

Sept. 18, 1923.

1,468,074

R. S. PEIRCE

ANCHORING DEVICE

Filed Nov. 15, 1920

Fig. 1.

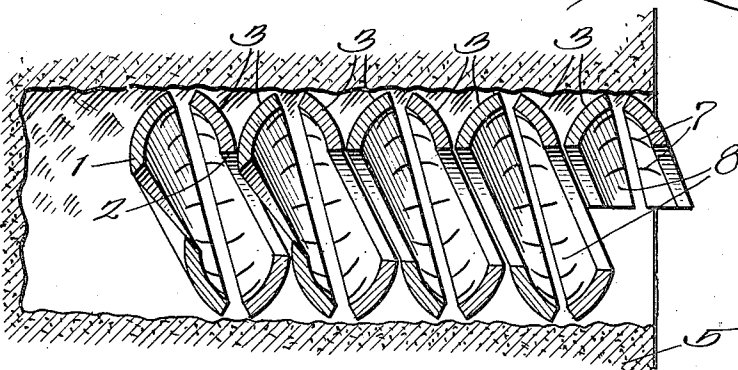


Fig. 2.

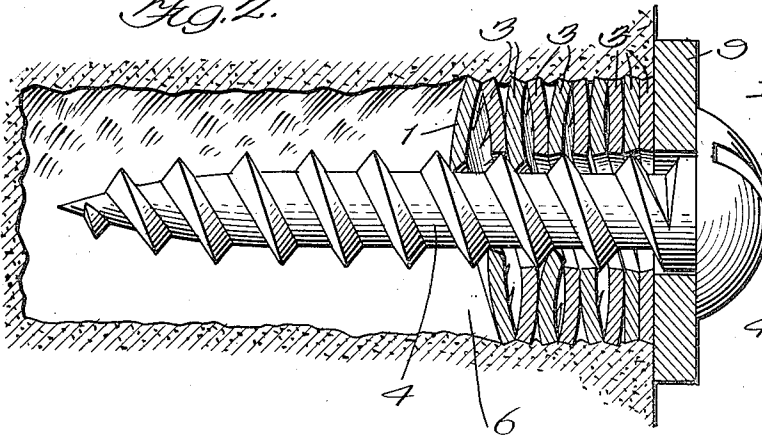


Fig. 3.

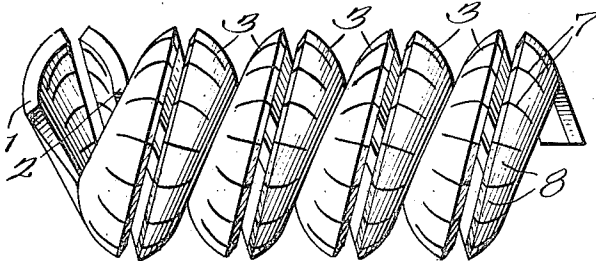


Fig. 5.

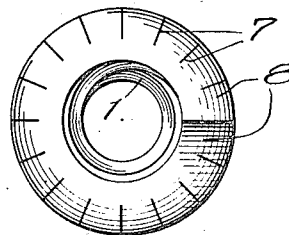
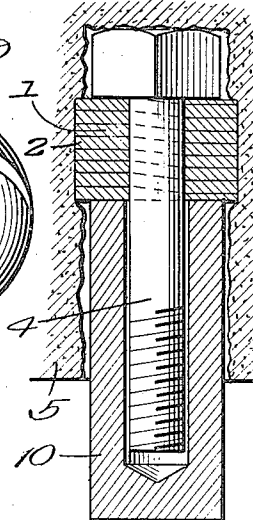


Fig. 7.

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UNITED STATES PATENT OFFICE.

RALPH S. PEIRCE, OF HINSDALE, ILLINOIS.

ANCHORING DEVICE.

Application filed November 15, 1920. Serial No. 424,028.

To all whom it may concern:

Be it known that I, RALPH S. PEIRCE, citizen of the United States, residing at Hinsdale, in the county of Du Page and State of Illinois, have invented a certain new and useful Improvement in Anchoring Devices, of which the following is a full, clear, concise, and exact description.

My invention relates to anchoring devices which are employed as supports or holding means for objects such, for example, as threaded bolts that are thereby assembled with walls or ceilings and which frequently serve to support objects that are to be held by walls or ceilings.

The anchoring device of my invention, in one of its embodiments, includes an integrally formed circular inclined member that encircles its axis a plurality of times, there being employed in combination with this member an element for reducing the inclination thereof to effect its transverse expansion.

