W. A. BRYANT.

EXPANSION BOLT.

APPLICATION FILED JUNE 14, 1909.

952,783. Patented Mar. 22, 1910.

Fig. 1.

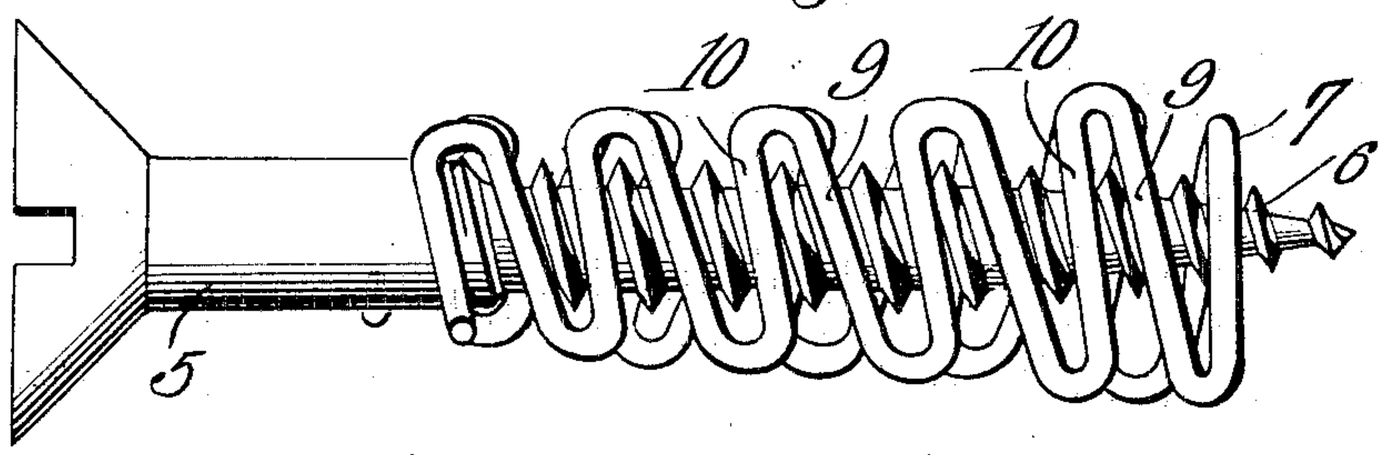


Fig. 2.

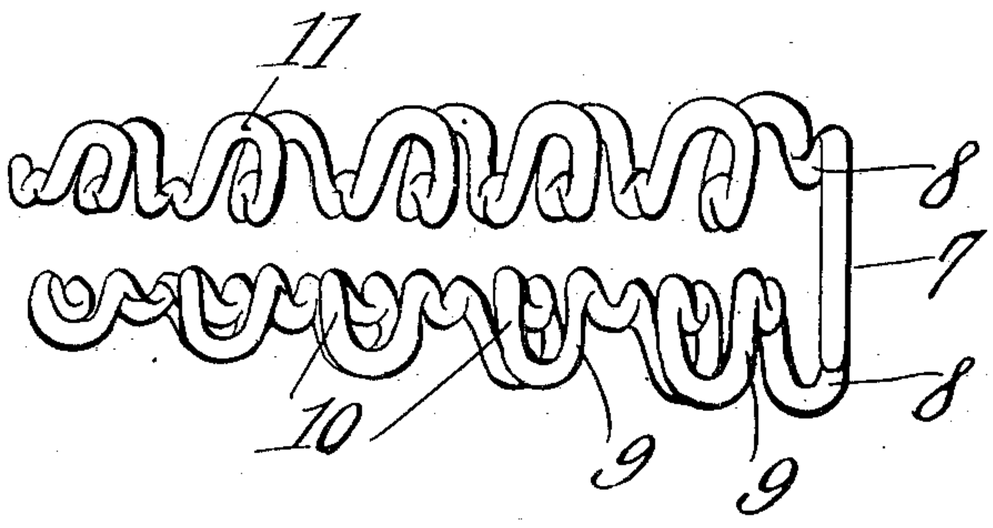


Fig. 3.

