arrangement provided by the particularly shaped notches and apertures as well as the resiliency provided in the strip material. In the embodiment as shown in FIGS. 10 and 11, instead of relying upon the particular frictional gripping of the notches and apertures interlocked together, rotation of the strips 10 and 12 is affirmatively prevented. In other words, in this configuration of FIGS. 10 and 11, it is impossible to rotate any of the strips, and this is all due to the particular notch and aperture configuration of the strips 10 and 12 as shown in FIGS. 3 and 4.
In FIGS. 10 and 11, a mat fragment is shown. The reference numerals will indicate like parts, the numerals 10 and 12 indicating the interlocked strips in the form already shown and explained in connection with FIGS. 1 and 2. However, as is obvious from an examination of FIGS. 1 and 2, there are apertures in the strips 12 not occupied by strips and there are notches in the strips 10 also not occupied by strips. In FIGS. 10 and 11, the mat there has these apertures and notches interlocked with other strips, strips $10 a$ being shown as being interlocked with the apertures in strips 10 , and strips $10 b$ being shown as being interlocked with the notches of
strips 10. The strips $10 a$ extend parallel to the strips 10 and the strips $10 b$ extend parallel to the strips 12.
Examining the strips $10 a$ for a moment, it will be noted that the notches $24 a$ and $26 a$ thereof embrace the strips 12 the same as the notches of the strips 12 embrace the strips 10 . However, where the strips $10 a$ and $10 b$ cross, the notches $24 b$ and $26 b$ of the strip $10 b$ embrace the strip $10 a$, with the web portion of the strip $10 b$ passing through the companion aperture in the strip $10 a$. Thus, all the strips $\mathbf{1 0}, \mathbf{1 0} a, \mathbf{1 0} b$ and $\mathbf{1 2}$ are interlocked in the same manner as already explained in detail in connection with the strips 10 and 12 of the matting of FIGS. 1 and 2.

Now if the segment of mat of FIG. 10 is closely examined, it will appear that not a single one of the strips can be rotated about the longitudinal axis thereof. All the strips 10 are held against rotation by reason of being embraced by the notches of the strips 12. The strips $10 a$ cannot be rotated, because they are embraced by the notches of the strips $10 b$. The strips 12 cannot be rotated, because they are embraced by the notches of the strips $10 a$. The strips $10 b$ cannot be rotated, because they are embraced by the notches of the strips 10 . Thus, all of the strips are firmly, positively interlocked and held in place, all of this being attributable to the aper-ture-notch configuration of the individual strips as shown in FIGS. 3 and 4. This strip configuration therefore possesses substantial uniqueness in that different mat designs may be fabricated for achieving particular desired end results. The strips may be used to fabricate the mat designs of FIGS. 1 and 2 for achieving the end objectives as already explained hereinbefore. These same strips may be used for the mat design of FIGS. 10 and 11 for achieving greater interlocking strength and for providing a greater number of criss-crossed strips. Other uses will become apparent to a person skilled in the art.
In a practical embodiment of this invention, the dimensions as given in the following have been used. These dimensions are given by way of exemplification and are not to be considered as limitations inasmuch as these dimensions may be altered without departing from the spirit and scope of this invention.


While I have described above the principles of my invention in connection with specific apparatus, it is to be clearly understood that this description is made only by way of example and net as a limitation to the scope of my invention.

What is claimed is:

