

C. J. CLEMENTS.
BOLT ANCHOR.
APPLICATION FILED JUNE 16, 1908.

961,583.

Patented June 14, 1910.

2 SHEETS—SHEET 1.

Fig. 1

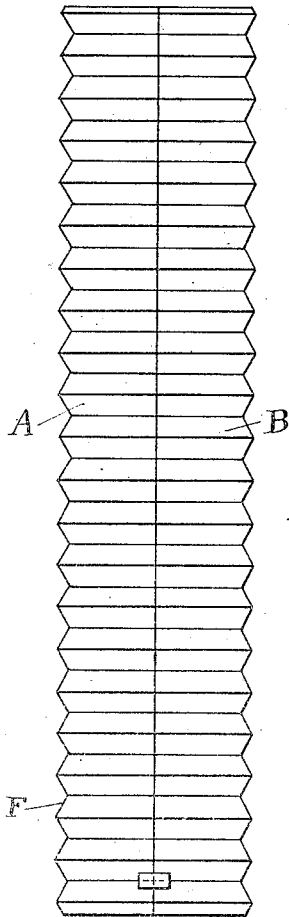


Fig. 2

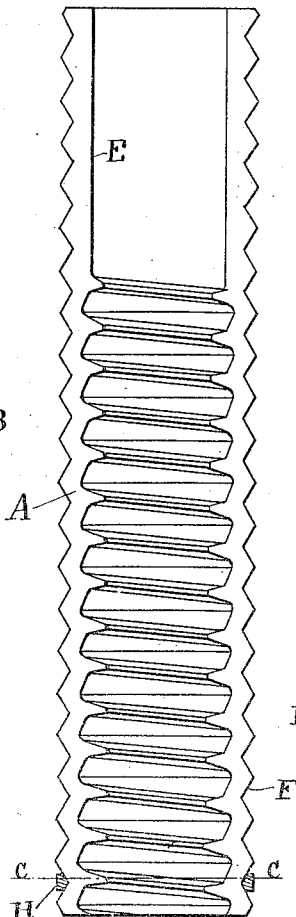


Fig. 3

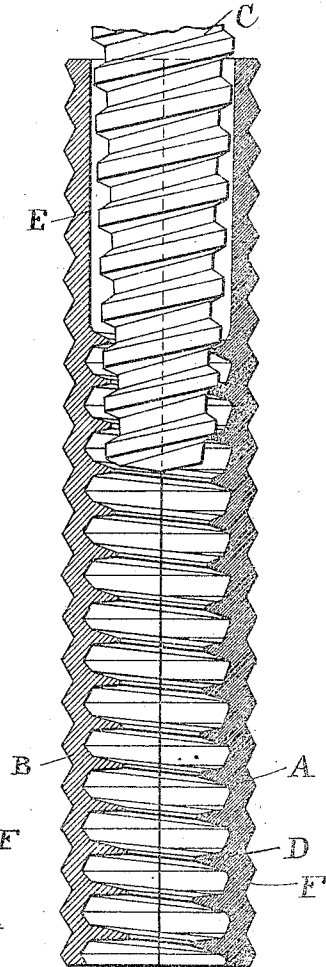
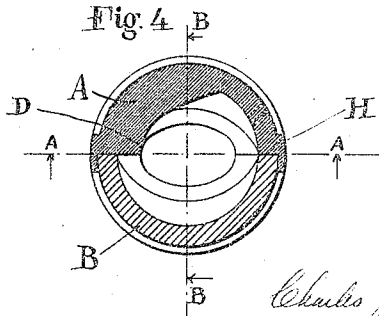


