

March 26, 1963

R. TATSCH
METHOD OF FORMING PASSAGES THROUGH CONCRETE
FLOORS, AND THE LIKE

3,082,504

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2 Sheets-Sheet 1

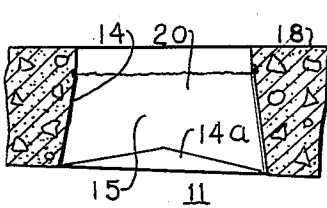


Fig. 4

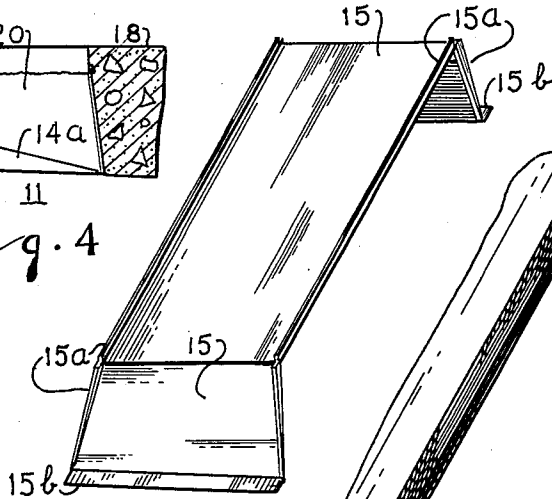


Fig. 3

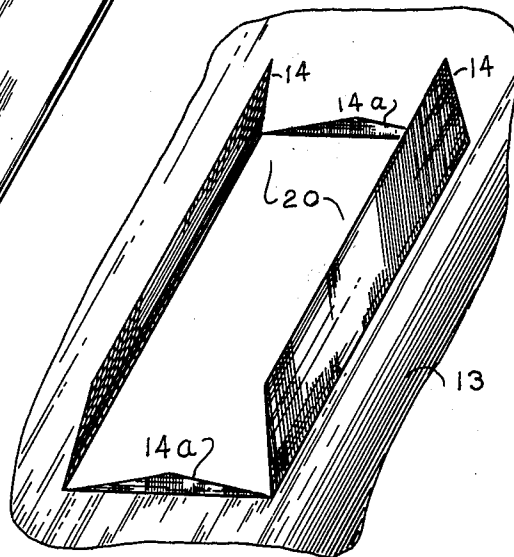


Fig. 2

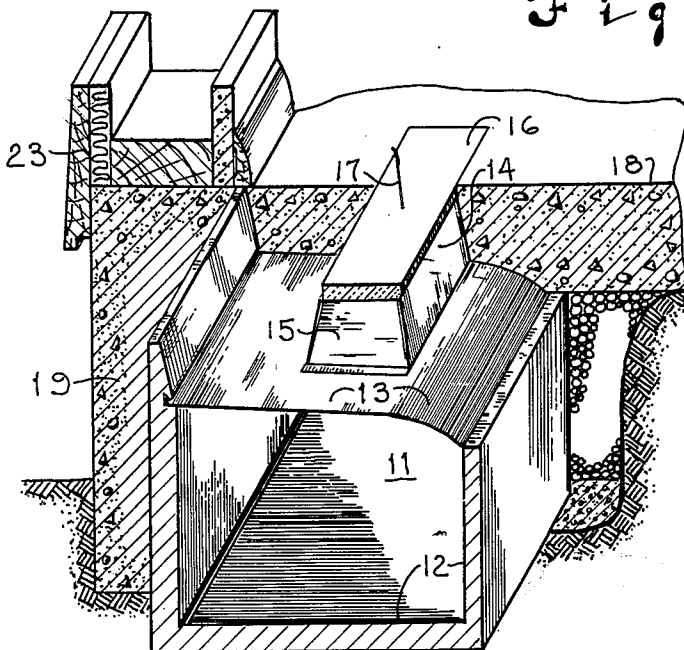


Fig. 1

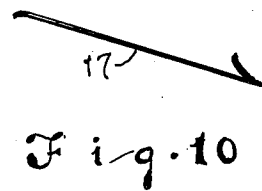


Fig. 10

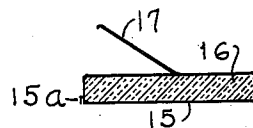


Fig. 9

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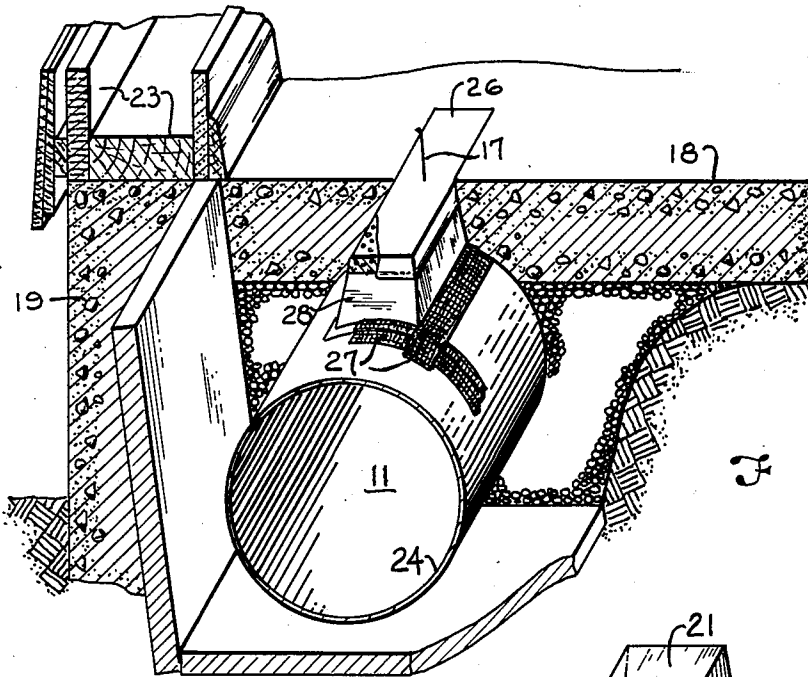


Fig. 5

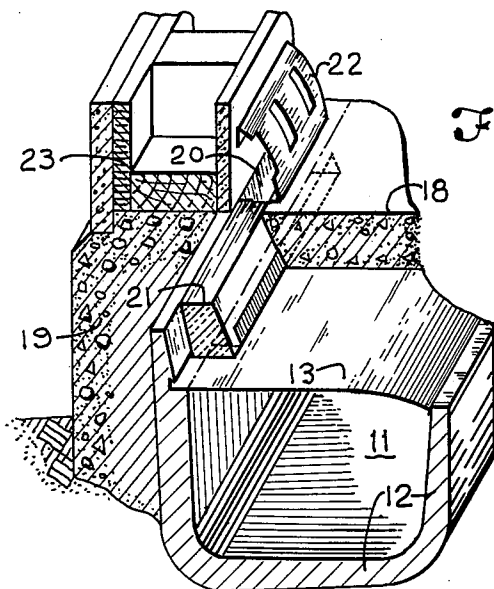


Fig. 8

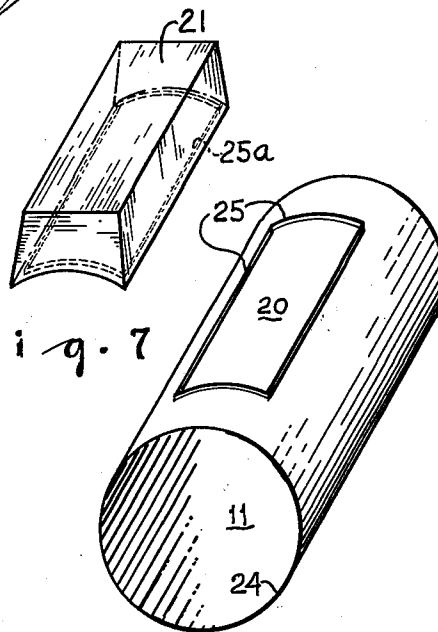


Fig. 7

Fig. 6

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METHOD OF FORMING PASSAGES THROUGH CONCRETE FLOORS, AND THE LIKE

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1 Claim. (Cl. 25-155)

The present invention relates to means and method in providing air passages through concrete floors which emanate from underfloor conduits.

Newly placed concrete floors are generally float trowelled and finish trowelled by a finishing machine having revolving blades. Rigid objects such as conventional air register boots, or a passage form constructed of metal extending from the conduit, through the concrete, to approximate floor level, are subject to damage by the revolving blades which may engage or snag them. In the float trowel operation high floor spots are worked into low areas which must be done while the surface is somewhat pliant. Inadvertently the machine may be maneuvered to an area too soft, and the machine weight will force the blades below floor level increasing the hazard of engaging imbedded objects.

Accordingly, an important objective of my invention is to alter the rigid passage means and provide, at least near the floor surface, a buffer to yield on impact when encountered by the machine in motion.

Another troublesome problem occurs whenever a passage defining means has not been extended quite to floor level, or when one is walked down, or otherwise forced down during the building operation. When this happens a covering of concrete may conceal the location of the passage making it difficult to find.

Thus, another object is to provide a flexible spring back element which emanates from the passage defining means and extends above the floor surface to indicate the proximity of the buried passage.

Still another object is to utilize the conduit wall material which must be displaced in providing a passage opening therein, by pattern cutting the surface and forming upturned flanges with the material, and securing a closure member to the flanges to provide a passage defining hood.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts through the same.

FIGURE 1 is a diagrammatic cutaway view of the air passage defining means emanating from a conduit imbedded in a concrete floor.

FIGURE 2 is an enlarged view of the conduit passage opening wherein the displaced material is formed into upturned flanges.

FIGURE 3 is a formed closure member which combines with the flanges in FIGURE 2 in providing a hood.

FIGURE 4 is an enlarged cross-sectional view through the passage means in FIGURE 1 after concrete placement, whereinafter the air passage has been rendered virtually unobstructed.