1. A mat comprising a plurality of substantially identical first and second elongated rubber strips which are rectangular in cross-section and which have opposite sides and edges, respectively, said first strips being spaced apart and parallel with all of the sides thereof also being parallel, said second strips being spaced apart and parallel with all of the sides thereof also being parallel, said first strips extending at right angles to said second strips; each said strip having a plurality of pairs of notches and apertures longitudinally spaced apart, said apertures being disposed between said pairs of notehes, respectively, the spacing between adjacent notch pairs and apertures be-
ing substantially equal; said apertures being through the strip sides and extending in the direction of strip thickness, said apertures being substantially rectangular in shape with the opposite longer sides thereof extending substantially at right angles to the length dimension of the strip, the opposite shorter sides of said apertures having a length substantially equal to strip thickness, said longer aperture sides curving inwardly toward each other by an amount which renders the central aperture portion therebetween slightly narrower than strip thickness, said apertures each tapering slightly from one strip side to the other; the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, said transverse alignment being in a direction at right angles to strip length, the notches of each pair terminating short of each other to define a web portion therebetween, said notches having substantially equal depths and equal widths, each notch having a bottom and two opposite sides, said bottom being substantially fiat and lying in a plane substantially parallei to the strip edge, said notch sides being at substantially right angles to said bottom, the notch width being slightly less than strip thickness, the distance between the bottoms of each pair of notches being slightly greater than the length of said apertures; said first and second strips being interlocked together, said web portions of said first strips fitting into said apertures of said second strips, said notches of said first strips straddling and frictionally gripping the sides, respectively, of said second strips, the longer sides of said apertures of said second strips straddling and frictionally gripping the sides, respectively, of said first strips, the shorter sides of said apertures frictionally gripping the bottoms of said notches, respectively, of said first strips, the sides of said first and second strips lying in planes which intersect each other in straight lines which are normal to said strip edges.
2. A mat comprising a plurality of substantially identical first and second elongated rubber strips which are rectangular in cross-section and which have opposite sides and edges, respectively, said first strips being spaced apart and parallel with all of the sides thereof also being parallel, said second strips being spaced apart and parallel with all of the sides thereof also being parallel, said first strips extending at right angles to said second strips; each said strip having a plurality of pairs of notches and apertures longitudinally spaced apart, said apertures being disposed between said pairs of notches, respectively, the spacing between adjacent notch pairs and apertures being substantially equal; said apertures being through the strip sides and extending in the direction of strip thickness, said apertures being substantially rectangular in shape with the opposite longer sides thereof extending substantially at right angles to the length dimension of the strip, the opposite shorter sides of said apertures having a length susbtantially equal to strip thickness, said longer aperture sides curving inwardly toward each other by an amount which renders the central aperture portion therebetween slightly narrower than strip thickness; the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, the notches of each pair terminating short of each other to define a web portion therebetween, said notches having substantially equal depths and equal widths, each notch having a bottom and two opposite sides, said bottom being substantially flat and lying in a plane substantially parallel to the strip edge, said notch sides being at substantially right angles to said bottom, the notch width being slightly less than strip thickness, the distance between the bottoms of each pair of notches being slightly greater than the length of said apertures; said first and second strips being interlocked together, said web portions of said first strips fitting into said apertures of said second strips, said notches of said first strips straddling and frictionally gripping the sides, respectively, of said second strips, the longer sides of said apertures of
said second strips straddling and frictionally gripping the sides, respectively, of said first strips, the shorter sides of said apertures frictionally gripping the bottoms of said notches, respectively, of said first strips, the sides of said first and second strips lying in planes which intersect each other in straight lines which are normal to said strip edges.
3. A mat comprising a plurality of substantially identical first and second elongated rubber strips which are rectangular in cross-section and which have opposite sides and edges, respectively, said first strips being spaced apart and parallel with all of the sides thereof also being parallel, said second strips being spaced apart and parallel with all of the sides thereof also being parallel, each said strip having a plurality of pairs of notches and apertures longitudinally spaced apart, said apertures being disposed between said pairs of notches, respectively, said apertures being through the strip sides and extending in the direction of strip thickness, said apertures being substantially rectangular in shape with the opposite longer sides thereof extending substantially at right angles to the length dimension of the strip, the opposite shorter sides of said apertures having a length substantially equal to strip thickness, said longer aperture sides curving inwardly toward each other by an amount which renders the central aperture portion therebetween slightly narrower than strip thickness, the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, the notches of each pair terminating short of each other to define a web portion therebetween, said notches having substantially equal depths and equal widths, each notch having a bottom and two opposite sides, said bottom being substantially flat and lying in a plane substantially parallel to the strip edge, said notch sides being at substantially right angles to said bottom, the notch width being slightly less than strip thickness, the distance between the bottoms of each pair of notches being slightly greater than the length of said apertures; said first and second strips being interlocked together, said web portions of said first strips fitting into said apertures of said second strips, said notches of said first strips straddling and frictionally gripping the sides, respectively, of said second strips, the longer sides of said apertures of said second strips straddling and frictionally gripping the sides, respectively, of said first strips, the shorter sides of said apertures frictionally gripping the bottom of said notches, respectively, of said first strips, the sides of said first and second strips lying in planes which intersect each other in straight lines which are normal to said strip edges.
4. For use in a rubber mat an elongated rubber strip rectangular in cross-section and having opposite sides and edges, respectively, said strip having a plurality of pairs of longitudinally spaced apart notches respectively formed in said opposite edges and longitudinally spaced apart apertures respectively formed through said sides, said apertures being interposed between each said pair of notches, respectively, the spacing between adjacent notch pairs and apertures being substantially equal, said apertures being through the strip sides and extending in the direction of strip thickness, said apertures being substantially rectangular in shape with the opposite longer sides thereof extending substantially at right angles to the length dimension of the strip, the opposite shorter sides of said apertures having a length substantially equal to strip thickness, said longer aperture sides curving inwardly toward each other by an amount which renders the central aperture portion therebetween slightly narrower than strip thickness, said apertures each tapering slightly from one strip side to the other, the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, said transverse alignment being in a direction at right angles to strip length, the notches of each pair terminating short of each other to define a web portion therebetween, said notches having substantially equal 7
depth and equal width, each notch having a bottom and two opposite sides, said bottom being substantially flat and lying in a plane substantially parallel to the strip edge, said notch sides being at substantially right angles to said bottom, the notch width being slightly less than strip thickness, the distance between the bottoms of each pair of notches being slightly greater than the length of said apertures.
5. For use in fabricating rubber mats an elongated rubber strip of rectangular cross-section and having opposite sides and edges, respectively, said strip having a plurality of pairs of longitudinally spaced apart notches and longitudinally spaced apart apertures respectively formed in said opposite edges respectively formed through said sides of one of said apertures being between each said pair of notches, respectively, said apertures being through the strip sides and extending in the direction of strip thickness, said apertures being substantially rectangular in shape with the opposite longer sides thereof extending substantially at right angles to the length dimension of the strip, said longer sides being spaced apart slightly less than strip thickness, the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, the notches of each pair terminating short of each other to define a web portion therebetween, said notches having substantialiy equal depths and equal widths, each notch having a bottom and two opposite sides, said bottom being substantially flat and lying in a plane substantially parallel to the strip edge, said notch sides being at substantially right angles to said bottom, the notch width being slightly less than strip thickness, the distance between the bottoms of each pair of notches being slightly greater than the length of said apertures.
6. For use in fabricating rubber mats an elongated rubber strip of rectangular cross-section and having opposite sides and edges, respectively, said strip having a plurality of pairs of longitudinally spaced apart notches respectively formed in said opposite edges and longitudinally spaced apart apertures respectively formed through said sides, one of said apertures being between each said pair of notches, respectively, said apertures being orthogonal in shape with two opposite sides thereof extending substantially at right angles to the length dimension of the strip, the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, the notches of each pair terminating short of each other to define a web portion therebetween, said apertures each having a widh siightly less than strip thickness and a length slightly shorter than the spacing between notches in each pair, and said notches each having a width slightly less than strip thickness.
7. The mat of claim i wherein the web portions of said second strips fit into the remaining apertures, respectively, of said first strips, the notches of said second strips straddling and frictionally gripping the sides, respectively, of said first strips, and the longer sides of said apertures of said first strips straddling and frictionally gripping the sides, respectively, of said second strips.
8. A mat comprising a plurality of first and second elongated rubber strips which have opposite sides and edges, respectively, said first strips being spaced apart and parallel with all of the sides thereof also being parallel, said second strips being spaced apart and parallel with all of the sides thereof also being parallel, each said strip having a plurality of pairs of notches and apertures longitudinally spaced apart, said apertures being disposed between said pairs of notches, respectively, said apertures being through the strip sides and extending in the direction of strip thickness, the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, said transverse alignment being in a direction at right angles to strip length, the notches of each pair termi-

