No. 841,338. PATENTED JAN. 15, 1907.

F. C. PALMER.

BOLT ANCHOR.

APPLICATION FILED OCT. 10, 1905.

Fig. 1.

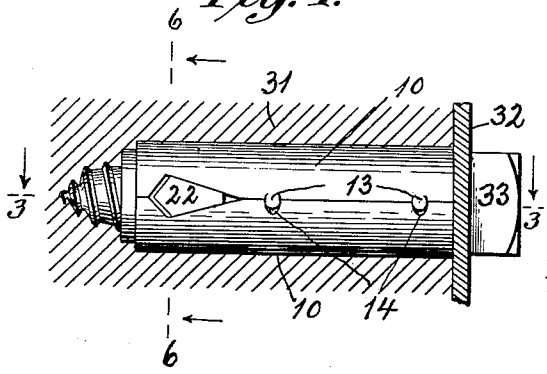


Fig. 2.

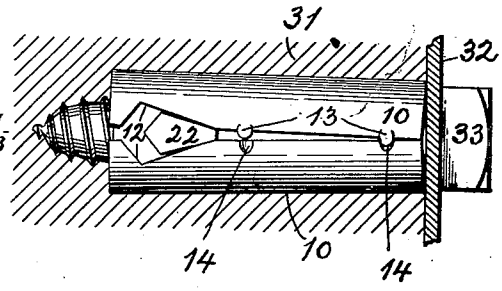


Fig. 3.

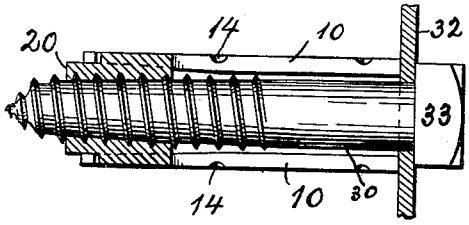


Fig. 4.

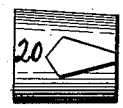


Fig. 5.

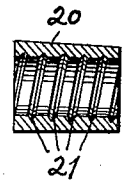


Fig. 7.

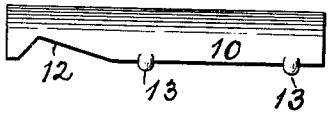


Fig. 8.

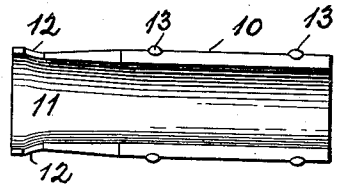


Fig. 9.

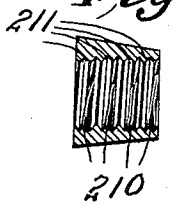
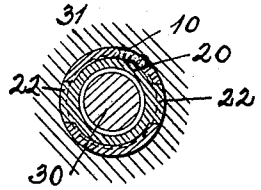


Fig. 6.



Attest:
Herman Meyer
Alan McDonnell.

Frederick C. Palmer,
Inventor:

by William R. Baird,
his Atty.

UNITED STATES PATENT OFFICE.

FREDERICK C. PALMER, OF SPRINGFIELD, MASSACHUSETTS.

BOLT-ANCHOR.

No. 841,338. Specification of Letters Patent. Patented Jan. 15, 1907.

Application filed October 10, 1905. Serial No. 282,101.

To all whom it may concern:

Be it known that I, FREDERICK C. PALMER, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Bolt-Anchors, of which the following is a specification.

My invention relates to bolt-anchors; and its novelty consists in the construction and adaptation of the parts, as will be more fully hereinafter pointed out.

In the drawings, Figure 1 is a side elevation of a bolt placed in a wall, but not expanded, a plate held to the wall by the bolt being shown in vertical section. Fig. 2 is a similar view showing the anchor slightly expanded. Fig. 3 is a partial section and top plan view of the parts shown in Fig. 1 below the plane of contact of the two shields. Fig. 4 is a side elevation of the separable bushing, and Fig. 5 is a central section thereof. Fig. 6 is a section on the plane of the line 6 6 in Fig. 1. Fig. 7 is a side elevation, and Fig. 8 is a plan view, of the interior thereof. Fig. 9 is a central section of a modified form of the separable bushing.

