INVENT FOR CONCRETE STRUCTURES
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5 Claims. (Cl. 72—101)

This invention relates to inserts for concrete structures, the primary object being to provide an insert of a character utilizable in suspending a ceiling from a concrete floor slab.

More particularly the object of the invention is to provide an insert secureable in fixed relation in the form or mold by having a portion thereof attached to the form in such manner that, in removing the form, the attached member by the act of removal is brought outwardly from the surface of the concrete to position for attachment of a member thereto.

Many structures hereinafter in use for this same purpose are of a character to provide a part, for instance a wire loop, projecting from the concrete and a feature of my invention resides in the provision of a part in hinged relation with the remaining insertable part to be withdrawn to projected position for use by the act of removal of the form.

A further object and feature of the invention is to provide a wire device having foot portions of a character to hold the device in upright position when laid in a form preparatory to securing the same thereto and a part in hinged relation therewith normally having its base portion in the same plane as the foot portions of the wire and thus position the same at the surface of the concrete or plastic material to be poured in the form and therefore not so deeply embedded in the form as to prevent its ready removal in stripping the form from the concrete.

These and other objects and features of the invention are hereinafter more fully described and claimed, and the preferred form of construction of an insert embodying my invention is shown in the accompanying drawing in which—

Fig. 1 is an elevation of the insert shown as attached to the base portion of a form showing in dotted lines the relationship of the parts as the form is removed therefrom.

Fig. 2 is a cross section showing the insert in the concrete and with the hinged portion thereof projecting from the body for attachment of a ceiling supporting member.

Fig. 3 is a plan view of the insert.

The insert consists of a wire or bar 1 of any approved form in cross section comprising the two end or foot portions 2 and 3 positioned in the same plane and connected by upwardly and then downwardly turned portions providing loops 4 and 5 connected at the lower ends by a transverse portion 6, the plane of which is approximately at the plane occupied by the uppermost surfaces of the foot portions 2 and 3, as will be understood from Fig. 1. On this transverse portion 6 I provide a U member A comprising a flat strip of metal folded upon itself with the folded end engaging about the portion 6. One of the legs 7 of this U member has an extended portion 8 extending toward the other leg 8 at such point that the U member is in tight engagement with the loop 6.

The object of this arrangement is to provide a construction in which the U member will remain at practically any set position on the device and thus remain in a horizontal plane when turned to such plane in placing the device on the form indicated at 10 in Fig. 1. Both legs of this U member A are provided with a central aperture 11 to receive a nail 12 which is driven therethrough, preferably sufficiently driven home to cause the outer ends of the legs 7 and 8 to come to contact at the free ends, as shown in Fig. 1.

This device is to be placed on the bottom of the form whether it be a beam or a ceiling or other structure of plastic material and thus the loop portions 4 and 5 of the device lie in the body of the concrete or plastic material poured into the form. The loops are of sufficient length to extend to a considerable distance into the body of the plastic material and may be looped over reinforcing rods or wires if so desired.

After the concrete is set, the forms are removed and, as indicated by dotted lines in Fig. 1, the stripping of the form from the concrete, due to the nail 12 having been driven into the form, pulls the U member consisting of the legs 7 and 8 downwardly out of the body of the concrete 13 thus leaving a slight recess 14 in the exposed surface thereof as shown in Fig. 2.

The U member A is thus turned to projecting position and if in a ceiling or a downwardly projecting position. If the device is to be utilized as a ceiling insert, a suspending member 15 for the ceiling is provided as shown in Fig. 2 consisting of a channel member having its base inserted between the legs 7 and 8 and secured thereto by a bolt 16 passing through the aperture in which the nail 12 was previously positioned. The invention, however, is not confined to the particular use with a ceiling slab as shown, although such use is probably its more common use and it is further to be observed that any character of tie member may be utilized that is adapted to be secured to the U member A.

It will be noted that due to the U member lying at the surface of the concrete and not extending thereinto to any material distance, the
said U member is easily turned outwardly from the surface and that the recess remaining in the surface is very slight. If the device be used for suspending a ceiling as suggested in Fig. 2, such deformation of the concrete surface is not material. In other character of surfaces where uniform appearance is desired, the slight depressions produced by the withdrawal of the U member may be filled with plastic material and usually in such other instances the surface of the concrete receives a final coat in which case the slight depressions would naturally be filled therewith and the concrete provide a uniform surface.

From the foregoing description it is believed evident that my improved insert for structures formed of concrete or plastic material is of very simple form; is inexpensive in construction consisting of two simply formed parts not requiring any careful machine work, and that in this simple and inexpensive form I have provided an insert that is well anchored in the body of concrete and upon removal of the form the projection part thereof is withdrawn to position for attachment of a member to be supported or joined to the concrete member, and further that the various objects and features of the invention are attained by the construction shown and described.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letter Patent of the United States is:

1. An insert for plastic material shaped by means of a form which consists of a body portion adapted to be embedded in the concrete at the time it is placed in the form, and a part consisting of a flat metal strip bent upon itself to form a U in pivotal relation with the body, and also embedded in the concrete by means of which it may be secured to an inner wall of the form whereby, on removal of the form, the said part is pulled out of the plastic material to position permitting detachment from the form.

2. An insert for concrete or plastic material shaped by means of a form which consists of a body having an integral base adapted to support the same in a stable position on an inner wall of the form and a portion extending into the body of concrete as an anchor, and a part consisting of a flat strip of metal bent upon itself to form a U hinged thereto and securable to the surface of the form on which the insert is placed and also embedded in the concrete whereby upon removal of the form, the said part and its securing means is withdrawn from the surface of the concrete to position for the securing of another element thereto.

3. An insert for concrete or the like shaped by means of a form or mold consisting of a body formed with parallel foot portions and an intermediate loop like part extending into the body of the concrete and including a transverse portion extending to a plane slightly above the foot portions, a member having spaced legs hinged to said transverse portion to lie on the same surface of the form supporting the foot portions and likewise embedded in the concrete, said legs having aligned apertures for receiving a nail in securing the insert to the inner wall of the form whereby, upon removal of the form, the said hinged element is forcibly withdrawn from its position in the concrete to a projecting position to receive an element to be supported.

4. An insert for concrete or like material shaped by means of a wood form which consists of a body formed of a metal rod like element having terminal foot portions bent to parallel relation and an intermediate connecting portion extending upwardly and thence downwardly terminating in a connecting transverse portion approximately centrally between the foot portions, a metal element hinged securely to the transverse portion and embedded in the concrete, said hinged metal element being adapted to be secured to the 100 surface of the form on which the foot portions rest and similarly embedded in the concrete whereby, after the concrete has been poured and set, the removal of the form draws the hinged metal element from the concrete to provide a 105 projecting part adapted for attachment of a tie member.

5. An insert for concrete or like material for use in the suspension of a member consisting of a body formed of a metal rod like element, the two end portions thereof lying in the same plane and the intermediate portion being upwardly and thence downwardly relative to each foot portion and connected by a transverse portion terminating in a plane just above the plane of the said foot portions, a flat strip of metal bent to provide a U engaging at a folded end over the said transverse portion, said metal strip having a part thereof extruded to prevent accidental removal of the U portion from said transverse portion, the parts being so arranged that one leg of the U occupies approximately the same plane as the said foot portions, said legs of the U having aligned apertures for the reception of a nail or the like to secure the same to the portion of the 125 form or mold supporting the said foot portions whereby on removal of the form, the said U member is stripped from the concrete and turned to position to receive a member to be supported thereby, said member having an aperture for alignment with the aperture of the said legs, and a bolt extending through the leg apertures and the apertures of the suspended element.

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