

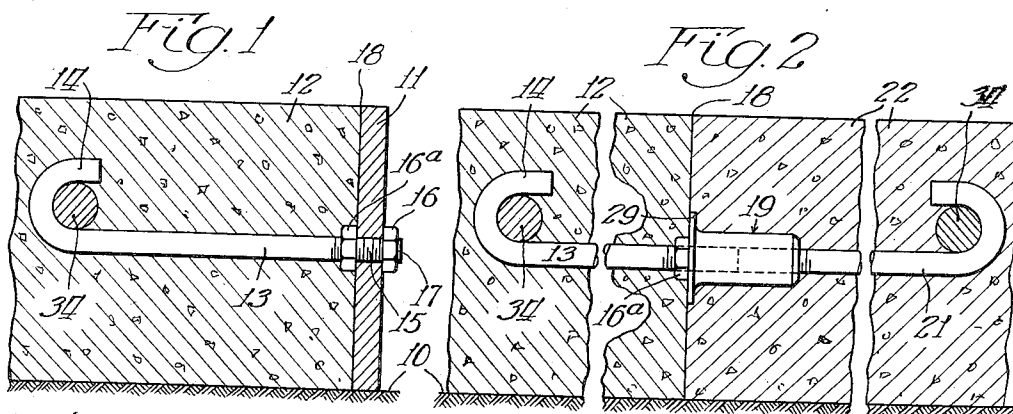
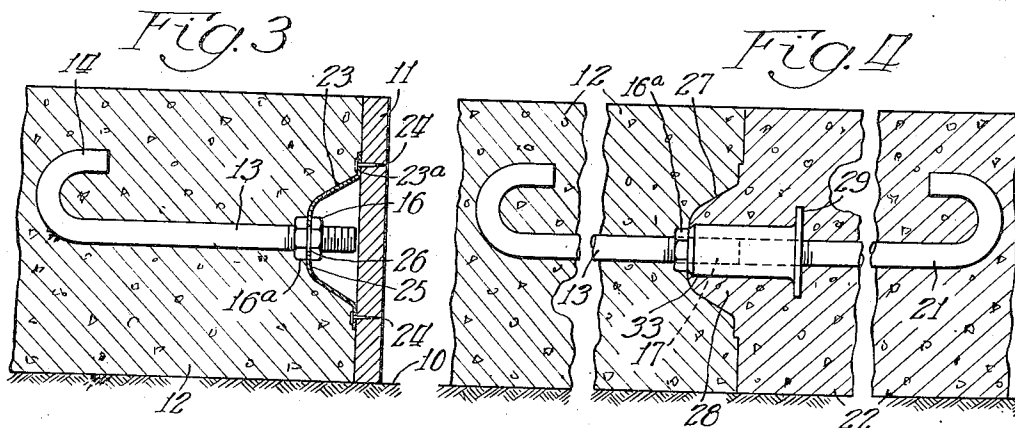
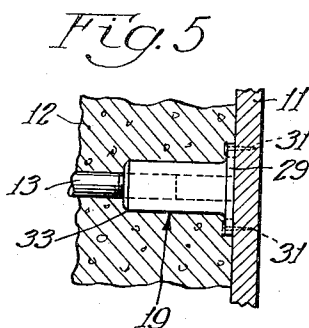
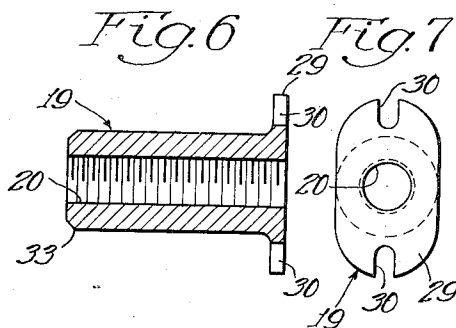
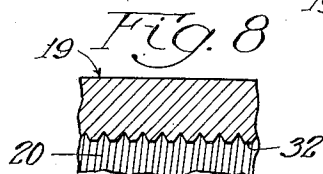
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ROAD ANCHORING MEANS

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ROAD ANCHORING MEANS

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2 Claims. (Cl. 94-4)

This invention relates to road anchoring means of the general class referred to in patent to Trester No. 1,471,074 of October 16, 1923, wherein an anchor member is embedded in an initially soft hardenable material such as concrete or the like while the material is initially soft, the member being held by a form while the concrete is poured around it, with one end of the member adjacent an edge of the concrete so that after the concrete hardens the form may be removed and at a later time another body of concrete may be poured adjacent to the first body, another anchor member either integral with or separable from the first anchor member being engaged with the first anchor member and the new concrete being poured therearound whereby the edges of the concrete bodies are in abutment and the said anchoring means is imbedded within said bodies to anchor the bodies together.

