

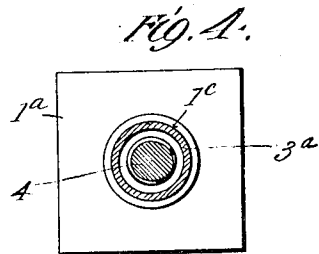
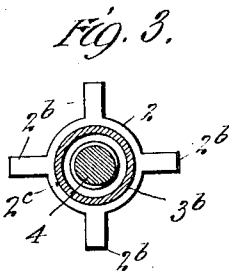
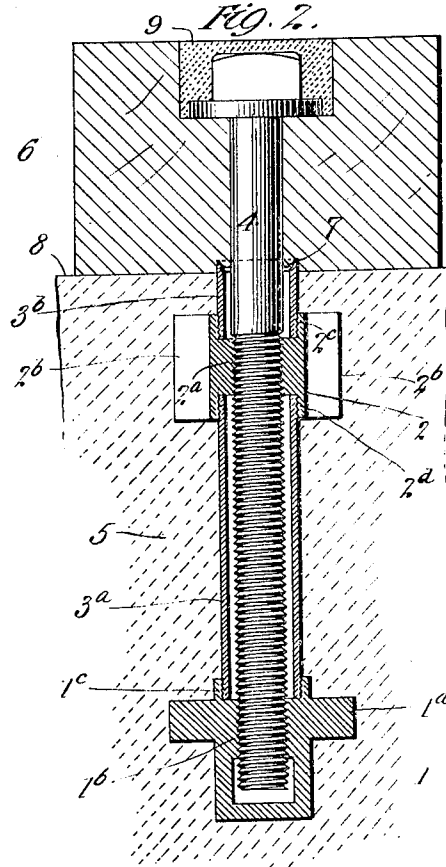
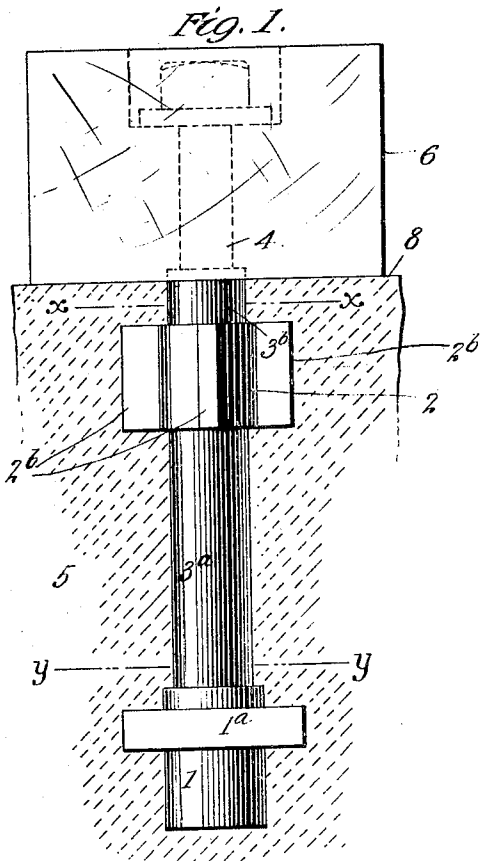
F. R. W. CLEVERDON & J. DE TEMPLE.

BOLT ANCHORAGE.

APPLICATION FILED MAY 15, 1908.

913,875.

Patented Mar. 2, 1909.



Witnesses:
Franz Ober
Arthur

Inventors
Frederick R. W. Cleverdon
Joseph De Temple
 By their Attorneys
Rosenbaum & Stockbridge

UNITED STATES PATENT OFFICE.

FREDERICK R. W. CLEVERDON, OF NEW ROCHELLE, AND JOSEPH DE TEMPLE, OF
NEW YORK, N. Y.

BOLT-ANCHORAGE.

No. 913,875.

Specification of Letters Patent.

Patented March 3, 1909.

Application filed May 15, 1908. Serial No. 433,023.

To all whom it may concern:

Be it known that we, FREDERICK R. W. CLEVERDON and JOSEPH DE TEMPLE, citizens of the United States, residing, respectively, at New Rochelle, county of Westchester, and State of New York, and the city, county, and State of New York, have invented certain new and useful Improvements in Bolt-Anchorage, of which the following is a full, clear, and exact description.

This invention relates to anchorages for bolts which are received in a wall or ceiling of concrete or similar material, for the purpose of securing wooden beams and other objects firmly in place thereon.

The invention is most particularly adapted for use with concrete piers and sea walls, although the use is in no sense restricted to these constructions.

It is the purpose of the invention to provide a very firm fastening or anchorage which is adapted for use with bolts of different lengths, and which imparts great lateral rigidity to the bolt as well as resistance against longitudinal strains. We make use of certain castings or fixtures which are assembled together by intermediate sections of ordinary gas pipe, said sections being threaded into the fixtures or castings in a manner similar to the use of ordinary pipe couplings. Two styles of fixtures or castings are employed, one of which is adapted to resist longitudinal displacement strains on the bolt, and the other of which imparts a transverse rigidity thereto. These fixtures or castings are assembled together into a unitary structure by connecting sections of gas pipe so as to form a complete, water-tight chamber in which the bolt is received. On account of the water tight character of this chamber in which the bolt is received, it is evident that the latter is always freely removable. Not only is the concrete kept away from the threads of the bolt, but all moisture and salt water is also excluded, so as to even prevent oxidation. It is important in practice to have the bolts freely removable in case of repair of the structure and also in case the bolt has its head broken off. Without this freely removable characteristic of the bolts, it would be necessary to blast out the entire anchorage in order to make any change or repairs. If desired, the bolt receiving chamber can be packed with grease or paraffin to further protect the bolts from oxidation.

