J. KENNEDY.

EXPANSION ANCHOR.

APPLICATION FILED MAY 11, 1912.

1,100,185. Patented June 16, 1914.

Fig. 1,

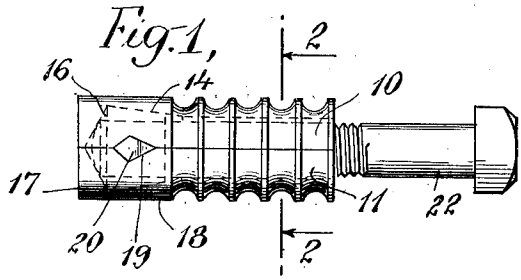


Fig. 2,

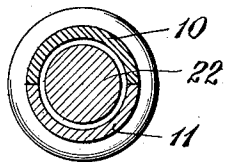


Fig. 3,

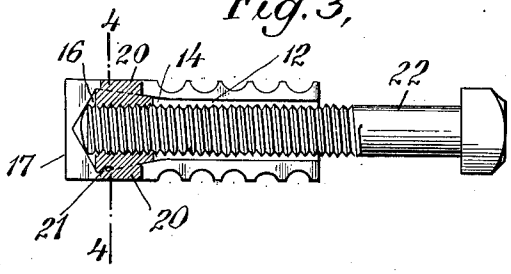


Fig. 4,

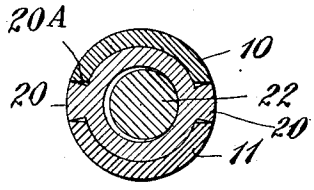


Fig. 5,

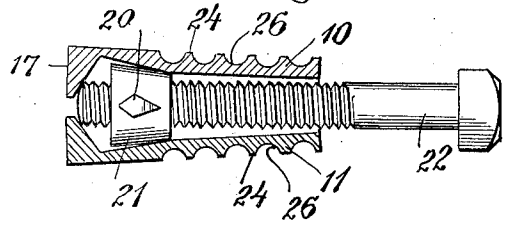
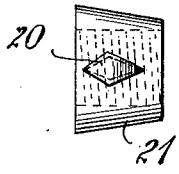


Fig. 6,



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EXPANSION-ANCHOR.

1,100,185. Specification of Letters Patent. Patented June 16, 1914.

Application filed May 11, 1912. Serial No. 696,675.

To all whom it may concern:

Be it known that I, JOSEPH KENNEDY, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Expansion-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 expansion anchors of the character employed for obtaining anchorage in brick or stone walls or the like, of which the material is of a character not adapted to directly receive and hold a threaded bolt.

A feature of the invention contemplates the provision of a longitudinally segmental anchor having its outer surface corrugated or ribbed for a portion of its length which makes it better adapted to engage the sides of the hole in the wall when forced apart by its expander.

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

In the drawing, Figure 1 is a side elevation of a bolt and anchor constructed in accordance with my invention. Fig. 2 is a transverse vertical section of the same taken on the line 2—2 in Fig. 1 and drawn on a somewhat enlarged scale. Fig. 3 is a central longitudinal elevation of the bolt and anchor with the anchor and its expander shown in section. Fig. 4 is a transverse vertical section, on an enlarged scale, taken on the line 4—4 in Fig. 3. Fig. 5 is a central longitudinal section showing the anchor expanded. Fig. 6 is a side elevation, on an enlarged scale, of the conical expanding nut.

As illustrated in the drawings, the anchor comprises a shell divided longitudinally throughout its length into two parts 10 and 11. This shell has a longitudinal bore, of which the forward end or portion 12 is cylindrical and smooth. At the inner end of this cylindrical part of the bore is a conical portion 14, the sides of which diverge from the end of the cylindrical portion toward the inner or rear end of the anchor. The inner or larger end of this conical portion 14 is joined with a shallow conical recess 16 formed in the end wall 17 of the anchor.

At the line of joinder of the two parts of the shell, that portion of it in which are the conical bores is provided with a pair of substantially diamond shaped recesses 19. These recesses are adapted to receive correspondingly shaped ears or lugs 20 which project laterally from the periphery of a conical nut 21 which is adapted to be held within the conical bore 14. The sides of the lugs are undercut as shown at 20^A. This is for the purpose of insuring that the lugs will properly expand the anchor by separating the two parts of the shell and preventing the sides of the shell at recesses 19 being pushed out over the lugs. In fact this construction gives the metal of the shell a tendency to grip the expander more tightly and to prevent loss of expansion due to spreading of the sides. The nut 21 is threaded to receive a bolt 22. The latter is screwed through the nut until it engages the inner end wall 17 of the shell. A further rotation of the bolt forces the nut forward and at the same time the wedge shaped ears or lugs 20 engaging the walls of recesses 19 force the anchor sections 10 and 11 apart.