One objection to the conventional construction of the type referred to in Trester is that the anchor is not readily adaptable for installation on the job while the original body of concrete is being poured to form the main portion of the road or the like; and furthermore, Trester's anchor member is not of a type which can be bought on the market as an ordinary article of commerce, both of these objectionable features in devices of the type shown by Trester enhancing the cost both of material and installation which the present invention aims to avoid.

It is of course old, as will be seen from such patents as Ackerman No. 1,416,433 of May 16, 1922, to embed an anchoring device in a body of initially soft hardenable material by means of a form which holds the anchoring device while the material is poured around it and thereafter removing the form, leaving the anchor member accessible to the insertion of a screw bolt, for example, the anchor member having a threaded socket for receiving the screw bolt, after which other initially soft hardenable material may be poured about the screw bolt or protruding portion of the anchor member, as shown in the patent to Trester already referred to.

The present invention, however, discloses a highly useful and novel improvement over the disclosures of both Trester and Ackerman, in that an ordinary screw bolt, preferably of the "J" or hook type, may be used for the anchor member, such screw bolts being available on the market as ordinary articles of commerce and therefore being very low in cost. Such bolts have the conventional threaded shanks which, by means of the present invention, may be aligned end to end and operatively engaged, by means of the novel separable adapter which the present invention includes, to thus be anchored in the abutting bodies of concrete and to anchor these bodies se-

curely together, affording an extremely economical and efficient road anchoring means.

Other objects and advantages will be apparent from the following description, taken together with the accompanying drawing, in which—

Figure 1 is a vertical sectional view of a fragment of concrete roadway or the like with one portion of the anchoring means embedded therein, and showing a conventional method of supporting the anchoring means during pouring of the concrete;

Figure 2 is a somewhat similar view but showing the form removed and another slab of concrete poured adjacent to the first slab, with the remainder of the anchoring means embedded therein;

Figure 3 is a view somewhat similar to Fig. 1 but of a modified embodiment of the invention;

Figure 4 is a view somewhat similar to Fig. 2 but corresponding to Fig. 3;

Figure 5 shows a still further modification;

Figure 6 is an enlarged sectional axial view of my improved adaptor;

Figure 7 is an end view of the same; and

Figure 8 shows the threads thereof still further enlarged.

Referring in detail to the figures of the drawing, the line 10 may indicate the top surface of the usual foundation for a roadway or the like. As my invention is most commonly used in connection with the pouring of adjoining slabs of concrete with the joint between the slabs running parallel with the roadway, the form 11 may represent a wooden form supported on the foundation 10 and extending parallel with the roadway, for example along a median longitudinal line thereof. Suitable means (not shown) may be provided for maintaining the form 11 in upright position while the first concrete slab 12 is being poured and while it is retained by the form 11 at one side thereof. Before pouring of the slab 12, the form 11 has secured at intervals therealong first portions of the anchoring means such as the conventional hook-bolt 13 having its hook end 14 farthest from the form 11 and with its outer shank end 17 (threaded as at 15) passing through the form and secured thereto by the nuts 16, 16a which temporarily clamp the bolt to the form, thus supporting the bolt in position to have the concrete 12 poured about it. Thereupon, after hardening of the concrete, the outer nut 16 is screwed off of the bolt, and the form 11 removed, leaving the threaded end 17 of the bolt projecting beyond the edge 18 of the concrete.

When it is desired to widen the road by pouring another slab of concrete parallel with the slab 12, either at the time when the road is first constructed or at a considerably later time, the projecting end 17 of the bolt 13 may have screwed thereon my novel adapter which is here shown

in the form of a metallic socket piece 19 having the longitudinally extending internally threaded bore 20 which is of diameter to thread onto the conventional screw-threads 15 of the hook bolt 13, as shown in Fig. 2. The inner nut 16a may be left on the bolt embedded in the concrete 12.

When the socket piece 19 is screwed onto the bolt as shown in Fig. 2 it thereupon becomes a support for the remainder of the anchor means as shown by the second conventional hook-bolt 21 which is exactly like the bolt 13 and is screwed into the outer end of the socket piece 19, the hook-bolts thus having their threaded ends end to end within the socket piece. Thereupon the second slab of concrete 22 may be poured to abut the edge 18 of the first slab which becomes the meeting face of the two slabs, with the bolt 13 embedded in one of the slabs 12 and the bolt 21 embedded in the other slab 22, the bolts being operatively interengaged by means of the separable socket piece 19 so that the bolts serve as economical and effective anchoring means securing the slabs 12 and 22 together.

