T. F. KELLER.

BOLT ANCHOR.

APPLICATION FILED DEC. 30, 1909.

966,024. Patented Aug. 2, 1910.

Fig. 1,

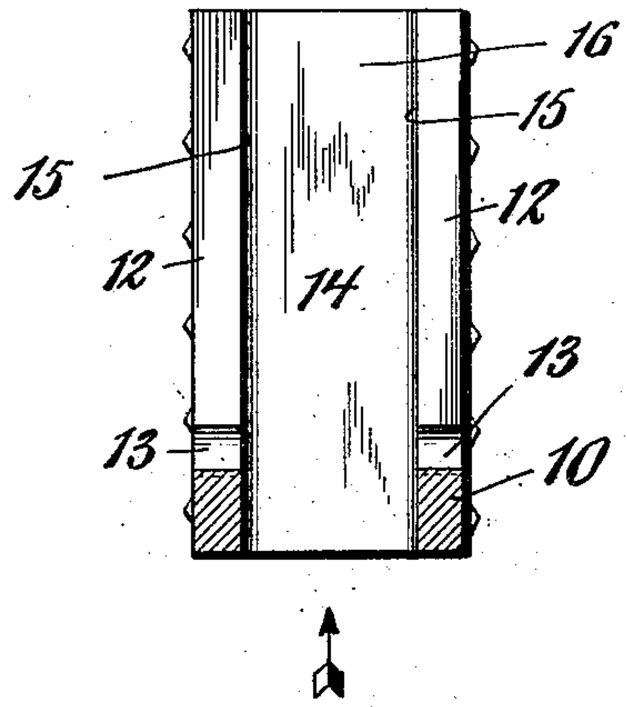


Fig. 2,

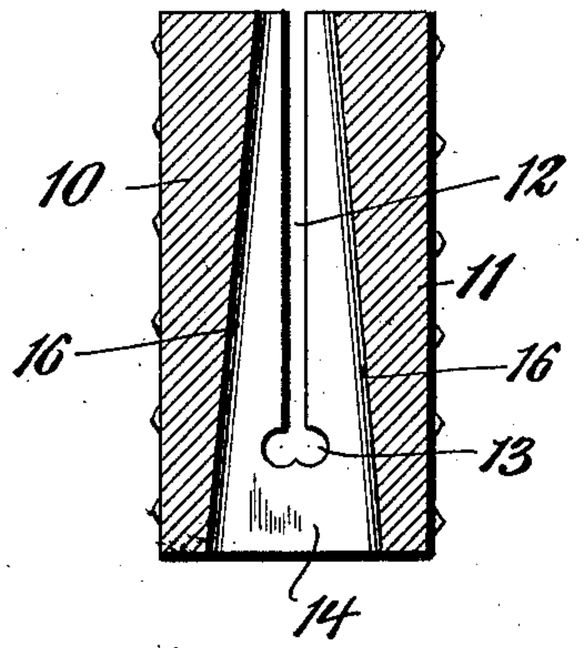


Fig. 3,

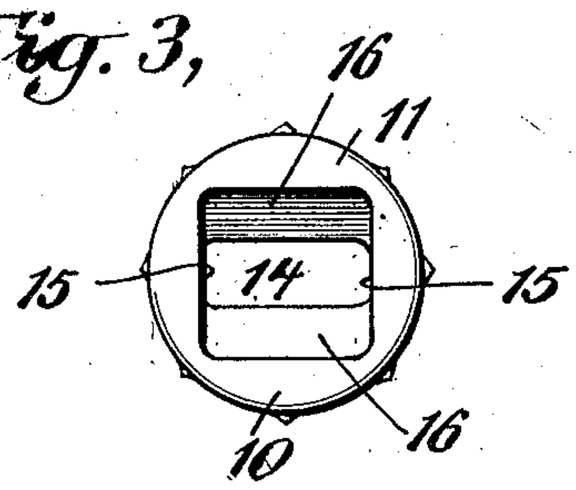


Fig. 4,

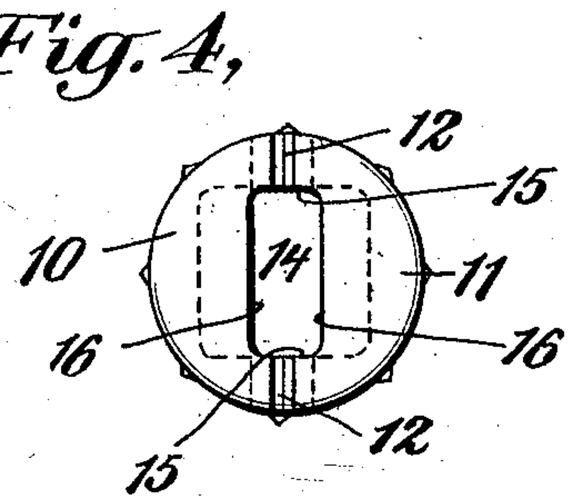


Fig. 5,

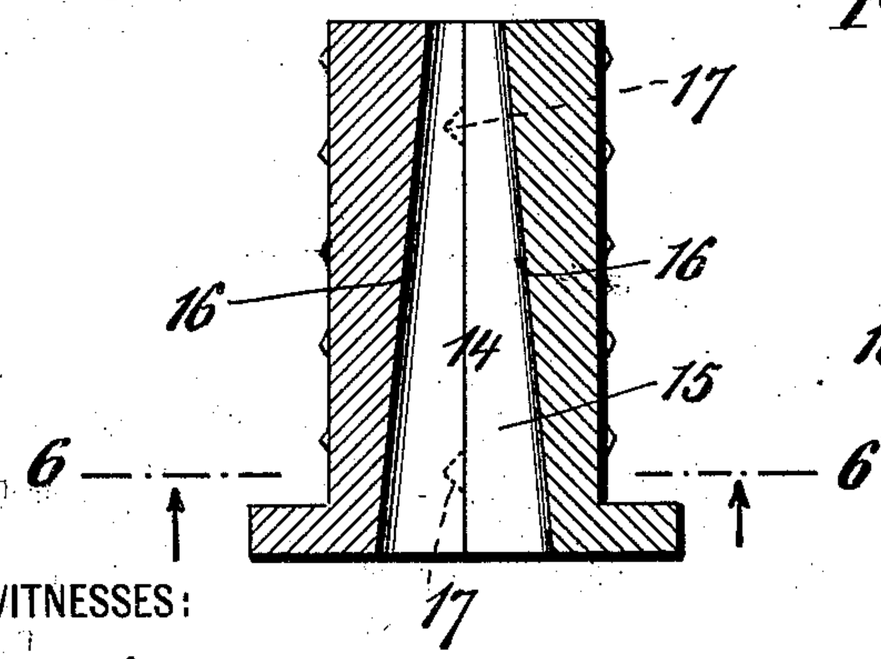
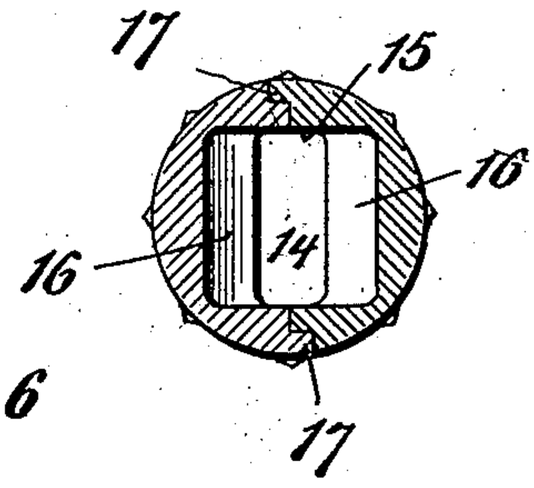


Fig. 6,



WITNESSES:

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BOLT-ANCHOR.

966,024. Specification of Letters Patent. Patented Aug. 2, 1910.

Application filed December 30, 1909. Serial No. 535,698.

To all whom it may concern:

Be it known that I, TRAUGOTT F. KELLER, a citizen of the United States of America, and a resident of Brooklyn, 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, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in bolt anchors of the type employed in holes in walls of stone or brick and the like, and which are adapted to be expanded by the bolt when the same is placed in position whereby the anchor itself is secured in the hole and the bolt secured to the anchor.

The particular class of bolt anchor to which my invention relates is that in which a soft metal segmental shell is employed into which the bolt is forced, whereby threads are formed by the bolt upon the interior of the shell and the exterior of the shell is caused to conform substantially to the contour of the hole.

My invention consists essentially in a segmental shell of this character, preferably substantially cylindrical upon its exterior and having a longitudinal bore therethrough which is substantially rectangular in cross section throughout, two opposite sides of the bore being parallel and the other two sides being longitudinally convergent, the line of division between the segments being in a plane substantially at right angles to the parallel sides. In this form of anchor the interior bore is substantially wedge-shaped in one direction so that the bolt in entering it would tend to force the segments apart with a wedge-like action, while in the other direction, *i. e.*, the direction in which the anchor is not divided into segments and hence in which any wedge-like action would be undesirable,—the walls substantially conform to the bolt. The result of the foregoing is a tendency to reduce the mutilation of the anchor as the bolt is being forced inward, a tendency to increase the size and strength of the threads formed by the screw, and a general increase of the efficiency of the anchor both in its grip upon the walls of the hole in which it is employed, and its grip upon the bolt engaging it.