The corrugations on the outside of the shell present a rough surface which aids in preventing withdrawal of the anchor from the wall especially when the device is used in comparatively soft material such as brick or concrete.

The contact of the end of the bolt on the bearing surfaces 16 therefor, effectively prevents the inner ends of the two parts of the shell bending in toward each other, thereby effecting a holding bearing at the rear end of the shell and establishing a bearing against the wall throughout the length of the shell.

What I claim is:

1. A bolt anchor comprising a tubular shell split longitudinally, said shell being constructed with a conical pocket flaring toward the inner end of the shell, a cone-shaped bearing wall of rigid members across the inner end of the shell near the end of said pocket adapted to arrest longitudinal movement of a bolt and to cause the pressure exerted thereon to spread apart the parts of the shell at the inner end thereof, an internally threaded expander in said pocket, and lugs projecting transversely from opposite sides of the expander through the sides of the shell.

2. A bolt anchor comprising a tubular shell split longitudinally, said shell being constructed with a conical pocket flaring toward the inner end of the shell, a cone-shaped bearing wall of rigid members across the inner end of the shell near the end of said pocket adapted to arrest longitudinal movement of a bolt and to cause the pressure exerted thereon to spread apart the parts of the shell at the inner end thereof; an internally threaded expander in said pocket and lugs projecting transversely from opposite sides of the expander through the sides of the shell, the sides of said lugs being undercut.

3. A bolt anchor comprising a tubular shell split longitudinally, said shell being constructed with a conical pocket flaring toward the inner end of the shell and a pair of opposed apertures from said pocket through the sides of the shell at the division line thereon, said apertures having converging walls, a cone-shaped bearing wall of rigid members across the inner end of the shell near the end of said pocket; an internally threaded expander in said pocket and a pair of wedge-shaped lugs projecting transversely from opposite sides of the expander into said apertures, the sides of said lugs being undercut.

4. The combination with a bolt anchor comprising a tubular shell split longitudinally, said shell being constructed with a conical pocket flaring toward the inner end of the shell, a cone-shaped bearing wall of rigid members across the inner end of the shell near the end of said pocket, adapted to arrest longitudinal movement of a bolt and to cause the pressure exerted thereon to spread apart the parts of the shell at the inner end thereof, an internally threaded expander in said pocket and a pair of wedge-shaped lugs projecting from opposite sides of the expander into said apertures; of a bolt having the threaded portion thereof passing through and fitted into the threaded portion of the expander and projecting beyond the expander into contact with said cone-shaped bearing wall and having a portion protruding beyond the outer end of the shell.

5. The combination with a bolt anchor comprising a tubular shell split longitudinally, said shell being constructed with a conical pocket flaring toward the inner end of the shell and a pair of opposed substantially diamond-shaped apertures from said pocket through the shell at the division lines thereof, said shell having a cone-shaped bearing wall across its inner end adapted to arrest longitudinal movement of a bolt and to cause the pressure exerted thereon to spread apart the parts of the shell at the inner end thereof, and corrugations at the outer periphery of the shell, an internally threaded expander in said pocket and a pair of wedge-shaped lugs projecting from opposite sides of the expander into said apertures, the sides of said lugs being undercut; of a bolt having the threaded portion thereof passing through and fitted into the threaded portion of the expander and projecting beyond the expander into contact with said cone-shaped bearing wall and having another portion protruding beyond the outer end of the shell.

6. A bolt anchor comprising a tubular shell split longitudinally, said shell being constructed with a conical pocket flaring toward the inner end of the shell, an internally threaded expander in said pocket, and undercut wedge-shaped lugs projecting transversely from opposite sides of the expander through the sides of the shell.

7. A bolt anchor comprising a tubular shell split longitudinally, an internally threaded expander adapted to coöperate with said shell to separate the parts thereof, and undercut wedge-shaped lugs projecting transversely from opposite sides of the expander through the sides of the shell.

8. A bolt anchor comprising a tubular shell split longitudinally, an internally threaded longitudinally movable expander within said shell, means integral with the parts of the shell forming a transverse bearing surface, and undercut wedge-shaped lugs projecting transversely from opposite sides of the expander through the sides of the shell.

In witness whereof, I have hereunto set my hand this 9th day of May, 1912.

JOSEPH KENNEDY.

Witnesses:
ELIZABETH ALEXANDER,
I. B. MOORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."