April 13, 1954 J. D. TENNISON 2,674,765

TERMITE SHIELD

Filed Nov. 30, 1950

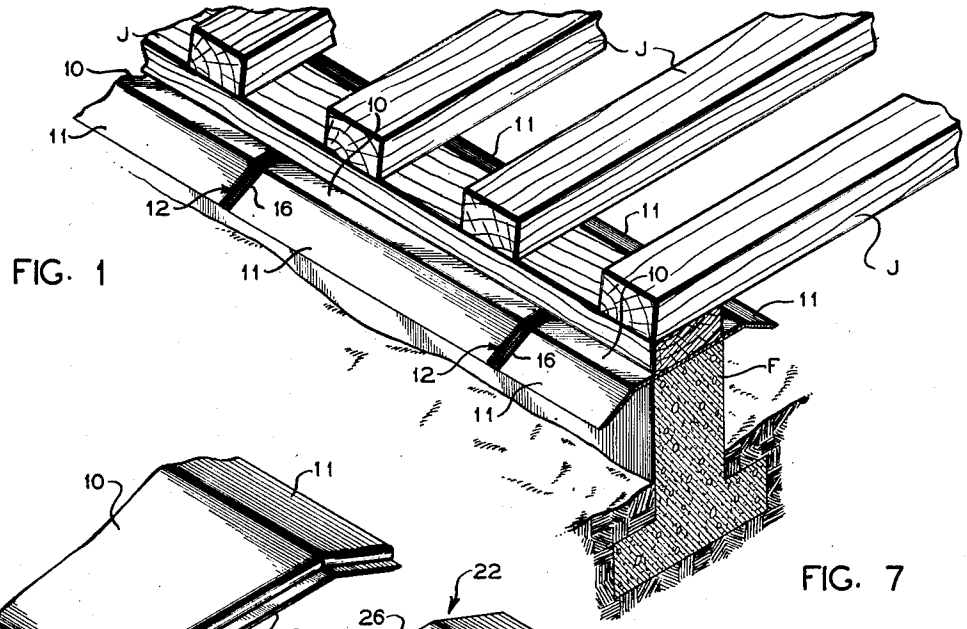


FIG. 1

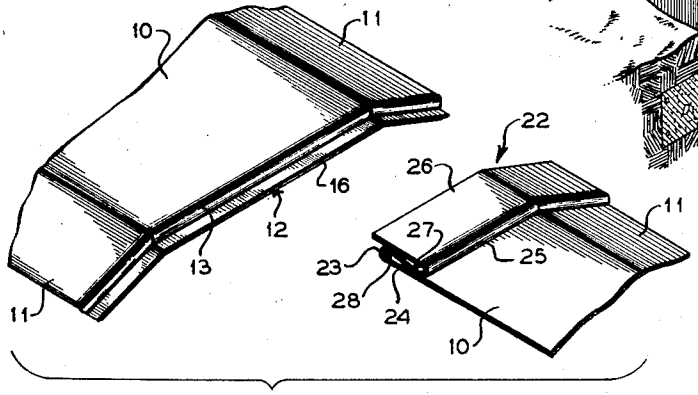


FIG. 2

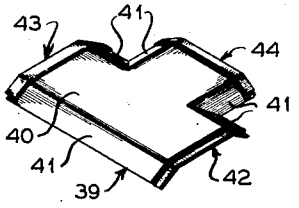


FIG. 7

FIG. 3

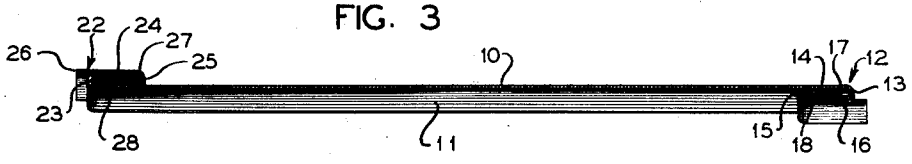


FIG. 4

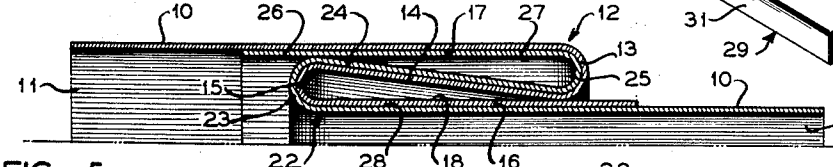


FIG. 5

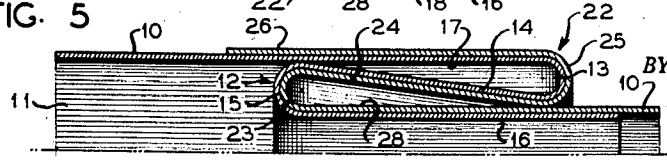
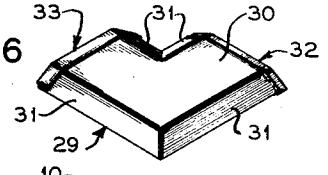


