No. 725,279. PATENTED APR. 14, 1903.

S. S. NEWTON.

BOLT ANCHOR.

APPLICATION FILED DEC. 23, 1902.

NO MODEL.

Fig. 1

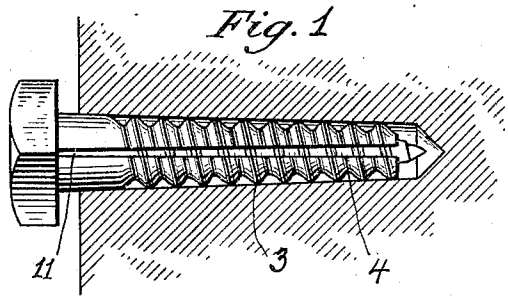


Fig. 5

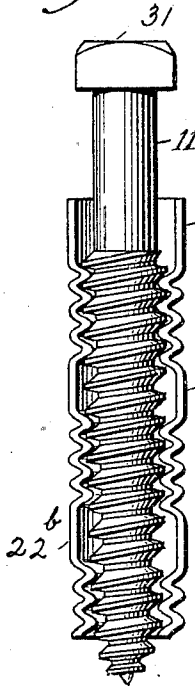


Fig. 6

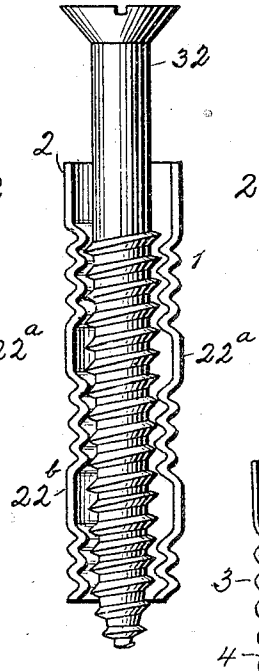


Fig. 2

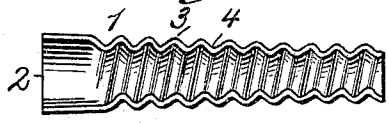


Fig. 3

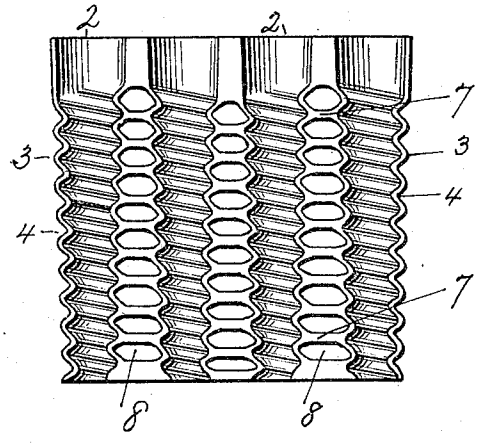


Fig. 4



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UNITED STATES PATENT OFFICE.

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BOLT-ANCHOR.

SPECIFICATION forming part of Letters Patent No. 725,279, dated April 14, 1903.

Application filed December 23, 1902. Serial No. 136,419. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN S. NEWTON, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, 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 of the parts, as will be more fully hereinafter pointed out.

In the drawings, Figure 1 is a side elevation of one of my improved bolt-anchors in place in a cavity in a wall and surrounding a bolt. Fig. 2 is a plan view of a semicylindrical section of my improved anchor looking at the concave side thereof. Fig. 3 is a similar plan view of four sections of such an anchor which have been stamped out of one piece of metal. Fig. 4 is an end view of the four bolt-anchor sections shown in Fig. 3. Fig. 5 is a plan view of a section of the bolt-anchor provided with non-corrugated portions, in which is shown placed a bolt the threads of which engage the corrugated portions thereof. Fig. 6 is a similar view of the same section of a bolt-anchor in which is shown placed a screw the threads of which are more numerous for the same length of space than those of the bolt shown in Fig. 5 and which threads also engage the corrugated portions thereof.

On October 9, 1902, Serial No. 126,393, I filed an application for Letters Patent of the United States for an improved form of bolt-anchor comprising several novel features, the said anchor being made of sections transversely corrugated or fluted. In this application I desire to confine my description to the invention in which the walls of the bolt-anchor are of uniform thickness, this physical characteristic constituting a dividing-line between this invention and the one described in the application above referred to and which by a requirement of the Patent Office cannot be included therein.