Fig. 4



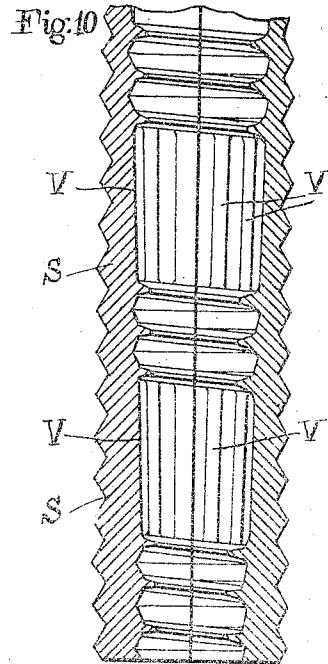
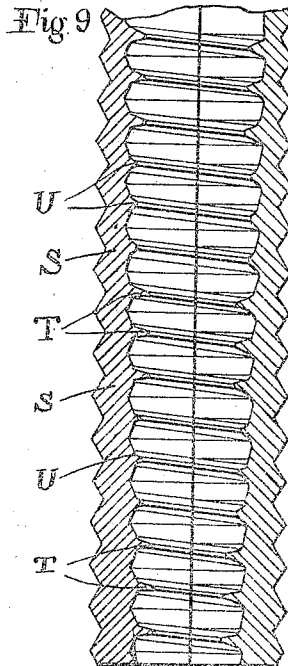
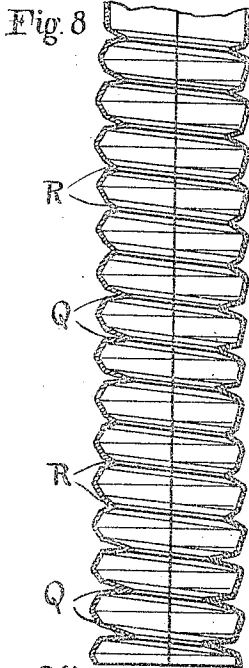
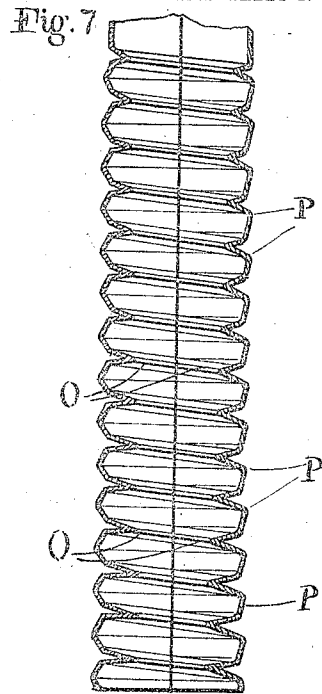
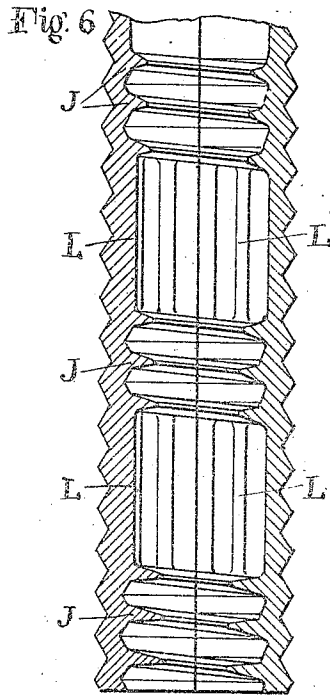
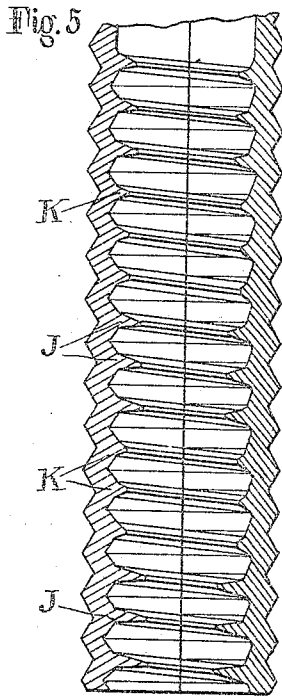
Witnesses
C. P. Lantry
C. A. Williams

Charles J. Clements Inventor
By his Attorneys Ames & Ogden

961,583.

Patented June 14, 1910.

2 SHEETS—SHEET 2.



Witnesses
C. P. La Fay
Chas. R. Eismann

Charles J. Clements Inventor
By his Attorneys Ramsey & Ogden

UNITED STATES PATENT OFFICE.

CHARLES J. CLEMENTS, OF NEW YORK, N. Y.

BOLT-ANCHOR.

961,583.

Specification of Letters Patent. Patented June 14, 1910.

Application filed June 16, 1908. Serial No. 438,752.

To all whom it may concern:

Be it known that I, CHARLES J. CLEMENTS, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Bolt-Anchors, of which the following is a specification accompanied by drawings.

This invention relates to a new bolt anchor or expansion shield, and the objects of the invention are to improve upon the construction of such devices, increase their efficiency of operation and produce a device which is light and strong and cheap to manufacture.

Further objects of the invention will hereinafter appear, and to these ends the invention consists of a bolt anchor substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a device embodying the invention; Fig. 2 is an interior elevation of one-half of the shield separated on the line A, A of Fig. 4; Fig. 3 is a longitudinal sectional view on the line B, B of Fig. 4; and Fig. 4 is a transverse sectional view on the line C, C of Fig. 2; Fig. 5 is a longitudinal sectional view of a modification of the device in which the threads are arranged in groups; Fig. 6 is a longitudinal sectional view of a modification of Fig. 5; Fig. 7 is a longitudinal sectional view of another modification; Fig. 8 is a longitudinal sectional view of a modification of Fig. 7; Fig. 9 is a longitudinal sectional view of a modification, having tapering walls; and Fig. 10 is a longitudinal sectional view of a modification of Fig. 9.