## 10

nating short of each other to define a web portion therebetween, said first and second strips being interlocked together, said web portions of said first strips fitting into said apertures of said second strips, said notches of said first strips straddling and frictionally gripping the sides, respectively, of said second strips, thereby preventing said second strips from twisting about the longitudinal axes thereof, said web portions of said second strips fitting into said apertures of said first strips, said second strip notches straddling and frictionally gripping the sides, respectively, of said first strips, thereby preventing said first strips from twisting about the longitudinal axes thereof.
9. The mat of claim 8 wherein all apertures and web portions are of substantially the same size and shape.
10. A mat comprising a plurality of first and second elongated rubber strips which are rectangular in cross-section and which have opposite sides and edges, respectively, said first strips being spaced apart and parallel with all of the sides thereof also being parallel, said second strips being spaced apart and parallel with all of the sides thereof also being parallel, each said strip having a plurality of pairs of notches and apertures longitudinally spaced apart, said apertures being disposed between said pairs of notches, respectively, said apertures being through the strip sides and extending in the direction of strip thickness, said apertures being substantially rectangular in shape with the opposite longer sides thereof extending substantially at right angles to the length dimension of the strip, the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, said transverse alignment being in a direction at right angles to strip length, the notches of
each pair terminating short of each other to define a web portion therebetween, said first and second strips being interlocked together, said web portions of said first strips fitting into said apertures of said second strips, said notches of said first strips straddling and frictionally gripping the sides, respectively, of said second strips, the longer sides of said apertures of said second strips straddling and frictionally gripping the sides, respectively, of said first strips, the shorter sides of said apertures frictionally gripping the bottoms of said notches, respectively, of said first strips, the sides of said first and second strips lying in planes which intersect each other in straight lines which are normal to said strip edges, said web portions of said second strips fitting into said apertures of said first strips, said notches of said second strips straddling and frictionally gripping the sides, respectively, of said first strips, and the longer sides of said apertures of said first strips straddling and frictionally gripping the sides, respectively, of said second strips.

## References Cited by the Examiner <br> UNITED STATES PATENTS



FRANK L. ABBOTT, Primary Examiner.
J. E. MURTAGH, Assistant Examiner.