In accordance with the preferred embodiment of the invention the circular member of the anchoring device is weakened at intervals at its peripheral portion, the weakening being desirably effected by forming fingers which terminate at the periphery of the circular member. Adjacent fingers may be oppositely inclined to produce a member which may readily be expanded by reducing or eliminating the inclination of the fingers. In the preferred embodiment of the invention the anchoring device employs two spirally intertwined members having engaging portions that are both inclined, these members being employed in combination with an element for reducing the axial dimension of the device to reduce the relative inclination between the members, thereby to effect the transverse expansion of each spiral member by the other.

I will explain my invention more fully by reference to the accompanying drawing in which Fig. 1 is a sectional view illustrating a wall portion with a hole therein and two spirally intertwined members disposed in the hole before the application thereto of the element for reducing the axial dimension of the members to effect their transverse expansion, a part of the contracting element being also shown in this figure; Fig. 2 shows the construction illustrated in Fig. 1 with the element in place that serves to

reduce the axial dimension of the intertwined members; Fig. 3 is a view in elevation of the intertwined members as they appear in Fig. 1; Fig. 4 is a side view of the structure shown in Fig. 3; and Fig. 5 illustrates another arrangement of the bolt.

Like parts are indicated by similar characters of reference throughout the different figures.

In Figs. 1 to 4, inclusive, I have illustrated two spirally intertwined members 1 and 2 having engaging portions that are both inclined as indicated at 3. As illustrated, the intertwined members 1 and 2 are separately formed and their inner spiral edges serve as threads to be engaged by the screw or bolt 4 whose threads serve to shorten the bore portion of the intertwined members as the screw or bolt is turned thereby to reduce the relative inclinations between the engaging parts of the spiral members and thereby force the transverse expansion of these members into tight engagement with the wall portion 5 containing the hole 6 in which the anchoring device is received. If the metal is sufficiently soft such transverse expansion of the spirally intertwined members may be effected without any special formation of the peripheral portions thereof but if the material of which the intertwined members is formed is somewhat hard, brass for example, the peripheral portions of these members are weakened, as for example, by the provision of radial slits 7 therein that serve to form fingers 8 which terminate at the peripheries of the intertwined members. The bolt 4, in addition to serving as a tool for reducing the axial dimension of the intertwined members and thereby cause the transverse expansion thereof, may also be allowed to remain in the position to which it is finally adjusted in order that it may perform the further function of holding any object that is to be supported upon the ceiling or wall, such as that indicated at 9 in Fig. 2.

In Fig. 5 the bolt is reversed in position, the head of the bolt being at the inside end of the hole in the wall. The nut (not shown) is to be upon the exterior end of the bolt. The axial dimension of the element 1, 2 is reduced by use of the hollow punch 10, which is placed upon the bolt before the nut is applied to the bolt. This

punch may be struck by a hammer to bring the portions 1, 2 more perpendicular to the axis of the bolt.

While I have herein shown and particularly described the preferred embodiment of my invention I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit of my invention, but having thus described my invention I claim as new and desire to secure by Letters Patent the following:—

1. An anchoring device having two spirally intertwined members having portions upon each, engaging portions upon the other, these engaging portions being relatively formed to enable one member to effect the transverse expansion of the other upon reduction in the axial dimension of the anchoring device, in combination with an element for reducing the axial dimension of the anchoring device.

2. An anchoring device having a circular member inclined with respect to its axis and weakened at intervals at its peripheral portion, in combination with means for reducing the inclination of said member to effect its transverse expansion.

3. An anchoring device having a circu-

lar member inclined with respect to its axis and formed with fingers terminating at its periphery, in combination with means for reducing the inclination of said member to effect its transverse expansion.

4. An anchoring device having a circular member inclined with respect to its axis and formed with oppositely inclined fingers terminating at its periphery, in combination with means for reducing the inclination of said member to effect its transverse expansion.

5. An anchoring device having a spiral member inclined with respect to its axis and formed with fingers terminating at its periphery, in combination with means for reducing the inclination of said member to effect its transverse expansion.

6. An anchoring device having an integrally formed circular member encircling and inclined with respect to its axis a plurality of times, in combination with an element for reducing the inclination of said member to effect its transverse expansion.

In witness whereof, I hereunto subscribe my name this third day of November, A. D. 1920.

RALPH S. PEIRCE.