Referring to the drawings, Figs. 1 to 4, A and B represent the sections of the shield and C represents the bolt for expanding said shield or anchor. The shield may be made out of one or more sections as desired, and in accordance with this invention, the walls of each section are of approximately uniform thickness throughout, and are provided with interior screw threads. The interior bore of the shield tapers toward the inner end and this taper is obtained by increasing the height of the threads D as illustrated in the drawings. As the bolt is screwed into the sections they are expanded, to enable the anchor to grip tightly the aperture into which it is inserted. By securing the tapering bore

by means of the threads of progressively increasing height, it is possible to construct the sections with walls of uniform thickness, thus making the sections lighter than heretofore and more resilient and better able to withstand vibration and jars without loosening the bolt. Each section is preferably provided with a non-threaded portion E at its outer end and the exteriors of the sections are provided with rings F, or other projections, in order to obtain a hold in the wall or other place of use. Lugs H are provided for preventing longitudinal and transverse movement of the sections. As shown the lugs are provided on one section and they project over the other section, and are seated in recesses therein.

In Figs. 5 to 8 inclusive, modifications of the device are shown in which the walls of the sections are of substantially uniform thickness as before. In Fig. 5 the tapering screw threaded bore is obtained by means of groups of higher and lower threads, the higher threads J increasing in height toward the inner end of the anchor, and the lower or depressed threads K being arranged between the groups of higher threads. The intermediate groups of lower threads increase the strength of the anchor and this increase of strength may also be obtained by the construction shown in Fig. 6, in which strengthening ribs L are shown between the groups of threads J. These ribs may be of any suitable form and are shown in this instance extending longitudinally of the device, but they may, if desired, consist of transverse ridges, spiral ridges, or they may be formed by crimping the walls of the sections.

In Fig. 7, the screw threaded bore is obtained by corrugating the metal of the sections to form the interior threads or corrugations O and exterior corrugations P. As stated, the walls are of uniform thickness and the tapering bore is obtained by increasing the height of the corrugations O toward the inner end of the anchor. According to this construction, the planes of the summits or tops of the outer corrugations P are substantially parallel to the axis of the bore to enable the anchor to be placed in a cylindrical aperture and expanded therein.

In Fig. 8, the corrugations are arranged in groups, and the higher corrugations Q in-

crease in height toward the inner end of the anchor. Between the groups of higher corrugations R are provided the lower or depressed corrugations R for strengthening purposes. Instead of corrugations R, the sections may be strengthened by means of ribs or ridges as in Fig. 6.

In Figs. 9 and 10, the walls S of the sections are shown tapering instead of uniform in thickness and the interior screw threads are arranged in groups of higher threads T and lower threads U, but in this instance, the higher threads are of uniform height. In Fig. 10, strengthening ridges or ribs V are provided between the groups of higher threads.

I claim and desire to obtain by Letters Patent the following:

1. A bolt anchor having outwardly cylindrical walls of uniform thickness, and a tapering screw threaded bore.
2. An anchor bolt having outwardly cylindrical walls of uniform thickness, and an interior tapering bore obtained by screw threads of progressively increasing height toward one end of the anchor.
3. A bolt anchor having outwardly cylindrical walls of uniform thickness, and an interior tapering screw threaded bore, said screw threads progressively varying in height.
4. A bolt anchor having outwardly cylindrical walls of uniform thickness, and a tapering bore formed by screw threads of varying height, one end of said bore being unscrew threaded and the exterior of the anchor being provided with annular projections.
5. A bolt anchor, comprising a plurality of sections, each having outwardly cylindrical walls of uniform thickness, and a tapering bore formed by screw threads of varying height, the exterior of the anchor being provided with annular corrugations.
6. A bolt anchor having outwardly cylindrical walls of uniform thickness, and a tapering bore formed by screw threads of varying height.
7. A bolt anchor having outwardly cylindrical walls of uniform thickness and a tapering screw threaded bore having groups

of threads increasing in height toward one end.

8. A bolt anchor having outwardly cylindrical walls of uniform thickness and a tapering screw threaded bore having groups of higher and lower threads, the higher threads increasing in height toward one end.

9. A bolt anchor having outwardly cylindrical walls parallel to the axis of the bore and of uniform thickness, and interior threads increasing in height toward one end.

10. A bolt anchor having outwardly cylindrical walls of uniform thickness and a tapering screw threaded bore having groups of higher and lower threads, the pitch diameter of the higher threads decreasing toward one end.

11. A bolt anchor provided with groups of interior engaging threads and strengthening ribs arranged between said groups of threads.

12. A bolt anchor provided with groups of interior threads and strengthening ribs arranged longitudinally between said groups of threads.

13. A bolt anchor comprising a plurality of sections, each section having a main body portion or base of uniform thickness and of cylindrical exterior contour, the interior being screw threaded and forming a tapering bore by a progressive increase in the height of the threads toward one end of the anchor, the exterior of each section having registering annular corrugations.

14. A bolt anchor comprising a plurality of sections, having main body portions or bases of uniform thickness throughout, and exteriorly cylindrical, the interior of each section having screw threads progressively varying in height to form a tapering bore, the bases of the threads being at a uniform distance from the axis of the bore, and the exterior of the sections having annular corrugations.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES J. CLEMENTS.

Witnesses:

EDW. A. STULZ,
I. B. MOORE.