

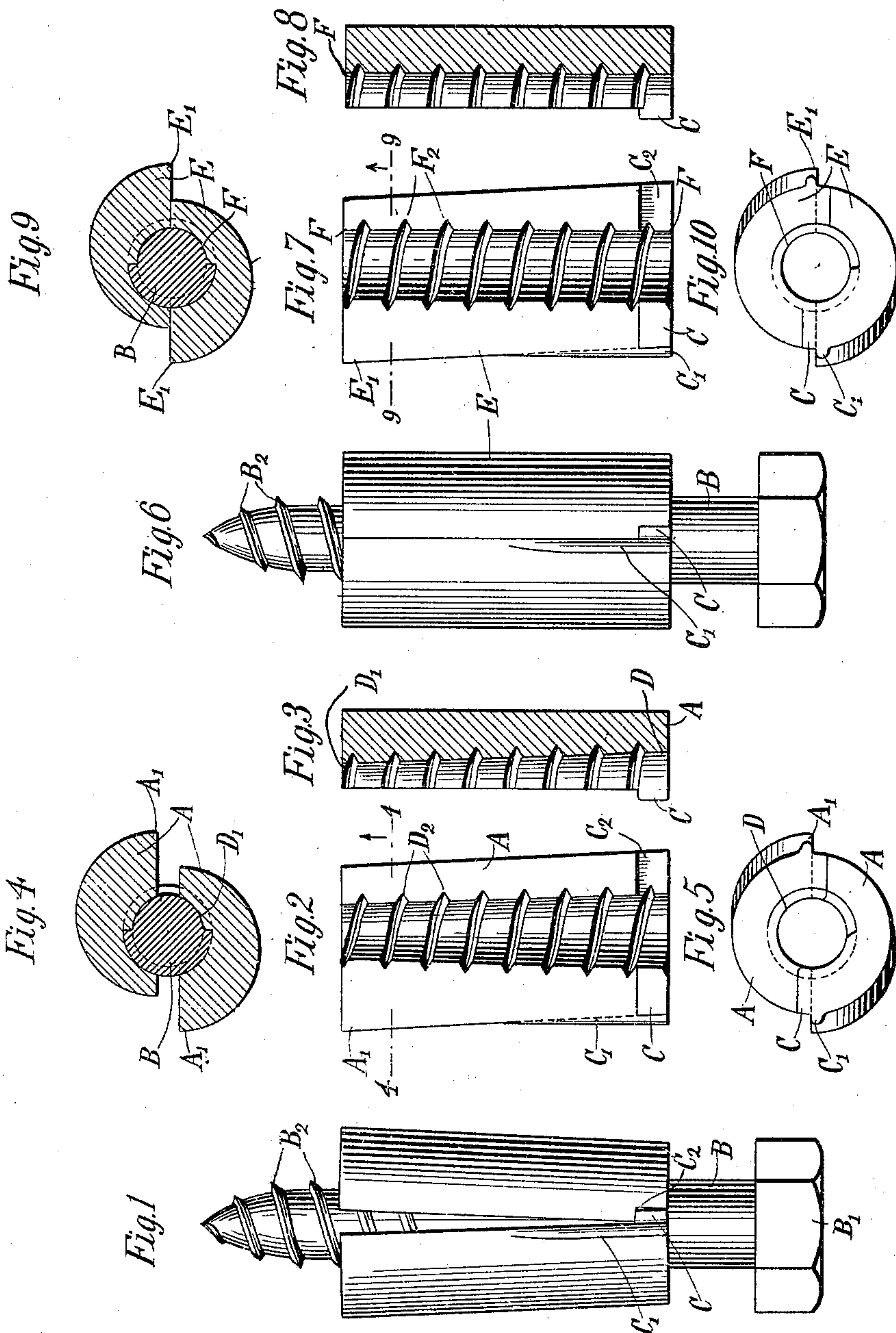
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Patented Dec. 10, 1901.

J. H. COOK.
BOLT ANCHOR.

(Application filed Oct. 29, 1901.)

(No Model.)



Witnesses:

Raphael Ketter
Alexander Mitchell

John H Cook Inventor
by
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UNITED STATES PATENT OFFICE.

JOHN H. COOK, OF NEW YORK, N. Y., ASSIGNOR TO HENRY B. NEWHALL,
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BOLT-ANCHOR.

SPECIFICATION forming part of Letters Patent No. 688,719, dated December 10, 1901.

