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C. C. TOMKINSON

1,921,794

EXPANSION SHIELD OR ANCHOR

Filed Nov. 14, 1931

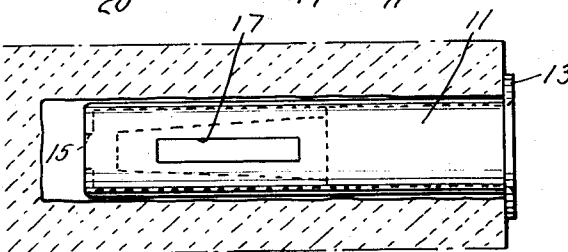
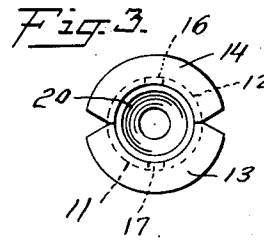
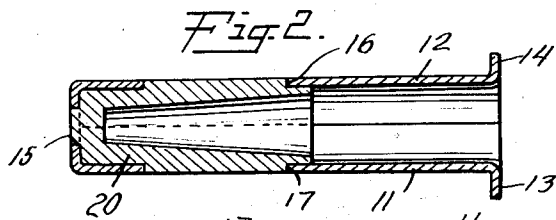
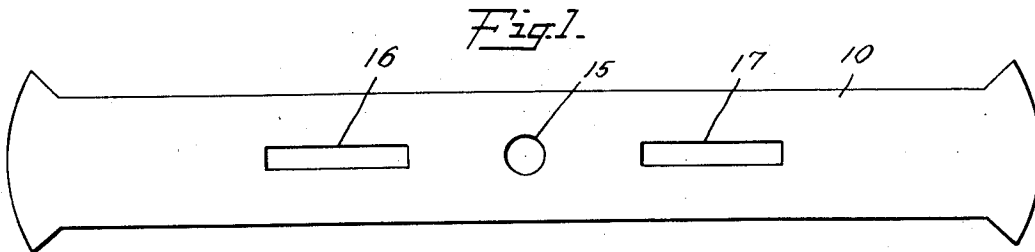


Fig. 4.

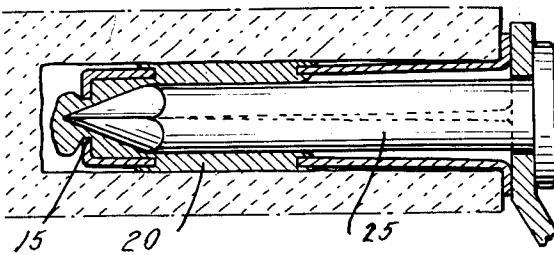
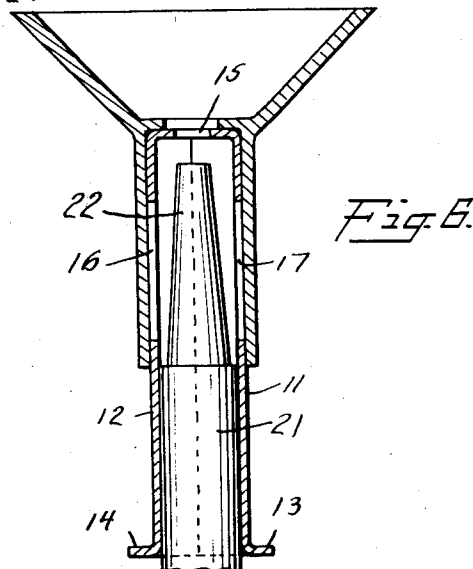


Fig. 5.



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1,921,794

EXPANSION SHIELD OR ANCHOR

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Application November 14, 1931

Serial No. 574,953

6 Claims. (Cl. 85—2.4)

This invention relates to improvements in expansion shields or anchors of the character used for obtaining anchorage in walls of brick, stone or cementitious material not adapted to receive and retain a bolt, nail or like member.

