Nov. 1, 1938. E. L. FELLMAN 2,135,391

TERMITE CONTROL

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FIG. 1

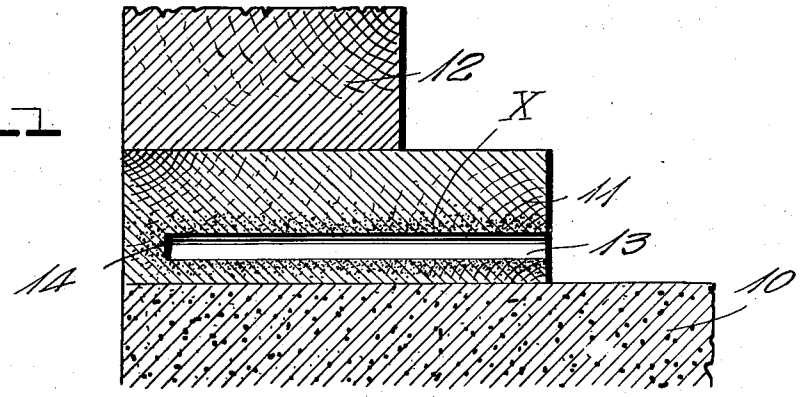


FIG. 2

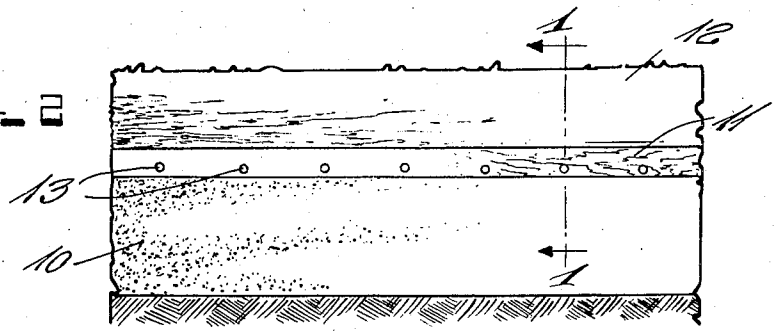


FIG. 3

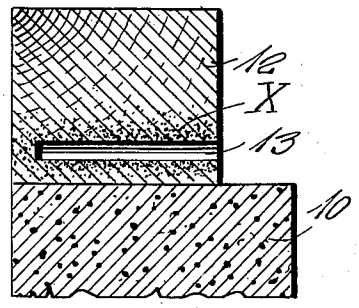
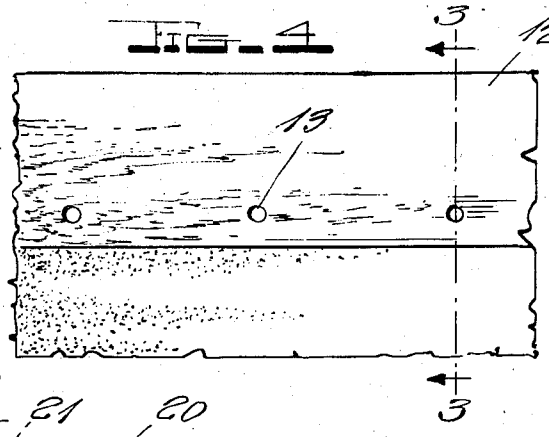