FIGURE 5 is an alternative diagrammatic cutaway view similar to FIGURE 1.

FIGURE 6 is another alternative view of a portion of conduit having an opening provided therein.

FIGURE 7 is a diagrammatic view of an impact block which in itself defines the concrete passage.

FIGURE 8 is a diagrammatic cutaway view of an air passage defining means directed to discharge adjacent to an exterior enclosure wall.

FIGURE 9 is a cross-sectional view of an inclined flexible spring back element secured to an impact block shown in FIGURE 1.

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FIGURE 10 is an elevation view of a typical flexible spring back element standing alone.

In the installed passage defining means shown in FIGURE 1 the conduit air passage is provided by insulated conduit wall 12 and closing panel member 13 wherein 13 provides upturned flanges 14 formed of material which was displaced in providing an opening therein and wherein a hood is formed by securing closure member 15 to flanges 14 which supports and has secured to it impact block 16 which terminates at floor level 18. Numeral 19 indicates exterior foundation wall supporting enclosure wall 23. Numeral 17 is a flexible spring back element. Impact block 16 could be constructed of a material having the characteristics of a foamed styrene of about a two pound per cubic foot density. This material has some resiliency, it cuts readily and yields to a thin edge, it will support a man's weight stepping on it. It does not fly to pieces on impact nor delaminate. Its surface is smooth and the material resists becoming filled with concrete thus facilitating its removal later.

Enlarged FIGURES 2 and 3 show the collective combination which provide the hood shown in FIGURE 1. Numeral 13 indicates the closing panel construction of metal wherein displaced material from starting passage opening 20 provides flanges 14 and 14a. Numeral 15 indicates the main body of the metal closure panel having upturned portions 15a which will be imposed over and press locked to flanges 14. Outturned parts 15b should preferably be secured to panel 13. The alternate technique of completely welding a closure to flanges obviously would provide an adequate hood also.

Enlarged FIGURE 4 shows air passage 20 ready for use after concrete placement wherein it has been rendered substantially unobstructed by having cut out and removed impact block 16 and the top portion of hood closure 15. Where practical, the passageway should remain closed as long as possible to keep out debris during the construction period.

In FIGURE 5 conduit wall material 24 might be of vitrified clay or cement asbestos transite wherein there is imposed over and extended beyond the opening in the conduit wall, a hood 28, which could be constructed of a deep drawn piece of metal, or be molded from a relatively thin walled organic fiber material which is treated to resist impairment by moisture, or, it could be constructed of a thin walled molded plastic. The hood thus provided could be secured to conduit wall 24 by means of an adhesive, or by securing it with a pressure sensitive tape shown in a cutaway view indicated by numeral 27, or by a combination of the two securing means. Impact block 26 could be provided by a material having the characteristics of a sponge rubber covered by a polyethylene vinyl film or the like, to prevent concrete from filling the open pores. Such a combination of materials would depress and afterwards spring back when encountered by revolving blades, and yet be easily removable later.

FIGURE 6 indicates another alternative conduit wall with engaging flanges 25 to be engaged and partially secured by groove 25a shown in FIGURE 7 formed and provided in impact block 21 which singly defines the passage through the floor and is later removed.

FIGURE 8 illustrates an alternative choice wherein 22 indicates a baseboard type air register which receives air supplied from passage 11 through passage means 20.

FIGURE 9 illustrates an impact block which has secured in it a flexible spring back element 17.

FIGURE 10 illustrates a flexible spring back element 17, which is constructed of a spring like steel wire of light gauge having at its securing end a point and a hook. Element 17 may, however, be secured in any manner de-

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sired to the upper area of any passage defining means. A flat ribbon type spring back element may be used if desired. The element, especially the exposed portion, may be colored by enameling it, or covering it with a thin plastic or rubber material to make it more easily detectable. These elements should be positioned at an inclined angle and extend above the floor surface facing in a direction that will permit the revolving floor finishing machine blades to press them down as they pass over rather than to have them snagged. This means directing the end opposite from the securing end to point outward and preferably slightly to the right viewed standing on the floor looking towards an exterior foundation wall for use with clockwise rotating finishing machines. Generally one element secured near the center of each air passage will suffice to locate the buried passage means.

It is understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention, or the scope of the subjoined claim.

Having thus described my invention I claim:

A method of constructing a floor, or the like, comprising a body of settable material which is to overlies a conduit, which is to have an upper surface to be finished, and which is to be provided with a passage extending upwardly therethrough from said conduit to said upper surface thereof, including the steps of: placing on said conduit a

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block of nonrigid, yieldable and resilient material having an upper surface substantially at the desired level of said upper surface of said body; pouring said body of settable material over said conduit and around said block with said upper surface of said body substantially flush with said upper surface of said block; subsequently finishing said upper surface of said body with a finishing tool which, if it strikes said block, will merely cause said block to yield temporarily, said block thereafter returning to its original configuration; and removing said block after setting of said body.

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