Application filed October 29, 1901. Serial No. 80,615. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. COOK, a citizen of the United States, and a resident of New York city, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bolt-Anchors, of which the following is a specification, taken in connection with the accompanying drawings, forming a part of the same.

10 This invention relates to bolt-anchors formed of shields of metal which are inserted into a hole in masonry or other material and which are engaged by a bolt or screw and forced outward into firm contact with the material. In this way the bolt-anchor serves to firmly secure the bolt to the material in which the anchor is inserted.

20 In the accompanying drawings, in which the same reference character refers to similar parts in the various views, Figure 1 is an elevation showing a bolt-anchor and bolt inserted therein. Fig. 2 is an elevation of one of the shields of which the bolt-anchor is composed, the bolt and the other shield being removed. Fig. 3 is a longitudinal section of the same, taken substantially along the bolt-hole. Fig. 4 is a transverse section of the bolt and shield, taken on the line 4 4 of Fig. 2. Fig. 5 is an end view looking from the head of the shield, the bolt being removed. Fig. 6 is an elevation of another form of bolt-anchor, showing the bolt inserted. Fig. 7 is an elevation of one of the shields. Fig. 8 is a longitudinal section of the same along the bolt-hole. Fig. 9 is a transverse section showing the bolt and shields, taken on the line 9 9 of Fig. 7. Fig. 10 is a view in elevation of the head of the shields, the bolt being removed.

40 The bolt-anchor is formed of two similar shields A, preferably composed of hard material, such as iron. Each one of these shields is provided with the alining lug C at the head of the same, which is adapted to engage a corresponding alining groove C², formed on the other shield. These lugs and grooves serve to keep the shield in proper relative position and prevent them from moving longitudinally with respect to each other. In some cases,

however, it is not necessary to employ this means of holding the shields in proper relation. The shield A is formed with a threaded bolt-hole D, extending longitudinally of the shield. At the front of the shield the bolt-hole, which extends equally into each of the shields, forms a complete circular hole symmetrical with the outside of the heads of the shields, as indicated in Fig. 5. The bolt-hole does not, however, extend to the same extent into the shields at their rear end. The bolt-hole D' at this point is shallow, as indicated in Figs. 3 and 4, and, furthermore, the hole is not in the center of each shield. As is shown in Fig. 2, the portion A' of the shield on the left of the hole is much greater than the portion on the other side of the hole. As indicated, the bolt-hole is provided with the threads D², which are engaged by the threads B², formed upon the bolt B of usual construction. This bolt, as indicated in Fig. 1, is provided with the hexagonal head B', though it will be understood that any other form of bolt may be employed in connection with the shields shown. Tapering ribs C' may be formed, if desired, on the shields, so that when the shields are inserted into a hole they serve to grip the material to some extent as the shields are inserted and so hold the shields in proper position as the bolt is driven in. Since, as is indicated, each of the shields is semicylindrical in form, the two shields may readily be inserted into a round hole. Then when they have been inserted and when the bolt is screwed in the bolt engaging the threaded hole in the shields expands the rear of the shields, separating the two shields at this end. Furthermore, this causes the rear ends of the shields to slide one over the other, so that the gripping-wings A' are thrust into the material into which the shields are inserted and serves to rigidly grip the same, and, furthermore, these wings prevent the rotation of the shield with the bolt. It will of course be understood that the amount of the separation between the shields at the rear ends of the same and also the extent to which the gripping-wings are forced outward into the material may be varied by varying the

position of the threaded bolt-hole in the shield. If desired, the threaded bolt-hole may be unsymmetrically placed at the head of the shields, as well as at the rear of the same.

5 In this way the gripping-wings are thrust into the material at the head of the shield, as well as at the rear, or, if desired, throughout the whole length of the shield, if the threaded bolt-hole is unsymmetrically placed through-
10 out the entire extent of the shield.

Instead of forming the bolt-anchor with two similar shields it might, if desired, be formed with any number of shields, which fit together to form a substantially cylindrical body when
15 inserted into the hole and which move upon one another to form gripping-wings when the bolt is inserted into the unsymmetrically-placed hole in the shields. Furthermore, the shields, instead of being formed substantially
20 cylindrical, as indicated, and with a plain outer surface, may be formed of any other desired shape, and the outer surface of the same may be provided with suitable projec-
25 tions or corrugations to engage the material into which the shields are inserted in order to grip it more firmly.