FIG. 4



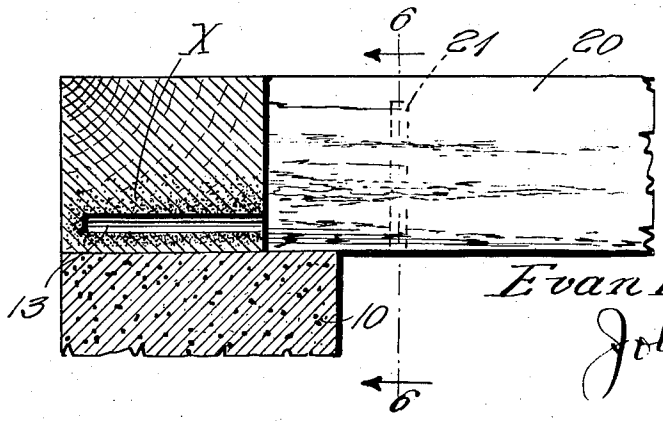


FIG. 5

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Fig. 6

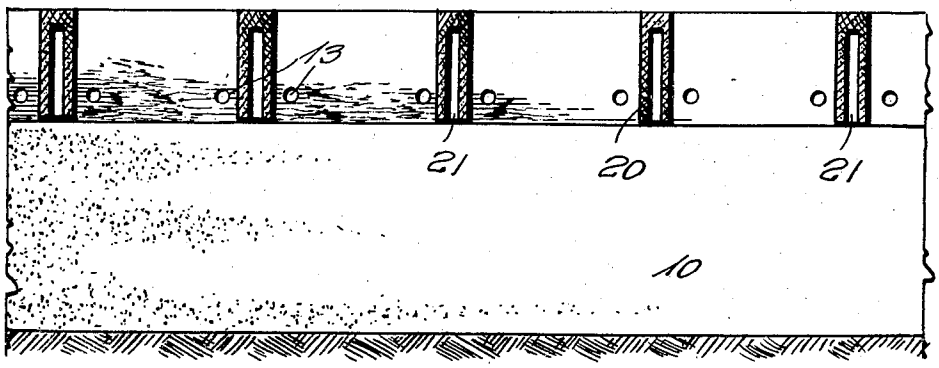


Fig. 7

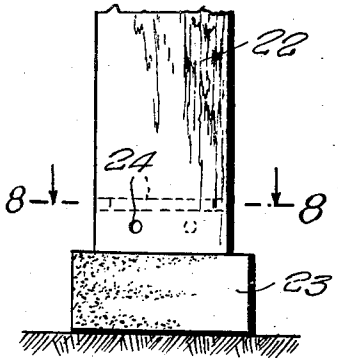


Fig. 8

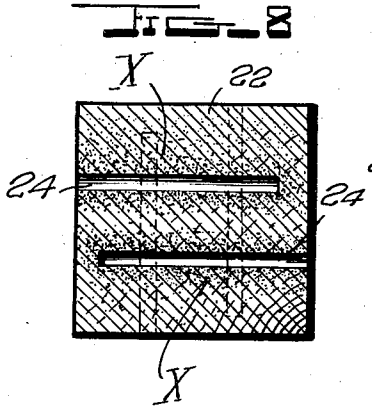
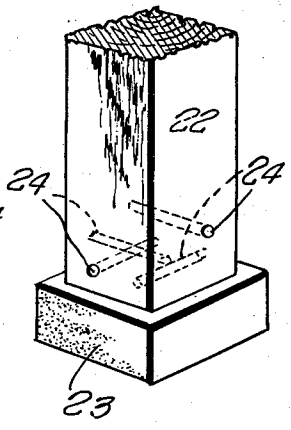


Fig. 9



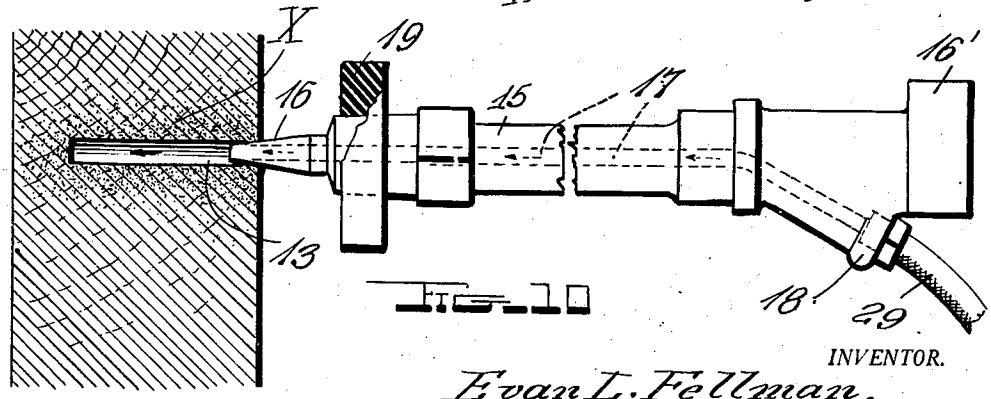


Fig. 10

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UNITED STATES PATENT OFFICE

2,135,391

TERMITE CONTROL

Evan L. Fellman, Memphis, Tenn., assignor to E. L. Bruce Company, Memphis, Tenn., a corporation of Delaware

