J. K. FISHER.

CONCRETE INSERT.

APPLICATION FILED APR. 3, 1920.

1,405,994. Patented Feb. 7, 1922.

Fig. 1.

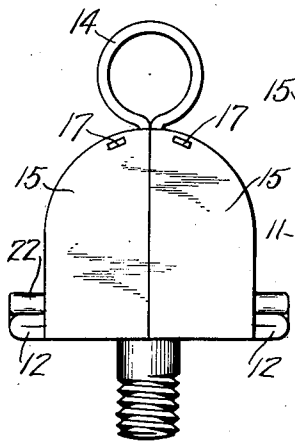


Fig. 2.

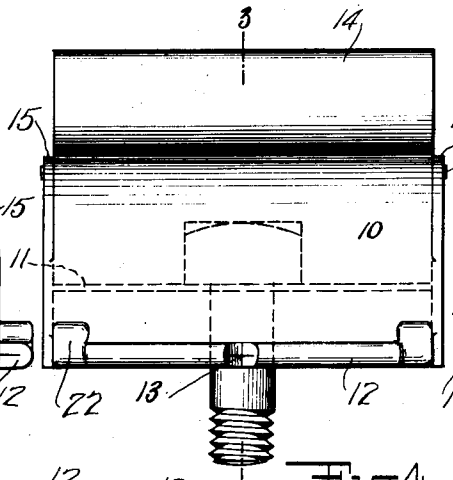


Fig. 3.

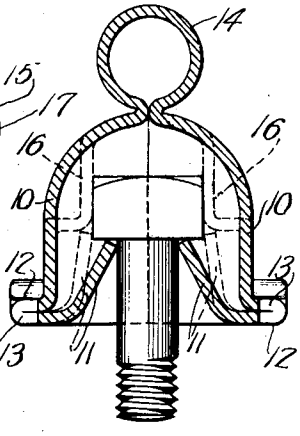


Fig. 4.

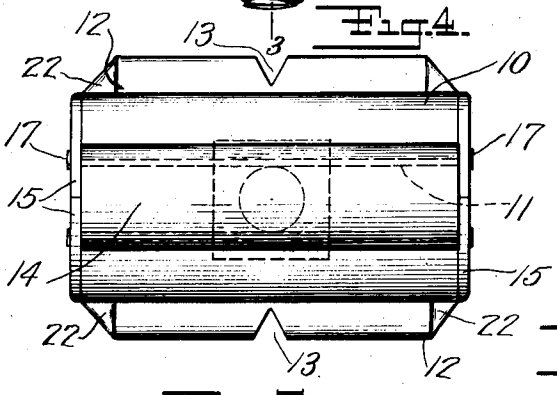


Fig. 5.

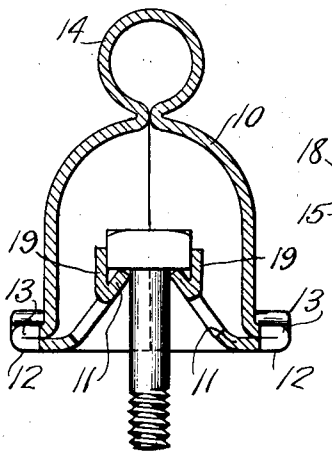


Fig. 7.

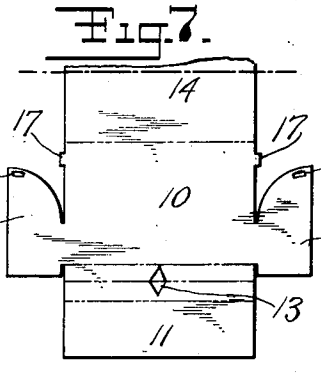
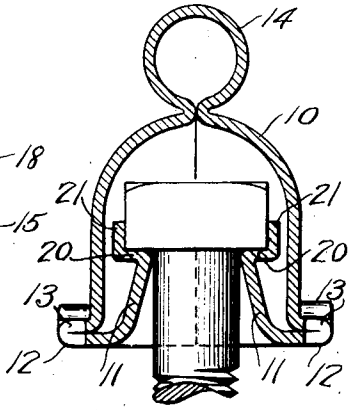


Fig. 6.



Inventor

Joseph K. Fisher

By his Attorney

E. W. Marshall

UNITED STATES PATENT OFFICE.

JOSEPH K. FISHER, OF SANTA MONICA, CALIFORNIA, ASSIGNOR TO J. EDWARD OGDEN, OF MOUNTAINVILLE, NEW YORK.

CONCRETE INSERT.

1,405,994. Specification of Letters Patent. Patented Feb. 7, 1922.

Application filed April 3, 1920. Serial No. 370,957.

To all whom it may concern:

Be it known that I, JOSEPH K. FISHER, a citizen of the United States, and a resident of Santa Monica, Los Angeles County, and State of California, have invented certain new and useful Improvements in Concrete Inserts, of which the following is a specification.

This invention relates to the class of devices ordinarily known as "concrete inserts" and the objects of the invention are to provide a device of this character which will be of simple, rugged, practical and relatively inexpensive construction, which will form a strong and secure support, which will accommodate bolts of different sizes and which will permit adjustment of the inserted bolts practically the full length of the insert.

In the accomplishment of these objects I have devised a number of novel structural features, combinations and arrangements of parts, as will appear in the course of the following specification, which is to be read in conjunction with the drawing accompanying and forming a part thereof and in which I have illustrated the invention embodied in but one of its simple and most practical forms.

Figures 1 and 2 in the drawing referred to are respectively end and side views of a form of the invention illustrating a bolt engaged therein.

Figure 3 is a vertical sectional view on substantially the plane of line 3—3 of Figure 2.

Figure 4 is a plan view of this device.