It is possible to operate the shields without having them forced apart at the rear ends by the bolt. In order to accomplish this, I form
30 a semicylindrical shield E, with the alining lugs C and the alining grooves C², if desired, and also, preferably, with the ribs C'. These shields are provided with the threaded bolt-hole F, which, as is indicated in Fig. 10, ex-
35 tends equally into the shields at their head and forms a cylindrical hole symmetrical with the outer surface of the shields. The threaded hole F, having the screw-threads F², is un-
40 symmetrically placed at the rear of the shields, so as to form the gripping-wings E'. It will be noted, however, that at the rear of the shields the bolt-holes form a complete circular hole as large as the hole in the head of the shields.

45 When the shields E are inserted into a hole, the two semicylindrical shields fit rigidly within a round hole. The bolt B when inserted into the threaded bolt-hole engages by its screw-threads B² the threads F² upon the
50 bolt-hole. This serves to slide the rear ends of the shields upon each other in opposite directions, so that the gripping-wings E' are forced outward into engagement with the material in which the shields are placed, as is
55 indicated in Fig. 9. These wings have a dove-tail action and, furthermore, prevent the rotation of the shields with the bolt. The two shields are not, however, separated from each other by the action of the bolt, as is the case
60 with the other form of shields which I described. It will be noted that in this instance also the threaded bolt-hole is symmetrically placed in the head of the shield and is un-
65 symmetrically placed in the rear of the shield to form the gripping-wings when the bolt is inserted into the shield.

Many modifications may be made from the exact disclosure which I have made in this case. Furthermore, parts of my invention may be used without employing all of the
70 same. I do not therefore wish to be limited by the disclosure which I have made; but

What I claim as new, and what I wish to secure by Letters Patent, is set forth in the appended claims:

75 1. A bolt-anchor comprising two similar shields of substantially semicylindrical form, said shields being provided with ribs and with alining lugs and grooves, said shields being
80 formed with a threaded bolt-hole shallower at the rear of the shields than at the head of the same, said bolt-hole being symmetrically placed in the head of the shields and being
85 unsymmetrically placed in the rear of the shields to form oppositely-projecting grip-
ping-wings when a bolt is inserted into the said bolt-hole.

2. A bolt-anchor comprising two substan-
90 tially semicylindrical shields, said shields being formed with a threaded bolt-hole symmet-
rically placed at the head of said shields and unsymmetrically placed at the rear of said
95 shields to form oppositely-projecting grip-
ping-wings when a bolt is inserted into said hole, said bolt-hole being shallower at the rear
of said shields than at the head of the same.

3. A bolt-anchor comprising two similar
100 semicylindrical shields, said shields being formed with a threaded bolt-hole extending
longitudinally of said shields and unsymmet-
rically placed at the rear of said shields to
105 form oppositely-projecting gripping-wings at the rear of said shields when the bolt is in-
serted into said hole, said bolt-hole being shallower at the rear of said shields than at the
head of the same.

4. A bolt-anchor comprising two similar
110 substantially semicylindrical shields, said shields being formed with a longitudinal
threaded bolt-hole symmetrically placed at
the head of said shields and unsymmetrically
placed at the rear of said shields to form grip-
ping-wings at the rear of said shields when a
bolt is inserted into said bolt-hole.

5. A bolt-anchor comprising two shields,
115 said shields being formed with a threaded
bolt-hole extending longitudinally of the
same, said bolt-hole being unsymmetrically
placed at the rear of said shields to form grip-
ping-wings at the rear of said shields when a
120 bolt is inserted into said bolt-hole.

6. A bolt-anchor comprising two substan-
125 tially semicylindrical shields, said shields being formed with a threaded bolt-hole unsym-
metrically placed at the rear of said shields
to cause said shields to slide when a bolt is
inserted into said bolt-hole and to form oppo-
sitely-projecting gripping-wings at the rear
of said shields.

7. A bolt-anchor comprising two shields,
130 said shields being formed with a threaded
bolt-hole unsymmetrically placed in said

shields to cause said shields to slide upon each other when a bolt is inserted into said shields to form oppositely-projecting gripping-wings.

inserted into said shields to form outwardly-projecting gripping-wings.

8. A bolt-anchor comprising shields, said shields being formed with a threaded bolt-hole unsymmetrically placed in said shields to cause said shields to slide when a bolt is

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Witnesses:

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