Application July 3, 1936, Serial No. 88,888

5 Claims. (Cl. 21—15)

My invention relates to a method of treating buildings, in order to guard against damage by subterranean termites to the wooden parts of the superstructure and other cellulosic material contained therein. In my prior Patent No. 2,059,095, granted October 27, 1936, I have disclosed and claimed a method that has this same general end in view. The present invention is an improvement on the methods therein disclosed.

In order to effectually control the entrance and exit of termites to and from the wooden superstructure, it has been found necessary to insulate the superstructure from the ground and foundations by a layer of suitable toxicant, which when applied, is dissolved in one or more volatile solvents. When the solvent evaporates, the toxicant will be left behind.

The species of termites that do more than 90% of the damage to buildings in the temperate zones, are the subterranean species. They live in chambers below the frost line, and travel back and forth from their chambers to the wooden superstructure. By insulating or providing a lethal barrier to the possible passage of the termites to the wooden superstructure, it is possible to control their activities.

One of the objects of my invention is to provide a simple and efficient method of forming this insulating barrier in a building structure, by treating, without removal, the wood foundation members of the structure with a suitable penetrating liquid insecticide which is toxic to the termites.

More particularly, it has in view, providing thorough insulation for all wood parts, where they bear on the foundation walls or other non-wood supports. These include such wood parts as the sills, joists, plates and pillars, all of which are beneath the building and unexposed with reference to the outside of the building. All of them serve in one way or another to support the superstructure and all are in direct or very close contact with the foundation walls or other non-wood supports.

The method consists generally in boring a series of holes in said wood members $\frac{3}{16}$ to $\frac{3}{8}$ of an inch in diameter, to within about ½ inch of boring entirely through. These holes are bored into all wood members, which are in direct contact with a foundation wall or other non-wood support for the superstructure. The holes are usually bored 6 to 18 inches apart along the direction of the grain of the wood, except in the case of a hole bored nearest the end of the wood member, when it may be bored less than 6 inches from the end. The best results are obtained in placing the holes in the same longitudinal plane, with respect to the grain of the wood and close to the point of contact of the wood member, with the foundation support. Penetration of the area desired is better secured in the direction of the grain of the wood, than transversely thereof, or crosswise. In the case of pillars, when the grain is usually vertical, the borings are approximately in the same plane at right angles to the direction of the grain of the wood, and from the four sides. In this case, slight staggering or offsetting is necessary, so that the holes do not meet in the interior of the wood member.

Referring to the drawings for a more complete disclosure—

Fig. 1 is a transverse section of a fragment of a concrete wall, foundation plate and sill, on the line 1—1 of Fig. 2,

Fig. 2 is a side elevation of Fig. 1,

Fig. 3 is a transverse section of a fragment of a concrete wall and sill, on the line 3—3 of Fig. 4,

Fig. 4 is a side elevation of Fig. 3,

Fig. 5 is a view similar to Fig. 3, of the concrete wall and sill and showing a joist, in elevation,

Fig. 6 is a section on the line 6—6 of Fig. 5,

Fig. 7 is an elevation of a wood pillar set on a concrete base,

Fig. 8 is a section on the line 8—8 of Fig. 7,

Fig. 9 is a perspective view of the wood pillar set on the concrete base,

Fig. 10 shows the nozzle and the method of applying the insecticide under pressure into a bored wood member.

Referring to Figs. 1 and 2, 10 is the concrete foundation, on which rests the wooden plate 11 and on top of that rests the wooden sill 12 that carries the superstructure of the building. A series of holes 13, about $\frac{3}{16}$ of an inch in diameter, the centers of which are about ½ an inch from the foundation wall, is bored across the grain into the wood, from beneath the structure, leaving an unbored exterior portion 14 of about ½ an inch depth.