Figures 5 and 6 are sectional views illustrating the use of different sizes of bolts with the invention.

Figure 7 is a plan view of slightly more than half of one form of sheet metal blank for making up the device.

Like reference characters refer to corresponding parts throughout the several views.

The device is in the form of a box or casing having spaced sides 10 and provided with extensions or projections 11 from said sides, forming flanges for supporting the inserted bolthead.

In the preferred form of the invention the insert is made up of sheet metal having sufficient spring quality to enable the supporting flanges 11 to yield as the bolt is inserted and to then snap beneath the head of the bolt so as to support the same, as indicated in dotted and full lines in Figure 3.

The insert is reinforced in the illustration by providing the spaced sides thereof with folded or doubled-over edge portions 12 which are shown as extended laterally from the sides of the insert to provide relatively wide base portions for supporting the insert on the form. These base flanges are shown as notched or recessed at 13 to receive nails or other fastenings which may be employed for securing the inserts in the desired locations on the forms.

At the top of the casing the sheet metal is preferably rolled into the form of an eye, such as indicated at 14, to receive a rod or other anchorage.

The ends of the insert are preferably closed to prevent the admission of the fluid concrete to the interior of the same. These closed ends are provided in the illustration by end members 15 indicated in the form of flaps attached to the side members 10 (Fig. 7), shaped to suit a cross sectional design of the insert and adapted, when the insert is set up, to be bent in or down so as to close the space between the sides, as indicated best in Figure 1. In thus closing the ends of the insert the supporting eyes 14 are left open, as shown, so as not to interfere with the engagement of the insert with a suitable anchorage or hanger.

The inserts may be made up so that the spring flanges for supporting the bolthead will substantially close the mouth of the insert, so as to effectually guard against the entrance of wet concrete at this point. The bolts or other supports are engaged in the insert by simply forcing the spring lips or flanges inward, as indicated in dotted lines in Figure 3 until the head or shouldered portion of the bolt or nut on the bolt passes beyond the edges of the flanges, whereupon such flanges will spring together beneath the head of the bolt and thereafter serve as supporting rails for the bolt and along which the bolt may be adjusted, substantially the full length of the insert. These spring lips will yield more or less in accordance with the size and shape of the bolt.

For instance, for a small bolt like that indicated in Figure 5, the lips need yield only a relatively slight amount, while for a large

size bolt, such as indicated in Figure 6, the lips may be required to yield to their fullest extent.

The insert may be provided with suitable means for holding the bolthead against turning therein, for instance, by providing one or both of the sides with an indented portion or portions to engage the bolthead, as indicated at 16 in Figure 6.

If desired also, the insert may be held in its assembled shape by means of interfitting lugs and openings on the side and end members, as indicated at 17 and 18.

Other possible methods of holding the bolthead against turning, without interrupting the continuity of the supporting flanges are illustrated in Figures 5 and 6. In the first mentioned of these views, tongues or lugs 19 are cut out of the spring flanges below the upper edges thereof and are bent upward so as to project above the upper edges of the flanges into position to engage and hold the bolthead. The lugs on the opposed supporting flanges may be staggered so as to hold the bolthead at practically any point in the length of the insert.

In Figure 6 the supporting flanges are shown provided with seats 20 forming the supporting rails for the bolthead and with laterally offset and upwardly projecting flanges 21 to stand at the side of the inserted bolthead. This construction requires somewhat more metal but provides a very secure support for the bolthead and effective means for holding the bolthead against turning.

The insert is reinforced and made somewhat more rigid by turning back the corners of the base flanges, as indicated at 22. This construction also avoids the sharp corners which are objectionable in the preliminary handling of the device.

It will be understood that the terms which I have employed herein are used in a descriptive rather than in a limiting sense. For instance, it will be obvious that the nut end of the bolt might be engaged in the insert in which event the nut would operate as the equivalent of the head of the bolt in the above description. It will also be understood that changes and modifications may be made without departure from the true spirit and scope of the invention as herein described and claimed.

What I claim is:

1. A concrete insert comprising a sheet metal box having spaced sides provided with doubled portions extended outwardly to form widened supports for the box and terminating in flanges introverted into the box and forming opposed bolthead-supporting rails yieldable back toward the sides from which they extend to accommodate between them bolt shanks of different sizes.

2. A concrete insert comprising a sheet metal box having spaced sides terminating in flanges introverted into the box and forming opposed bolthead-supporting rails yieldable back toward the sides from which they extend to accommodate between them bolt shanks of different sizes, said sides being connected by an integral portion folded to form an eye for the reception of a hanger or anchorage.

3. A concrete insert comprising a sheet metal box having spaced sides terminating in flanges introverted into the box and forming opposed bolthead-supporting rails yieldable back toward the sides from which they extend to accommodate between them bolt shanks of different sizes, said sides being connected by an integral portion folded to form an eye for the reception of a hanger or anchorage and end members attached to the sides and bent down to close the space between the sides but below the eye aforesaid.

4. A sheet metal insert having opposed inwardly extended flanges yieldable into the insert to enable the insertion of a bolthead therein, and means for holding the bolthead against rotation.

5. A sheet metal insert having opposed inwardly extended flanges for supporting a bolthead and provided with a side having a lateral offset adapted to engage a side of said bolthead and hold said bolthead against rotation.

6. A concrete insert comprising a box having spaced sides provided with laterally extending base flanges and with opposed bolthead-supporting rails extending from said sides toward each other yieldable into the chamber to enable the insertion of a bolthead, and back against the shank of a bolt, the combined width of said flanges together with the diameter of the shank being greater than the space between said sides.

In witness whereof, I have hereunto set my hand this 31st day of March, 1920.

JOSEPH K. FISHER.

Witness:
I. B. MOORE.