If it is desired to have portions of the concrete itself interlock, the bolt 13 may be supported on the form 11 by a cup-shaped stamping 23 (as shown in Fig. 3) the flanged periphery 23a of which is secured to the inner face of the form 11 by nails 24 and the inwardly offset portion 25 of which is perforated as at 26 to have the threaded end of the bolt passed therethrough and clamped thereto by the nuts 16, 16a. In this instance the bolt does not need to pass through the form 11.

In accordance with the Fig. 3 modification, after the concrete 12 is poured and has set, the form 11 is pulled away from the nails 24 and the nut 16 removed from the bolt. Thereupon the stamping 23 may be also removed to be used again, leaving the recess 27 in the edge of the concrete 12 with the threaded end 17 of the bolt exposed within this recess. Then the socket piece is screwed onto the bolt and the bolt 21 is secured into the socket piece as already described, and the second slab of concrete 22 poured about the socket piece and bolt. In this instance the interlocking tongue 28 of the concrete 22 fills the recess 27, and affording a tongue-and-groove formation with the socket piece in the middle.

As shown in Fig. 5 the socket piece 19 may be initially embedded in the first slab of concrete 12, the socket piece in this instance acting as a support for the bolt 13 on the form 11. For this purpose, I have shown the socket piece 19 formed with a flange 29 at one end in the periphery of which are one or more, in this instance two, notches 30 serving as nail holes for the nails 31, which pass into the form 11.

In some uses, it may be desirable to have the bolt 21 without threads so that it may move longitudinally in the socket piece to compensate for expansion or contraction of the concrete and for this purpose I desirably form the threads 32 of the bolt 20 of the socket piece in truncated form, as shown in Fig. 8. The truncated threads afford substantially a continuous bearing surface for such an unthreaded bolt or pin.

A further advantage of the separable socket piece is that it is reversible so that the flange 29 may be at either end. Thus, as in Fig. 2, the flange provides an effective stop by abutment with

the edge 18 of the concrete, while, as in Fig. 4, the reduced end 33 of the socket piece may be placed toward the meeting forces of the concrete so as to suit the shape of the recess 27 and avoid interference with the flange 29.

It will be perceived that by making the threads truncated, while the bore 20 is still of the same diameter, a bolt of the diameter of the bolts 13 and 21 but unthreaded may be snugly received therein, as well as similarly threaded bolts. This, in addition to the flanged portion 21 at one end only of the socket piece, greatly enhances its adaptability and usefulness for the purposes described.

While the hook-bolts shown substantially enhance the effective anchor between the adjoining slabs of concrete, a further advantage of the hook-bolt is that it may be hooked about a reinforcement such as the rod 34 which is also embedded in the concrete running parallel with the edge thereof, as is common in conventional road-building practice.

Having described my invention, I claim:

1. In road anchoring means of the class described, the combination with an integral initially plastic body, of an exteriorly screw-threaded anchor member for embedment in said body and a separable adaptor having a screw-threaded bore extending entirely therethrough for partially overlapping screw-threaded attachment of one end of said adaptor to said anchor member, both member and adaptor being imbedded in the same integral plastic body and being intended to be secured to another similar member in an adjacent initially plastic body also by partially overlapping screw-threaded attachment of the other end of said adaptor, said adaptor having at one end only a flanged portion, whereby the adaptor may be selectively reversed on said anchor member, with the adaptor serving as an operative continuation of said anchor member and the position of said flanged portion with respect thereto being either at one end or intermedially of said anchor member and adaptor jointly, as and for the purpose described.

2. In road anchoring means of the class described, the combination with an integral initially plastic body having a projecting integral tongue portion for interlocking with a groove in an adjacent initially plastic body, of a rod-like anchor member for embedment in said body and a separable adaptor having a bore extending entirely therethrough for partially overlapping telescoping attachment of one end of said adaptor to said anchor member, both member and adaptor being embedded in the same first mentioned integral plastic body and being intended to be secured to another similar member in said adjacent initially plastic body, also by partially overlapping telescoping attachment of the other end of said adaptor, said adaptor having at one end only a flanged portion, whereby the adaptor may be selectively placed on said anchor member with the adaptor serving as an operative continuation of said anchor member and with the flanged portion of the adaptor located intermedially of said anchor member and adaptor jointly and the unflanged portion of said adaptor projecting into said tongue, as and for the purpose described.

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