The invention consists in the features of construction and combination hereinafter set forth and shown and finally particularly pointed out in the appended claims.

In the drawings: Figure 1 is a side elevation of a bolt anchor embodying the principles of this invention, embedded in a concrete wall; Fig. 2 is a vertical sectional view of the same; Fig. 3 is a section on the line $x-x$ of Fig. 1, showing the form of the upper fixture or casting, and Fig. 4 is a section on the line $y-y$ of Fig. 1, showing the form of the lower fixture or casting.

Referring to the drawings, in which like parts are designated by the same reference sign, 1 indicates a fixture, casting, or member having a flange or enlargement 1^a and a threaded bolt-receiving portion 1^b . The member 1 is conveniently made of cast iron of generally cylindrical outline with an interior chamber or cavity also of cylindrical outline and reduced or restricted in diameter at its middle portion 1^b , where it is internally threaded to receive the bolt. Near its outer edge this chamber or cavity is additionally threaded at 1^c to receive a gas pipe of a size large enough to inclose the bolt used. The flange or enlargement 1^a may be of any desired form, but is preferably a comparatively heavy square or rectangular plate integral with the body, 1 and extending in a plane transverse to the axis thereof. This form of enlargement becomes very firmly embedded in the surrounding mass of concrete and resists strains against longitudinal displacement with great efficiency. In addition to the fixture or member 1, there is an entirely separate member 2 which is also preferably made of cast iron of generally cylindrical outline. This member has a longitudinal, generally cylindrical interior cavity with a reduced or restricted portion 2^a which is internally threaded to receive the bolt.

2^b designates ribs which are integral with the body 2 and extend outward in a series of vertical, radial, spaced-apart planes from the surface thereof. Four of these ribs 2^b are shown, projecting in directions at right angles to one another.

The cavity of the member 2 is internally threaded at its ends 2^c and 2^d to receive an ordinary gas pipe or pipes of the size already mentioned in connection with the inner fixture 1. 3^a and 3^b designate the sections of this pipe, properly assembled on the mem-

bers 1 and 2, so as to form a complete anchorage for a bolt 4. The length of the pipe sections 3^a and 3^b is, of course, made to accord to the particular work at hand and to the dimensions of the bolt used.

In use the members 1 and 2 are assembled upon the pipe sections 3^a and 3^b and embedded in the concrete or other wall or masonry in the desired locations. The bolt should be in place when the device is assembled in the concrete, in order that the threads of the two anchorage portions shall be in proper relation to one another. The bolt may be removed as soon as the concrete has set, and is certain to enter the threads of both anchorage portions properly thereafter. The bolts 4 are then passed through the beams or other objects 6 to be secured, so that they extend inwardly through the threaded portions 2^a and 1^b of the respective anchorage fixtures 1 and 2. The inner fixture 1 is adapted to resist any longitudinal displacement strains which are imposed upon the bolt, and the outer fixture 2 is adapted to resist any transverse forces which may be applied to the bolt due to the weight of the beams or any other similar laterally acting forces. Each of the fixtures is formed exclusively for its particular work, and the location of each fixture is based on its particular function, since in each case an adequate mass of concrete is presented in the path of the particular strains to be resisted.

An additional feature of the invention lies in the means by which the device is made perfectly water-tight in use. For this purpose the upper or outer pipe section 3^b is reamed into a sharp edge 7 which projects slightly above the surface 8 of the concrete. When the beam 6 is screwed in place, this sharp edge cuts into the wood and establishes a water-tight joint therewith. As the bolt heads are ordinarily countersunk or embedded in pitch or similar material 9, it is evident that ingress of water to the interior of the bolt anchorage is absolutely cut off.

What we claim is:

1. A bolt anchorage comprising two separate, internally-threaded fixtures and a pipe section rigidly connecting the same

with their threaded portions in alinement with one another.

2. A bolt anchorage comprising a bolt, a pipe section, a fixture having an interior chamber or cavity internally threaded to receive said bolt and also threaded to receive said pipe section, said fixture having a flange or enlargement in a plane transverse to the axis of its threaded portions.

3. A bolt anchorage comprising a bolt, a pipe section, a fixture of generally cylindrical outline and having an interior cavity threaded near its outer end to receive said pipe section and having a reduced or restricted portion internally threaded to receive said bolt, said fixture having a flange or enlargement in a plane transverse to the axis of its bolt-receiving threaded portion.

4. A bolt anchorage comprising a fixture, a bolt, pipe sections, having a flange or enlargement and internally threaded at different portions to receive one of said pipe sections and to receive said bolt, and a separate fixture having radial ribs and threaded to receive said bolt, said second fixture also having two internally-threaded portions to receive the other of said pipe sections.

5. In combination, a fixture internally threaded to receive a bolt and having a flange or enlargement, a second fixture internally threaded to receive a bolt and having axially-extending ribs, a pipe section joining said fixtures with their bolt-receiving portions in alinement with one another, and a second pipe section projecting from said second fixture in alinement with the first.

6. A bolt anchorage comprising fixtures internally threaded to receive a bolt, a pipe section joining said fixtures, and a second pipe section projecting from the outermost fixture and having a sharp outer edge, whereby a wooden object to be clamped makes a water-tight joint therewith.

In witness whereof, we subscribe our signatures, in the presence of two witnesses.

FREDERICK E. W. CLEVERDON.
JOSEPH DE TEMPLE.

Witnesses:

WALDO M. CHAPIN,
JAMES D'ANTONIO.