FIG. 6



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TERMITE SHIELD

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6 Claims. (Cl. 20—1)

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This invention relates to termite shields and more particularly to a lock joint whereby a plurality of such shields may be readily and conveniently assembled without requiring the use of special or other tools, equipment, or other materials.

Termite shields of the character with which we are here concerned are presently employed with increasing success in the protection of wooden portions of buildings or other structures against the destructive action of termites and other wood boring insects. The necessity for such protection is particularly great in structures having no basement, or subterranean portion, where wooden foundations are in contact with or substantially close to the ground.

Concrete or similar footings are generally employed, in structures of this character, and for effective protection against termites and other insects, metallic shields are positioned either within or above these footings with the wooden rafters, joists, and the like, supported thereabove. For convenience of installation as well as economy of manufacture these metallic termite shields have generally been provided in convenient, fixed lengths and, since the structure walls are of much greater extent than the conventional lengths of such shields, a plurality of shields are appropriately assembled and installed in accordance with the size of the structure and the length of the walls thereof. For effective results, such assembly requires a particularly secure joint between adjacent shields and various methods have been employed to attain this end.

Present day practices call for a soldered joint, which is particularly expensive, or for the use of resilient and frictional connecting members, the latter method adding materially to the expense of installation, requiring the manufacture of relatively costly connecting elements and skilled labor for the assembly thereof at the site of the construction.

The majority of such connectors as are manufactured in accordance with prior art teachings have proven unsatisfactory in actual practice, either by reason of an ineffective joint or through deterioration at the joint through the action of the elements.

A generally satisfactory termite shield comprises a metallic sheet having corrosion resistant properties and which projects in a substantially horizontal direction a minimum of two inches beyond each side of a vertically disposed foundation wall or footing, the longitudinal edges of the shield being bent downwardly at an angle on the order of 45° from the horizontal, the width

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of such bent or angularly inclined portions also being approximately two inches. Thus, since each shield extends transversely in a horizontal direction and inclines downwardly at opposite sides or edges thereof, the provision of an effective locking joint at the points where angular inclination commences is inherently difficult. Moreover, since in the majority of instances the weight of the structure is supported at least in part upon the horizontally disposed portions of the joints, a degree of distortion takes place, where separate resilient or frictional connecting elements are employed, which is adverse to the effectiveness of the seal adjacent the outer or inclined portions of each joint.

Accordingly, it is a major object of the present invention to provide a novel lock joint for termite shields whereby a plurality of individual shields may be rapidly and conveniently assembled with no requirement for the use of tools, other materials, or particularly skilled labor.

It is a further object of the present invention to provide a novel termite shield manufactured with a lock joint as an integral portion of the extremity thereof so that opposed extremities of adjacent shields may be interengaged, providing an efficient and secure lock therebetween.

It is a further object of the present invention to provide a novel lock joint for termite shields which will extend transversely across said shields for the entire width thereof, including horizontally disposed central portion and downwardly inclined edges.

It is a still further object of the invention to provide an efficient and resilient lock joint for the extremities of termite shields whereby frictional engagement is had across the entire width of the shield and for a substantial area thereof, such frictional engagement being inherent to the method of fabrication of the locking extremities of the shields.

It is a still further object of the present invention to provide an efficient and resilient lock joint for the extremities of termite shields which will be equally applicable for use upon shields of varying surface conformation including, among others, shields having straight longitudinal axes, shields having arcuate longitudinal axes, right-angle shields intended for use at the corners of structures, and T-shaped shields intended for use at the juncture of side and transverse footings.

Other objects and the nature and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawing, wherein:

Fig. 1 is a perspective view of a portion of a

foundation wall illustrating a termite shield associated therewith and wooden supporting joists thereabove;

Fig. 2, a fragmentary perspective view illustrating in expanded relationship the opposed extremities of adjacent termite shield sections;

Fig. 3, a longitudinal sectional view through a termite shield section illustrating the lock joint fabrication at opposed extremities thereof;

Fig. 4, an enlarged detail sectional view illustrating the engaged extremities of adjacent termite shield sections in locked position;

Fig. 5, an enlarged detail sectional view illustrating a modified method of assembly of adjacent termite shield sections;

Fig. 6, a perspective view on a somewhat reduced scale illustrating a termite shield section intended for use at the corner of a structure;

Fig. 7, a perspective view also on a somewhat reduced scale illustrating a termite shield section intended for use at the juncture of side and transverse footings.