In the drawings, 1 represents one of the sections of which my improved bolt-anchor is composed. It consists of a strip of suitable metal which has been stamped out of one sheet into the form shown—viz., that of a semicylindrical body provided for the greater portions of its length with corrugations or flutings and also provided with a smooth or non-corrugated portion 2 near its outer end. The corrugations or fluting consist of alternate elevations 3 and depressions 4, formed in stamping out the metal in any of the usual methods well known. The fact that the section is stamped out of a sheet of metal insures its walls having substantially uniform thickness throughout. It will be observed that the section formed in Fig. 2 gradually tapers towards its inner end and away from the non-corrugated portion. When so stamped out, the result of such an operation is shown in Figs. 3 and 4. When this is done, the die employed will leave small joining-strips 7 7 7 between the adjacent elevations on the different sections and will cut out small portions of metal which filled the spaces 8 8 8 before the metal was stamped out. Of course the die by means of which the sections are stamped may be arranged so as to leave the joining-strips 7 7 7 and the spaces 8 8 8 of different sizes and shapes. What these sizes and shapes are, however, is entirely immaterial and may be left to the judgment of the workmen to be determined from the use to which the bolt-anchors are to be put, their sizes, and the metal of which they are composed. The non-corrugated portions 2 2 at the outer ends of the anchors are best adapted to engage the smooth shanks 11 of the bolts. I have also shown the sections of the bolt-anchors as semicylindrical in cross-section. It is obvious that they may be made of any segmental, curved, or substantially flat form, provided that when a sufficient number are assembled they constitute substantially a surrounding envelop or sleeve for a bolt which will anchor it in place. I have shown the corrugations or flutings in spiral form, and this is the form which I prefer. If any other than a spiral is employed—for instance, a series of annular flutings—the threads of the bolts will cut across the depressions of the corrugations. This in some cases might be desirable, especially where an unusually firm grip was desired, but commonly it would not be necessary.

In Figs. 5 and 6 I have illustrated a modified form of the bolt-anchor section shown in Fig. 2. In this form the non-corrugated or non-fluted portions 22 of the bolt-anchor sections are not only provided at the outer ends of the sections, but are provided at portions 22 22 intermediate the corrugated or fluted portions. Otherwise the construction of the anchor-sections is the same as heretofore described. The purpose of providing these non-corrugated portions is to enable the same series of sections to be used with bolts having a different number of threads to the inch. For example, in Fig. 5 I show a bolt 31 having a certain number of threads to the inch. So far as engaging with the spiral corrugations of the section in which it is placed is concerned these corrugations might be continued past the intermediate non-corrugated portions 22^a and 22^b. In Fig. 6, however, I show the same section with the non-corrugated portions 22^a and 22^b intermediate the corrugated portions and engaging a screw 32 having a greater number of threads to the inch. The threads of this screw engage the corrugated portions to a certain extent about as readily as the threads of the bolt 31 engaged the same corrugated portions; but a point is soon reached at which the threads of the screw 32 would cross the corrugations if they were continued. I therefore interrupt the corrugations and substitute the non-corrugated portions 22^a until I reach a point where the spiral corrugations again coincide substantially with the slope of the threads of the bolt 32. This I continue until I reach the point 22^b, where I have to again substitute a non-corrugated portion. It will thus be seen that I can use the same bolt-anchor section when it is provided with non-corrugated portions intermediate the corrugated portions with bolts or screws provided with a different number of threads to the inch.

What I claim as new is—

1. A bolt-anchor consisting of a plurality of sections each composed of spirally-corrugated metal and the walls of which are of uniform thickness throughout and forming, when assembled, a spirally-corrugated tube.

2. A bolt-anchor consisting of a plurality of sections each composed of transversely corrugated or fluted metal, the walls of which are of uniform thickness throughout, and forming, when assembled, a corrugated tube tapering internally toward its inner end.

3. A bolt-anchor consisting of a plurality of sections each composed of alternately corrugated and non-corrugated portions and the walls of which are of uniform thickness throughout.

4. A bolt-anchor consisting of a plurality of sections each composed of transversely corrugated or fluted metal the walls of which are of uniform thickness throughout and forming, when assembed, a corrugated tube tapering internally toward its inner end and each section provided with a smooth non-corrugated portion at its outer end.

Witness my hand, this 22d day of December, 1902, at the city of New York, in the county and State of New York.

STEPHEN S. NEWTON.

Witnesses:
M. HYNDMAN,
HERMAN MEYER.