In order that my invention may be thoroughly understood, I will now proceed to describe certain embodiments thereof, having reference to the accompanying drawings illustrating the same, and will then point out the novel features in claims.

In the drawings: Figure 1 is a view in central longitudinal section through a bolt anchor constructed in accordance with my invention. Fig. 2 is a view in central vertical longitudinal section therethrough, at right angles to the plane of section of Fig. 1. Fig. 3 is an end view of the anchor looking in the direction of the arrow of Fig. 1. Fig. 4 is an end view of the same looking in the direction of the arrow of Fig. 2. Fig. 5 is a view in central longitudinal section through a form of bolt anchor in which the segments are entirely separated. Fig. 6 is a transverse sectional view of the same upon the plane of the line 6—6 of Fig. 5.

Referring first to the construction shown in Figs. 1 to 4, the bolt anchor comprises a substantially cylindrical shell composed of two segments 10—11 divided longitudinally by slots 12. The slots 12 terminate near the outer end of the bolt anchor in substantially heart-shaped recesses 13, as shown. The segments in these figures are shown as united between these recesses and the outer end though the segments may be entirely divided as in the example of my invention shown in Figs. 5 and 6. The shell is provided with a longitudinal bore 14 which is substantially rectangular at any point in transverse section throughout the device. Two of the opposite sides 15 of this bore are substantially parallel with each other and with the axis of the bore, while the other two sides 16 are inwardly convergent from the outer to the inner end, *i. e.*, from the end shown in Fig. 3 to the end shown in Fig. 4. The parallel sides 15 are those sides which are at right angles to the line of division between the segments, *i. e.*, the slots 12 in the first four figures.

In Figs. 5 and 6 I have shown another form of anchor in which the segments are entirey divided throughout their lengths so that they are truly separable from end to end, and I have provided the segments with interlocking lugs 17 for coengagement under normal conditions. It will, of course, be readily understood that it is entirely immaterial to this invention whether the segments be entirely divided or partially divided as in any event the forward end of the anchor is not expanded and the flexibility or malleability of the metal will readily permit the inner ends of the segments to ex-

pand even though the outer ends be actually united as in the example shown in the first four figures. It will be also understood that it is not essential to terminate the slots 12 in the heart-shaped recesses 13, but that the same is possible and advantageous under some circumstances in that it tends to prevent fracture of the segments beyond such points.

What I claim is:

1. A bolt anchor having a longitudinal bore therethrough which is substantially rectangular in cross section at any point, two opposite sides of the said bore being approximately parallel with respect to each other, and the other two sides being longitudinally convergent toward the inner end of the anchor, the said anchor being formed in two segments divided longitudinally in a plane substantially at right angles to the parallel sides of the said bore.

2. A bolt anchor comprising a substantially cylindrical shell composed of two segments having a longitudinal bore therethrough which is substantially rectangular in cross section at any point, two opposite sides of the said bore being approximately parallel with respect to each other, and the other two sides being longitudinally convergent toward the inner end of the anchor, the plane of segmental division being substantially at right angles to the parallel sides of the said bore.

3. A bolt anchor comprising a substantially cylindrical shell having a longitudinal bore therethrough which is substantially rectangular in cross section at any point, two opposite sides of the said bore being approximately parallel with respect to each other, and the other two sides being longitudinally convergent toward the inner end of the anchor, the said shell being provided with slots extending from the inner end a part of the distance to the outer end of the shell, the said slots dividing the shell into two segments substantially upon a plane at right angles to the parallel sides of the bore.

4. The combination with a bolt anchor having a longitudinal bore therethrough which is substantially rectangular in cross section at any point, two opposite sides of the said bore being substantially plane surfaces approximately parallel with respect to each other, and the other two sides being substantially plane surfaces longitudinally convergent toward the inner end of the anchor, the said anchor being formed in two segments divided longitudinally in a plane substantially at right angles to the parallel sides of the said bore, of a substantially cylindrical bolt or screw for engagement therewith, the forward end of the said screw being directed toward the smaller end of the said bore.

In witness whereof, I have hereunto set my hand this 27th day of December, 1909.

TRAUGOTT F. KELLER.

Witnesses:

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JOHN G. GLYNN.