As illustrated more particularly in Fig. 1 of the drawing, a termite shield comprising a plurality of longitudinally disposed sections has been positioned upon the upper surface of a concrete foundation or footing F, longitudinal and transverse wooden joists J being supported directly above the shield.

Each shield section includes a horizontally disposed central portion 10 and inclined edge portions 11 which extend downwardly from the horizontal, at an angle on the order of 45°. Preferably the footing F extends some eighteen inches above the ground, such a distance being in excess of that to which termites may travel in direct flight, and the width of the central portion 10 is sufficient to extend a minimum of two inches beyond the vertical walls of the footing. The width of each of the downwardly inclined portions 11 is also preferably two inches, dimensions of this character having proven entirely adequate. The length of each termite section is such as to permit of convenient handling, without undue weight, and may be either standardized or in accordance with the particular structure, if desired, but a single inclined surface 11 may be provided, located on but one side of the shield section, for purposes of convenience two such inclined surfaces have been illustrated and described.

In accordance with the present invention the opposed extremities of each termite shield section are especially conformed for complementary interengaging and locking relationship with the extremity of the next adjacent section. As will be more readily apparent from an examination of Fig. 3 of the drawing, the extremity 12 is of downwardly directed generally S-shaped conformation, the shield section being bent backwardly upon itself to provide an arcuate end 13 and an upwardly directed intermediate leg 14, the portion thus defined being intended for interlocking and frictional engagement with a complementarily conformed portion on the opposed extremity of the adjacent shield section.

The upper extremity of the leg 14 frictionally engages the under surface of the shield section and the shield section is then bent reversely upon itself to provide an arcuate end 15 and the horizontally disposed terminal leg 16 of the S-joint. Preferably the leg 16 is disposed in substantial parallelism with the shield proper and extends beyond the arcuate end 13, the upper surface of this leg frictionally engaging the lower surface of the intermediate leg 14 at the point of juncture with the arcuate extremity 13. By the arrangement thus described spaces 17 and 18 are provided above and below the intermediate leg 14, respectively, for a purpose to be described more fully hereinafter.

Preferably the opposed extremity 22 of each shield section is of complementarily reverse conformation with respect to the extremity 12. Thus, each extremity 22 is of upwardly directed generally S-shaped conformation, the shield section being bent upon itself in the direction of the opposed extremity to provide a transverse arcuate end 23 and a downwardly directed intermediate leg 24, the lower extremity of the leg 24 frictionally engaging the upper surface of the shield section. From this point of frictional engagement the shield section is then bent reversely upon itself to provide an arcuate end 25 and the horizontally disposed terminal leg 26 of the S-joint. The two joints are thus mirror images of each other, the leg 26 being disposed in substantial parallelism with respect to the shield section and extending beyond the arcuate end 23, the lower surface of this leg frictionally engaging the upper surface of the intermediate leg 24 at the point of juncture with the arcuate extremity 23.

By this arrangement spaces 27 and 28 are provided above and below the intermediate leg 24, respectively, the space 28 receiving therein the male extremity of the adjacent shield section, this extremity being defined by the arcuate end 15 and the upwardly inclined intermediate leg 14. In like manner the male element or extremity defined by the arcuate end 25 and downwardly inclined intermediate leg 24 is received within the complementarily conformed space 17 of the adjacent section. Thus, each extremity of each shield provides male and female elements designed for locking engagement with complementarily conformed elements on the opposed extremity of the adjacent shield section.

There has been illustrated in Fig. 4 of the drawing the extremities of two shield sections interengaged in locking relationship. The parallel relationship between the shield sections and the terminal legs 16 and 26 of the opposed extremities, and the widths of these legs, insures frictional engagement of these legs with the adjacent surfaces of the shield sections over a substantial area, materially increasing the effectiveness of the joint. In addition, the nature of the construction is such that each male element frictionally engages over the entire surface area of its associated female element and, by reason of the inherent nature of the arcuate ends forming the convolutions of the S-shaped extremities, maximum resiliency is added to this frictional engagement providing a locked joint having an effectiveness heretofore unknown in this art.