Into each one of these holes, is driven the metal nozzle 15, Fig. 10, that is provided with a tapered head 16, so that it fits tight in the hole 13, the nozzle being provided with the driving boss 16'. The nozzle is provided with a conduit 17, leading through the boss 18 for connection with a hose 29, through which the insecticide is forced into the wood under a pressure of 75–150 lbs. per square

inch. The point at which impregnation ceases is either refusal to take more or where there appears evidence on the wood surface of penetration to a point approximately one-half the distance to the next hole nearest the one being treated. The nozzle may be provided with a guard 19 to protect the operator from the back spray.

By this method, the vulnerable portion of the wood plate adjacent the concrete is impregnated with the insecticide.

In Figs. 3 and 4, the sill 12 rests directly on the concrete foundation 10 and accordingly the holes 13, will be similarly bored and treated as in Figs. 1 and 2.

When the joists 20 rest on the concrete foundation 10, a vertical hole 21 is bored in each joist about 2 inches from the foundation wall, the hole being of the same size, bored to the same depth, and treated the same as the holes 13.

When protecting a wood pillar 22, which rests on a concrete foundation 23, a series of holes 24 are bored, one from each side, in two parallel planes about 1 inch apart and the lower plane about 3 inches from the top of the base 23, the size, depth of boring, and treatment of the holes being otherwise the same as the holes 13, described above.

Various types of liquid insecticide may be used but one of the general type specified in my aforesaid patent, has been found satisfactory, in which B-naphthol or similar insecticide is dissolved in a volatile petroleum solvent. After the pressure treatment, the insecticide will permeate the wood and the wood will be impregnated throughout the vulnerable portions as indicated by the dotted portions X.

The purpose of the pressure treatment of the specified wood parts is not primarily to provide termite protection to the wood members so treated, but rather to provide the best type of insulation or barrier for the structure above these vital wood members, against the attack of subterranean termites from below. The theory of pressure treating the wood bearing on the foundation walls or supports, is that termites can go up through the foundation walls or supports, or over them, and upon encountering wood thoroughly treated with the chemical, will become discouraged and retreat.

Full impregnation of every cubic inch of the pressure treated wood members is not absolutely necessary. Certain portions of such members may not receive any of the chemical, but there always exists an unbroken or nearly unbroken layer of the toxicant running with the grain of the wood, so as to provide a "blanket" of protection through that wood. Furthermore, even though some of the adjacent wood might be untreated, experience shows that while termites may exist for a time in such wood only partially treated, ultimately they will encounter that portion of the wood which is treated and will at that time abandon further attack on the piece, usually dying or retreating to the ground and no longer threatening that particular structure.

I claim:

1. Method of termite control for a building structure containing wood and supported on a masonry or concrete foundation, comprising boring a hole in the wood member resting on the foundation, closely adjacent to its contacting surface with the foundation and then forcing insecticide into the hole under such pressure and for a period of time until substantially all the wood adjacent the hole and foundation is impregnated with the insecticide to thereby provide a poison barrier in the wood at the point of contact with the foundation to prevent passage of termites to and from the building and the ground.

2. Method of termite control for a building structure containing wood and supported on a masonry or concrete foundation wall, comprising boring a series of spaced holes in the wood member resting on the foundation wall and along the grain of the wood and closely adjacent to its contacting surface with the foundation wall and then forcing insecticide into the holes under such pressure and for a period of time as that substantially all the wood between the holes and adjacent the foundation wall is impregnated with the insecticide to thereby provide a poison barrier in the wood at the point of contact with the foundation wall to prevent passage of termites to and from the building structure.

3. The method of claim 1 in which the wood member is a joist with its end supported on the foundation and the hole is bored vertically in the joist.

4. The method of claim 2 in which the wood member is the plate or sill of the building and in which the holes are bored from the inside of the building to a depth slightly less than the depth of the sill.

5. Method of termite control for a building structure containing wood and supported on a masonry or concrete foundation, comprising boring a hole in the wood member resting on the foundation, closely adjacent to its contacting surface with the foundation, inserting a nozzle in the hole and maintaining a tight fit of the nozzle in the hole, forcing insecticide into the hole through the nozzle under pressure and for such a period of time until the wood refuses to absorb any more of the insecticide to thereby provide a poison barrier in the wood at the point of contact with the foundation to prevent passage of termites to and from the building and the ground.

EVAN L. FELLMAN.