The invention has for its salient object to provide a simple and inexpensive expansion shield that will firmly grip the material within which it is expanded.

Another object of the invention is to provide an expansion shield adapted for expansion by a driven expanding member.

Further objects of the invention will appear from the following specification, taken in connection with the drawing which forms a part of this application, and in which

Fig. 1 is a plan view of a blank used to form an expansion shield;

Fig. 2 is a sectional elevation of the shield constructed in accordance with the invention;

Fig. 3 is an end elevation of the outer end of the shield shown in Fig. 2;

Fig. 4 is a sectional elevation illustrating the shield as mounted in a wall opening;

Fig. 5 is a view similar to Fig. 4 but showing the shield expanded in the wall opening; and

Fig. 6 is a sectional elevation illustrating a method by means of which the insert of ductile material or metal can be placed in the shield.

The invention briefly described consists of an expansion shield formed of relatively hard metal and having an insert in the inner end thereof formed of ductile or deformable material, such as ductile metal or lead. The insert is preferably formed as a cap having its open end extending toward the outer end of the shield and having its wall tapered from end to end and thicker at the inner end than at the outer end thereof.

Further details of the invention will appear from the following description.

In the form of the invention illustrated in the drawings there is shown a blank 10 which is bent longitudinally about the center thereof and folded to form a substantially cylindrical shield having laterally expansible portions 11 and 12. The outer end of the shield is provided with flanges 13 and 14.

The blank 10 has a central opening 15 and longitudinally extending openings or slots 16 and 17.

The shield just described is formed of relatively hard metal, preferably sheet metal, and has an insert 20 of ductile or deformable material, such as soft metal, mounted therein at the inner end thereof.

The insert or cap 20 may be formed in the manner shown in Fig. 6 by pouring the ductile metal through the opening 15, a core 21 being inserted in the shield and having a tapered end 22 for forming the tapered wall of the insert 20. The ductile metal also flows into the longitudinal slots 16 and 17 and fills the opening 15.

The shield is inserted in the wall opening in the usual manner and a driven expanding member, such as a nail 25, is driven into the shield and forces the shield sections 11 and 12 laterally into gripping engagement with the wall opening and furthermore forces the ductile material or metal of the insert 20 through the slots 16 and 17 into engagement with the wall opening. The inner end of the nail, as shown in Fig. 5, may project through the opening 15.

From the foregoing description it will be seen that a simple, practical and inexpensive "drive in" type of expansion shield has been designed and that this shield will form a practical and efficient anchorage.

Although one specific embodiment of the invention has been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims.

What I claim is:

1. An expansion shield comprising a substantially cylindrical member formed of relatively hard metal, and a cup of ductile material seated in and closing the inner end of said shield and having its open end facing outwardly.

2. An expansion shield comprising a substantially cylindrical member formed of relatively hard metal, and a cup of ductile material seated in and closing the inner end of said shield and having its open end facing outwardly, the wall of said cup being longitudinally tapered.

3. An expansion shield comprising a substantially cylindrical member formed of relatively hard metal, and a cup of ductile material seated in and closing the inner end of said shield and having its open end facing outwardly, the wall of the cup being thicker at the inner end thereof than at the outer end thereof.

4. An expansion shield comprising a substantially cylindrical member formed of relatively hard metal, and a cup of ductile material seated in the inner end of said shield and having its open end facing outwardly, said shield having

an opening at the inner end thereof and said ductile material filling said opening.

5 5. An expansion shield comprising a substantially cylindrical, one-piece member formed of relatively hard metal, and a cup of ductile material seated in and closing the inner end of said shield and having its open end facing outwardly.

6. An expansion shield comprising a substantially cylindrical member formed of relatively hard metal and having longitudinal slits, and a cup of ductile material seated in and closing the inner end of said shield and having its open end facing outwardly.

CHARLES C. TOMKINSON.

10	85
15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150