With adjacent extremities of termite shield sections thus interengaged and locked together, endwise displacement by reason of undue or excessive stresses from whatever cause is effectively prevented and this method of assembly is preferred in connection with the majority of installations, particularly in new structures where the shield is installed prior to construction work thereabove. However, under circumstances where a shield is being placed upon structures which are partially or completely erected, or where an addition to an existing shield is required it may be more convenient to assemble adjacent shield sections in end-to-end frictional

engagement rather than in interlocked relationship as described hereabove.

Such a joint has been illustrated in Fig. 5 of the drawing and is equally effective as the locked joint disclosed in Fig. 4 and previously described. In such a joint the male element of the shield section extremity 12, defined by the arcuate end 13 and the upwardly directed intermediate leg 14, is received within the complementarily conformed space 27 of the adjacent section. In like manner the male element defined by the arcuate end 23 and downwardly inclined intermediate leg 24 of the extremity 22 is received within the complementarily conformed space 18. A joint of this character is achieved by end-to-end frictional engagement and is susceptible of endwise separation or displacement under sufficient stress as distinguished from the locked joint of Fig. 4, however, it may be obtained with greater facility than a lock joint where it is necessary to place the extremity of one section beneath the extremity of the adjacent section and then move one or both of the sections longitudinally and in opposition to accomplish locking interengagement.

Shields of the character thus described may be fabricated en masse and assembled upon the job without requiring tools, skilled labor, or additional materials. By the use of appropriate dies, fabrication of the S-joint structure is a particularly simple matter and adds but little to the cost of manufacture and a plurality of shield sections may be conveniently and economically assembled to produce a shield member either of indeterminate length or tailored to fit the particular requirements of a given structure. If desired, two forms of shield sections may be provided, instead of the form illustrated and described herein, one with the S-joints provided on the lower surface of each extremity and the other with the S-joints located on the upper surface. Alternate use of such forms of shield sections will produce an assembled shield more nearly on a horizontal plane. However, this issue is not of particular importance since positioning of the building structure and weight thereof above the assembled shield will compress the joints to a single plane, adding to the effectiveness thereof.

There has been illustrated in Fig. 6 of the drawing a termite shield section embodying the present invention and especially designed for use at the corners of structures. This shield section is of right-angular or L-shaped conformation and includes a horizontally disposed central portion 30 and downwardly inclined edge or side portions 31. The extremities of this corner shield section are of generally S-shaped conformation, similar to that described hereabove, the extremity 32 being downwardly directed and identical to the extremity 12 while the opposed extremity 33 is upwardly directed and identical to the extremity 22. Thus, it will be readily apparent that a corner shield section may be placed in position and longitudinal shield sections, such as have been previously described and are illustrated in Figs. 2 through 5 of the drawing, may be interlocked or frictionally engaged with the opposed extremities thereof in accordance with the teachings of the present invention.

Where structures are provided with corners that are not true 90° angles, the manufacture of a corner shield complementary to the particular angular relationship existing between the wall structures emanating from such corners will present no particular problem.

The shield section 39 illustrated in Fig. 7 of the drawing is especially designed for use at the juncture of longitudinally and transversely disposed footings or foundations. This shield section is of T-shaped conformation and includes a horizontally disposed central portion 40 and downwardly inclined side or edge portions 41. Thus a shield section is formed having three extremities, each of which is of generally S-shaped configuration, similar to that described in detail hereabove. Preferably, the extremity 42 of the head portion of the T is downwardly directed and is identical to the extremity 12 while the opposed extremity 43 of this shield section is upwardly directed and is identical to the extremity 22. The transverse extremity 44 of the section 39, located at the extremity of the leg of the T, is also of generally S-shaped conformation, having been illustrated as upwardly directed. However, whether this joint portion be upwardly or downwardly directed is of no importance and can have no bearing on the effectiveness of this shield section.

It will be apparent that a shield section 39 may be placed in position at the juncture of longitudinally and transversely disposed footings and longitudinally dipsosed shield sections may be interlocked or, optionally, frictionally engaged with the three extremities thereof in the assembly of a finished and effective shield for the structure. Where transverse and longitudinal footings cross each other, a shield section (not shown) may be provided of cross-shaped conformation having four legs disposed in diametrically opposed relationship, the extremity of each leg being of S-shaped configuration.

Obviously the forms of the invention illustrated in Figures 1 through 7 of the drawings may be fabricated with but a single inclined edge without in any manner departing from the inventive concept.

