

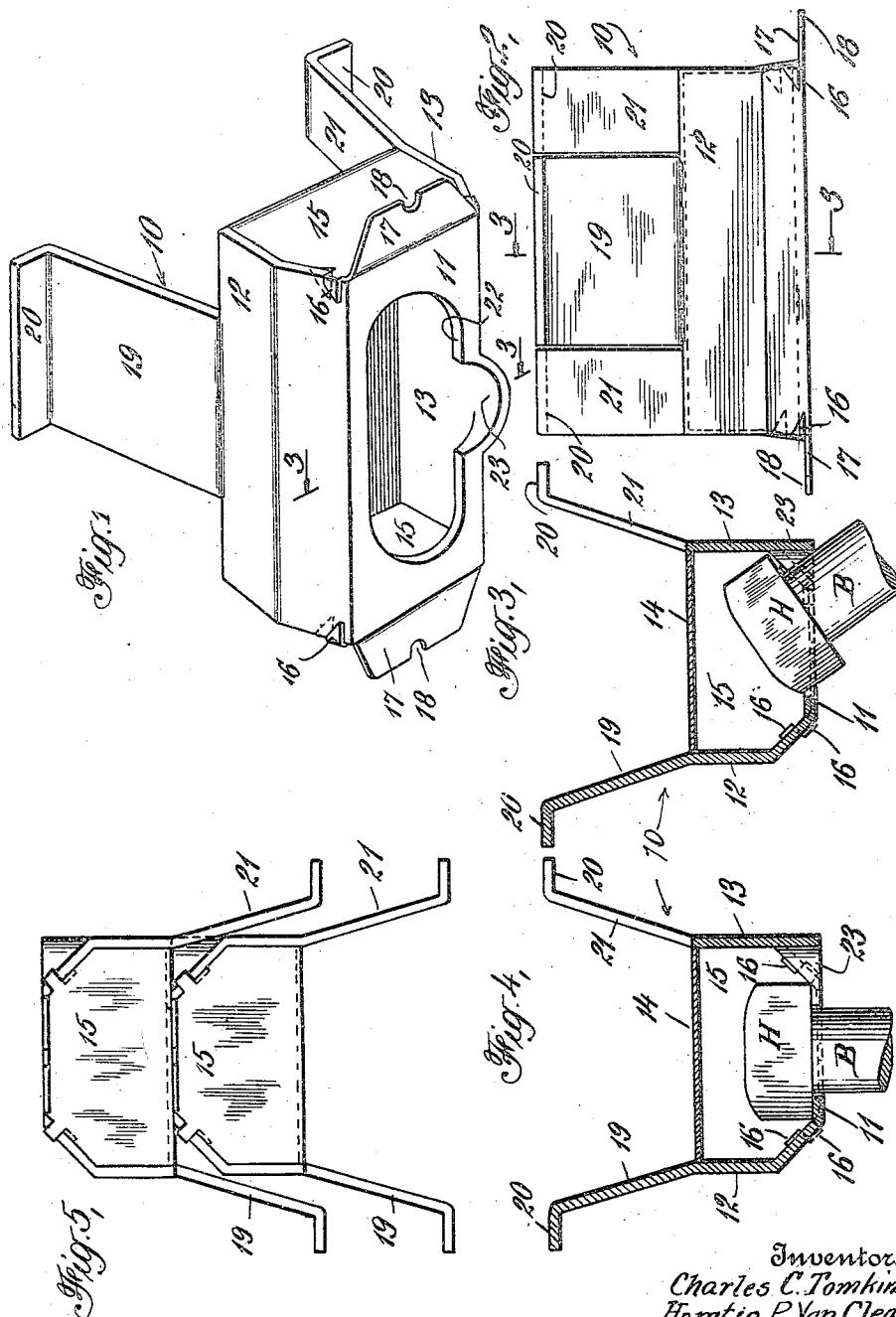
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CONCRETE INSERT

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UNITED STATES PATENT OFFICE.

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CONCRETE INSERT.

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To all whom it may concern:

Be it known that we, CHARLES C. TOMKINSON, a citizen of the United States, and a resident of Plainfield, county of Union, and State of New Jersey, and HORATIO P. VAN CLEVE, a citizen of the United States, and a resident of Cranford, county of Union, and State of New Jersey, have invented certain new and useful Improvements in Concrete Inserts, of which the following is a specification.

This invention relates to concrete inserts adapted to be imbedded in concrete structures to form bolt anchorages and it is an object of the invention to improve upon devices of this character.

Briefly stated the invention consists in the provision of a concrete insert of stirrup-like form having means at its bottom for removably and adjustably securing the bolt. The bolt securing means comprises a compartment formed by a roof or barrier plate cooperating with the sides and ends of the stirrup. The bottom or face plate of the stirrup is provided with a longitudinal slot having at one of its sides a notch. This notch provides a seat for the shank of the bolt immediately below the head thereof, the bolt being rocked or tilted on this seat to swing the head of the bolt up into the compartment. The slot is of such width that when the bolt is perpendicular to the face plate, withdrawal of the same is effectually prevented.