In the drawings, 10 10 are shields made of any suitable kind of soft metal and cast, rolled, or stamped into shape. Each shield constitutes a longitudinal segment of a cylinder, polyhedron, or other similar symmetrical solid. Each shield tapers slightly outward internally at its inner end 11 11, and each is provided with recesses, notches, or slots 12 12 for the reception of the wedges 22 of the bushing 20, hereinafter referred to. Each shield is preferably provided with means, as the projections 13 13 and corresponding recesses 14 14, whereby accurate registration of the parts may be secured upon assembling them. These shields may be of any convenient number. In the form of anchor illustrated only two are shown. It is essential, however, that when assembled they should form a hollow symmetrical sleeve, which should preferably taper outwardly slightly at its inner end. It will be observed that the internal surface of the assembled shields is smooth and free from all projections. The outer surfaces of the shields may be smooth or rough, as may be preferred.

20 is a separable tubular bushing slightly conical or tapering, being larger externally at its inner end. It is internally threaded at 21 with female threads. Externally it is provided with a plurality of wedges 22, made integral with the body of the bushing or firmly secured thereto.

In Fig. 9 there is illustrated my improved form of the bushing 20, which is provided internally with a plurality of female threads, one series, 210, being cut to one gage and another series, 211, being cut to another gage which may be a simple multiple of the first gage. For instance, the threads 210 210 are shown cut approximately eight to the inch, while the threads 211 211 are shown cut approximately sixteen to the inch.

30 is a screw or bolt desired to be inserted into the aperture in the wall 31.

32 is a plate or other thing which it is desired to hold against the wall, and 33 is the head of the screw or bolt 30.

The manner of using the device is as follows: The parts are first assembled, as shown in Figs. 1 and 3, the tubular bushing 20 being placed within the inner end of the sleeve formed by the assembled shields. The parts fit loosely and are easily placed into position. The screw or bolt 30 may be inserted in the parts as they are assembled, or it may be inserted afterward. The parts being assembled, the screw or bolt is rotated until the inner edges of its head 33 abut snugly against the plate 32. Its further rotation in that direction being thus prevented, and because of the fact that its threads engage with the threads with which the bushing 20 is internally provided, tends to draw forward this bushing. As this forward movement continues the parts assume the position shown in Fig. 2, the wedges 22 of the bushing acting against the sides of the shields 10 10 to force them apart and against the walls of the aperture in which they are placed. A further rotation of the parts tightens them securely into position.

It will be noted that as the tubular bushing is relatively small compared with the shields (and might be made even smaller than shown in the illustration) by providing a number of these bushings with a set of shields capable of being assembled into one sleeve a wide range of usefulness may be secured for the device. I find, however, that I can about double its efficiency and range of usefulness by cutting in the same bushing a plurality of threads, as illustrated in Fig. 9, so that more than one standard of thread may be employed with the same bushing.

The advantage of this construction is apparent.

What I claim as new is—

1. A bolt-anchor comprising a plurality of shields, adapted, when assembled, to form a sleeve and a tubular bushing inclosed by the sleeve and provided internally with a plurality of threads cut to different gages, each thread extending from end to end of the bushing.

2. A bolt-anchor, comprising a plurality of shields adapted, when assembled, to form a sleeve and a tubular bushing inclosed by the sleeve and provided with a plurality of internal threads cut to different gages, the different threads being cut in the same length of the bushing.

3. A bolt-anchor, comprising a plurality of shields, adapted, when assembled, to form a sleeve and an internally-threaded tubular bushing inclosed by the sleeve, the threads within the bushing being cut to different gages, the gage of one thread being a simple multiple of the gage of another thread.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK C. PALMER.

Witnesses:

WILLIAM R. BAIRD,

ALAN MCDONNELL.