It will be readily apparent that termite shield sections, whether of standardized construction or specially fabricated in accordance with specific or unusual structural requirements, may be manufactured en masse in accordance with the present inventive concept and may be readily and conveniently assembled at the site of the structure, requiring neither special tools, additional materials, or unusually skilled labor. The structure is such that permanently effective joints are provided, insuring against deterioration at the joint per se, heretofore the weakest point of shields of the character with which we are here concerned.

It will be obvious to those skilled in the art that various changes may be made in this device without departing from the spirit of the invention and therefore the invention is not limited by that which is shown in the drawing and described in the specification but only as indicated in the appended claims.

I claim:

1. In a joint for a termite shield formed from a plurality of shield sections, each section havign a central horizontally disposed portion and inclined side portions, the opposed extremities of each section being of generally S-shaped conformation, one extremity being bent downwardly and reversely upon itself to provide a first transverse arcuate end portion and an upwardly inclined intermediate leg portion, said intermediate leg portion being bent downwardly and reversely to provide a second transverse arcuate end portion and a reversely extending terminal

leg of sufficient length to extend beyond said first arcuate end portion, the opposed extremity of said shield section being bent upwardly and reversely upon itself to provide a first transverse arcuate end portion and a dowwnardly inclined intermediate leg portion, said intermediate leg portion being bent upwardly and reversely to provide a second transverse arcuate portion and a reversely extending terminal leg of sufficient length to extend beyond said first arcuate end portion, each inclined intermediate leg portion and associated terminal leg together with the arcuate end portion therebetween comprising a male element complementary to the extremity of the adjacent shield section and frictionally engaged and locked therewith when in assembled position to prevent endwise movement of the shield sections in opposite direction and separation of said joint.

2. A joint for a termite shield as set forth in claim 1 where each terminal leg is disposed in substantial parallelism with respect to the intermediate portion of the shield section of which said terminal leg is a part.

3. A joint for a termite shield as set forth in claim 1 where at least one of the shield sections is of L-shaped surface area.

4. A joint for a termite shield as set forth in claim 1 where at least one of the shield sections is of T-shaped surface area, the extremities of the head and body of the T being of S-shaped conformation.

5. In a joint for a termite shield formed from a plurality of shield sections, each section having a central horizontally disposed portion and inclined side portions, the opposed extremities of each section being of generally S-shaped conformation, one extremity being bent downwardly and reversely upon itself to provide a first transverse arcuate end portion and an upwardly inclined intermediate leg portion, said intermediate leg portion being bent downwardly and reversely to provide a second transverse arcuate end portion and a reversely extending terminal leg of sufficient length to extend beyond said first arcuate end portion, the opposed extremity of said shield section being bent upwardly and reversely upon itself to provide a first transverse arcuate end portion and a downwardly inclined intermediate leg portion, said intermediate leg portion being bent upwardly and reversely to provide a second transverse arcuate portion and a reversely extending terminal leg of sufficient length to extend beyond said first arcuate end portion, each inclined intermediate leg portion together with the adjacent portion of said shield section and the arcuate end portion therebetween comprising a male element complementary to the extremity of the adjacent shield section and frictionally engaged therewith when in assembled position.

6. A termite shield section having a central horizontally disposed intermediate portion, at least one downwardly and outwardly inclined side portion and complementarily conformed extremities of generally S-shaped configuration, one of said extremities being bent downwardly and reversely upon itself to provide a first transverse arcuate end portion and an upwardly inclined intermediate leg portion, the upper extremity of said intermediate leg portion being bent downwardly and reversely to provide a second transverse arcuate end portion and a reversely extending terminal leg of sufficient length to extend beyond said first arcuate end portion, the upper surface of said second arcuate end portion frictionally engaging the lower surface of said shield section and the lower surface of said first arcuate end portion frictionally engaging the upper surface of said terminal leg, the opposed extremity of said shield section being bent upwardly and reversely upon itself to provide a first arcuate end portion and a downwardly inclined intermediate leg portion, the lower extremity of said intermediate leg portion being bent upwardly and reversely to provide a second transverse arcuate end portion and a reversely extending terminal leg of sufficient length to extend beyond said first arcuate end portion, the lower surface of said second arcuate end portion frictionally engaging the upper surface of said shield section and the upper surface of said first arcuate end portion frictionally engaging the lower surface of said terminal leg portion, each terminal leg portion and associated intermediate leg portion comprising an element for frictionally engaging the opposed complementarily conformed extremity of an adjacent shield section.

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