Other objects and features of novelty of the invention will appear from the detailed description taken in connection with the accompanying drawings forming part of this specification.

Referring to the drawings, Fig. 1 is a perspective view of a concrete insert embodying the invention.

Fig. 2 is a side elevation of the same viewed from the left in Fig. 1.

Fig. 3 is an end elevation in section taken on the plane of line 3—3 of Figs. 1 and 2 showing the manner of initially inclining the bolt to permit the head to be rocked into the compartment.

Fig. 4 is a view similar to Fig. 3 showing the bolt head within the compartment with the bolt in normal or perpendicular position.

Fig. 5 is an end elevation of two inserts showing the same as "nested" for shipment.

Like characters of reference designate corresponding parts in all the figures of the drawings.

The body or frame of the insert for convenience of description may be said to consist of a stirrup, designated generally by 10. This stirrup comprises a bottom face plate 11 and side walls 12 and 13 rising therefrom. Cooperating with the side walls is a roof plate 14 having depending angular extensions 15 which cooperate with the end edges of the face plate 11 and walls 12 and 13 to form a closed compartment. This plate 14 is maintained in fixed relation to the stirrup by any suitable means but preferably by tongues 16 extending from the ends 15 and bent over into contact with the walls of the stirrup as shown.

The depending ends 15 of the plate 14 are provided with angular extensions 17 which lie in a plane substantially flush with the face plate 11. These extensions are provided with notches 18 for the reception of nails or the like for securing the inserts in a fixed position with respect to the molds while the concrete is being poured.

Extending from the wall 12 at an angle thereto is a web 19 having a flange 20 at its end. Extending from the wall 13 at an angle thereto is a pair of webs 21 having flanges 20 at their ends. These last-named webs are each of a width substantially equal to the distance from the web 19 to the adjacent end of the wall 12. This arrangement of the webs 19 and 21 makes possible the utilization without waste of a substantially rectangular piece of sheet metal in forming the frame or body 10 of the insert, the frame being formed or stamped out from a strip of sheet metal. This strip is provided with two longitudinal and parallel slits, the material between the slits forming the web 19 and the material on either side thereof forming the webs 21 of the succeeding frame.

The face plate 11 of the insert is provided with a longitudinally extending slot 22 to provide for the adjustable securement of the bolt with respect to the insert. One of the sides of this slot is provided with re-

cess 23 to enable the bolt head to be inserted in the compartment. The bolt head H is entered in the compartment by placing the shank B of the bolt, immediately below the head thereof, in the recess 22 and then rocking the same on the edge thereof until the bolt is in normal or upright position whereupon the bolt head will have been entered into the compartment or behind the slot. This arrangement of entering the bolt head into the compartment is one of the important features of our invention.

The webs 19 and 21 inasmuch as they are inclined to their respective walls flare outwardly. This arrangement is particularly desirable not only because the imbedment of the insert in the concrete is made more secure but also because it permits the inserts to be nested for shipment as shown in Fig. 5.

While the drawing shows the insert as having three webs above the compartment, the invention may be practised by providing the device with a different number of webs. We intend no limitations other than those imposed by the appended claims.

What we claim is:

1. In a concrete insert, the combination with the face plate and side walls thereof, of a slot between the ends and sides of the face plate, means spaced from the face plate and including end members cooperating with the side walls and disposed between the end edges thereof and cooperating with the face plate to form a barrier to the entrance of concrete into the chamber so formed, and means positively securing the barrier means to the body of the insert against relative movement with respect thereto.

2. In a concrete insert, the combination with the face plate and side walls thereof, of a slot between the ends and sides of the

face plate, means spaced from the face plate and cooperating with the side walls and the end edges thereof and of the face plate to form a barrier to the entrance of concrete into the chamber so formed, and tongues projecting from the barrier member and bent over onto the body of the insert.

3. In a sheet metal concrete insert, the combination with the face plate and side walls thereof, of a slot between the ends and sides of the face plate, a plurality of web members projecting from the ends of one side wall, and a third web projecting from the other side wall intermediate the ends thereof.

4. In a sheet metal concrete insert, the combination with the face plate and side walls thereof of a slot between the ends and sides of the face plate, a web member projecting from one side wall intermediate the ends thereof, and two other webs spaced apart a distance equal to the width of the other web and projecting from the other side wall at points to one side of the middle thereof.

5. A sheet metal concrete insert comprising a face plate having an elongated slot with substantially parallel side edges and a laterally extending recess in one of the side edges adapted to receive the shank of the bolt.

6. A sheet metal concrete insert comprising in combination, a face plate, and side walls, said plate having an elongated slot with substantially parallel side edges between the ends and sides thereof and a laterally extending notch in one edge of the slot intermediate the ends thereof and extending toward the adjacent side wall.

In witness whereof, we have hereunto set our hands.

CHARLES C. TOMKINSON.
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