

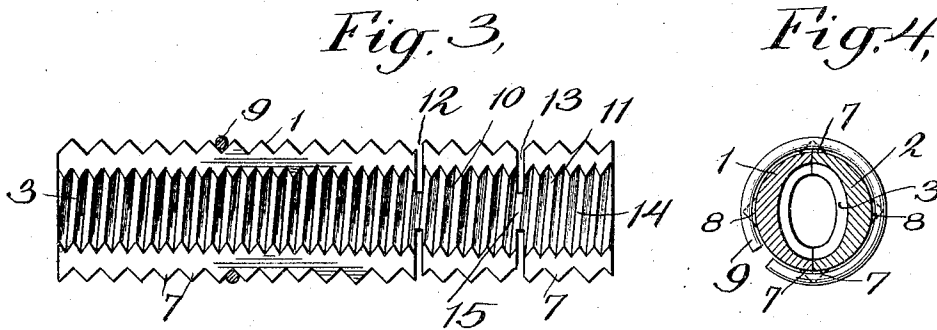
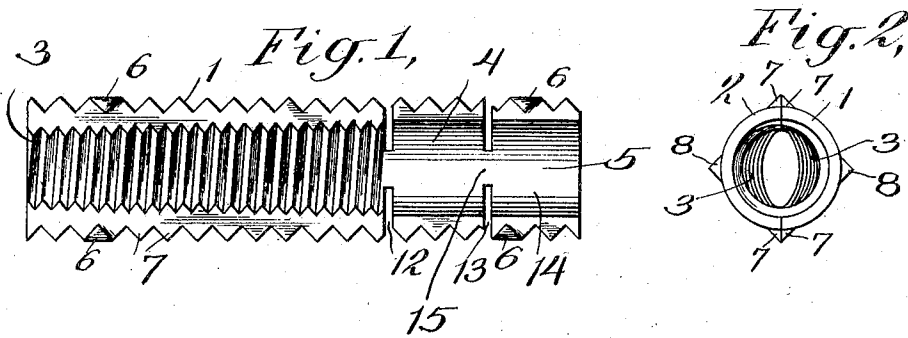
No. 770,022.

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H. B. NEWHALL.
BOLT ANCHOR.

APPLICATION FILED APR. 11, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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BOLT-ANCHOR.

SPECIFICATION forming part of Letters Patent No. 770,022, dated September 13, 1904.

Application filed April 11, 1903. Serial No. 152,106. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. NEWHALL, a citizen of the United States, and a resident of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Bolt-Anchors, of which the following is a specification, reference being had to the accompanying drawings, which form a part of the same.

This invention relates to bolt-anchors or expansion-shields such as are used to secure bolts or screws to masonry or other material.

In the accompanying drawings, in which the same reference-numerals refer to similar parts in the several figures, Figure 1 is a side view of a member of an expansion-shield embodying this invention. Fig. 2 is an end view of such shield. Fig. 3 is a side view of a member of an expansion-shield, illustrating a modified construction. Fig. 4 is a transverse sectional view of such a shield.

Expansion-shields embodying this invention may be formed of any desired number of members suitably joined in any desired way for proper coöperation to allow for the relative movement of the parts of the shield in engaging the material in which the shield is used. The shields may be constructed of any suitable material, and malleable iron or other metal may be used, if desired.

In the embodiment of this invention indicated in Figs. 1 and 2 the shield members 1 and 2 are indicated as provided with rows of gripping projections 7 and 8 on the outside of the same, which serve to more firmly grip the material in which the shield is used, and, furthermore, since these projections are preferably arranged in longitudinal rows discontinuous longitudinal ribs are formed in this way, which prevent the rotation of the shield members after they have been inserted in the material by forcibly driving them into the hole or otherwise. The exterior of the shield members may, however, be formed in other ways to coöperate with the material in which the shield is used, if desired. Suitable alining means are preferably provided to maintain the proper coöperation of the shield members during the operation of the same. If desired, suitable alining-lugs, such as 6, may

be formed upon the members which hold the several members in proper longitudinal and lateral alinement by engaging coöperating depressions, such as the recesses between the gripping projections 7 in the other members. The shield members are preferably formed with severable sections which allow for the ready adjustment of the size and shape of the shield to adapt it to the particular purpose desired. The shield members are indicated as being formed with severable shield-sections 14, these sections being firmly united to the main portion of the shield members by weakened connections, so as to properly coöperate therewith. This may be accomplished in any desired way, and in the drawings the severable sections are shown as united together and as joined to the main shield members by the yokes or necks 15, the breaking-slots 12 and 13 being formed at these points. The severable sections are indicated as joined longitudinally to the shield at the outer end of the same, into which the bolt is inserted, although it is of course understood that these severable sections may be otherwise joined to the shield to alter its size and shape and may, if desired, be attached to the inner end of the shield. In this way severable sections of the shield members may be formed integral by casting or otherwise, the size of the reduced yokes being such that the severable sections may be readily removed, so that the length of the shield may be regulated to suit the different conditions under which it is used. If the shield is formed of such material as malleable iron, the severable sections may be readily removed by breaking them from the shield by a hammer or otherwise, the yokes being severed in this way.

Any desired means may be employed for expanding the shield members and forcing them into contact with the material in which the shield is inserted. If desired, the shield members may be formed with a threaded hole, which is preferably tapered, as indicated, and the thread 3 may be given such form and size as to properly coöperate with the bolt or screw with which the shield is to be used. This thread may extend throughout the length of the shield, as indicated in Fig. 3, or the shield may, if desired, be formed with an un-

threaded portion adjacent one end, which is adapted to act as a bushing and to receive the unthreaded shank of the bolt inserted in the shield. It is not necessary in all cases to employ the alining-lugs which have been described, since any other desired means may be used to properly hold the parts of the shield in alinement while they are being used. In Fig. 3 a suitable alining-ring 9 is indicated, which grips the shield members and fitting within suitable depressions or grooves therein holds them together in such a way that they coöperate properly. A similar alining-ring, if desired, may be used in connection with the alining means indicated in Fig. 1.

It is of course understood by those familiar with this art that many changes may be made in the form, proportions, and numbers of parts of this device without departing from the spirit of this invention. Furthermore, certain features of this device may be employed without using all of the same and may be used in connection with other devices without losing the advantages of this invention. I do not, therefore, desire to be limited to the disclosure which has been made in this case; but

What is claimed as new, and what it is desired to secure by Letters Patent, is set forth in the appended claims:

1. In expansion-shields, shield members formed with alining means, with gripping projections and with a tapering threaded hole for expanding the same, said sections being formed with an enlarged unthreaded hole at

one end of the same to form a bushing, said members being formed with integral severable sections joined longitudinally thereto by reduced yokes to allow the ready disconnection of said severable sections.

2. In expansion-shields, shield members having a tapering threaded hole to be engaged by a bolt, alining-lugs and depressions in said members to maintain alinement of the same, there being rows of gripping projections on said members, said members being formed with severable sections joined longitudinally thereto by integral yokes, there being breaking-slots between said several sections to allow the ready disconnection of the same.

3. In expansion-shields, shield members formed with means to coöperate directly with a fastening member inserted into said shield members and thereby expand the same, said shield members comprising detachable sections normally joined by weakened connections to said members to allow the ready removal of said sections.

4. In expansion-shields, shield members comprising longitudinal sections joined by reduced severable yokes.

5. In expansion-shields, shield members comprising detachable sections normally joined by weakened connections to said members to allow the ready removal of the said sections.

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