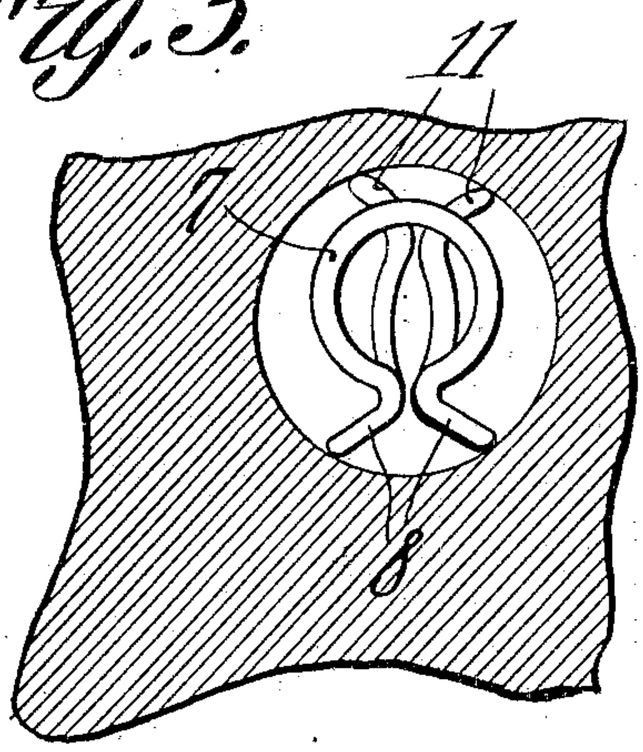
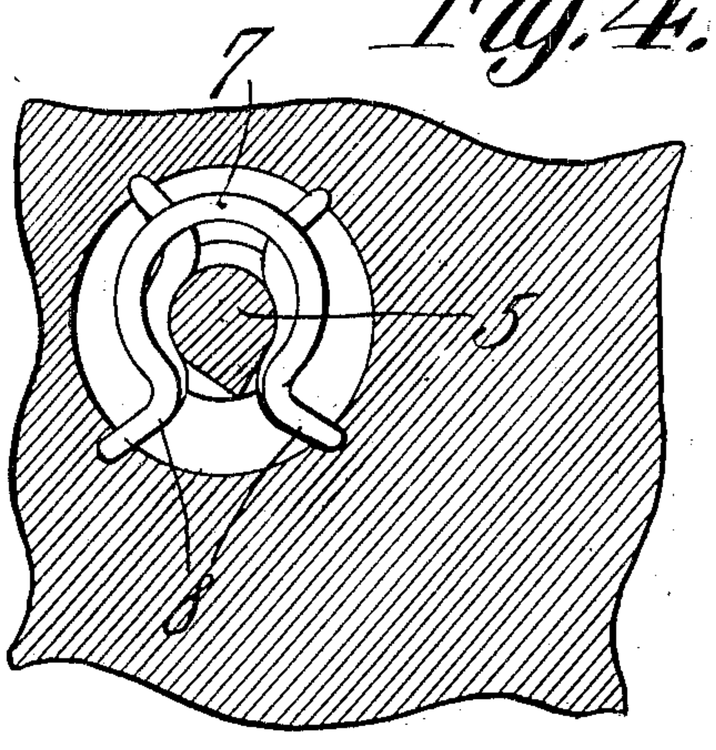


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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EXPANSION-BOLT.

952,783. Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed June 14, 1909. Serial No. 502,084.

To all whom it may concern:

Be it known that I, WILLIAM A. BRYANT, a citizen of the United States, residing at Wetumpka, in the county of Elmore and State of Alabama, have invented a new and useful Expansion-Bolt, of which the following is a specification.

It is the object of the present invention to provide an article for application to wood screws for holding such screws in place in openings which would otherwise be too large to receive and retain them,—in brick, stone or plastic materials.

Broadly speaking, the device embodying the present invention is constructed of a single strand of wire which is bent to form convoluted spaced portions the convolutions of which engage in the threads of the screw upon which the device is disposed, the said spaced portions being formed, further, with portions which project beyond the planes of the convolutions whereby when the spaced portions are separated to a greater or less degree, the said projecting portions will bite into the material into which the screw is being secured.

In the accompanying drawings, Figure 1 is a view in side elevation of an ordinary wood screw showing the device embodying the present invention applied thereto. Fig. 2 is a plan view of the device removed from the screw. Fig. 3 is a view in elevation of a piece of material formed with an opening into which the screw shown in Fig. 1 is to be fastened, the device being shown in end elevation in the said opening, and Fig. 4 is a view similar to Fig. 3 but showing the device expanded by the insertion of the screw between its spaced portions.

As above stated, there is shown, in Fig. 1 of the drawings, an ordinary wood screw, indicated by the numeral 5 and having formed thereon the usual threads 6. The device embodying the present invention and adapted for disposal upon the screw 5 whereby the screw may be secured in an opening of a diameter greater than the major diameter of the screw, is formed from a single strand of wire which is bent intermediate of its ends to form a substantially annular loop or eye indicated by the numeral 7. This eye 7 is open as is clearly shown in Figs. 3 and 4 of the drawings, and the wire at each terminal of the loop is bent to extend laterally in diverging lines as indicated by the numeral 8. Beyond the portions 8, the wire is bent to form approximately parallel convolutions of which certain ones are indicated by the numeral 9 and the others by the numeral 10. The convolutions 9 of each of the convoluted spaced portions or members thus formed are parallel as are also the convolutions 10 and all of the convolutions are inclined and the convolutions of the two spaced members are oppositely inclined. The convolutions 10 are more nearly vertical than are the convolutions 9 and both the convolutions 9 and the convolutions 10 are bowed outwardly to a slight degree as is clearly shown in Figs. 3 and 4 of the drawings, the convolutions of each of the spaced members being bent to extend outwardly at an angle as indicated by the numeral 11. The lower outwardly bent connecting portions 11 of the convolutions have the same angular extent as the portions 8 and all of the convolutions of each member are shortened successively from the connected ends of the members to their free ends as are also the angularly directed connecting portions 11 of the said convolutions whereby a bodily tapering device is provided.

In using the device just described, it is placed, major end first, in the opening in which the screw 5 is to be secured and the screw is then rotated in the usual manner to cause it to thread into the device or in other words into position between the spaced members thereof. The intermediate outwardly bowed portions of the convolutions of both spaced members of the device will seat between the threads of the screw 5 and owing to the fact that this screw is tapered, the said spaced portions will be gradually expanded or separated whereupon the angularly directed connecting portions of the convolutions will bite into the material into which the screw is to be secured; this is clearly shown in Fig. 4 of the drawings. It will be observed that the angularly directed connecting portions of the convolutions project beyond the plane of the intermediate portions of the convolutions and that consequently the screw 5 may be secured in an opening of a diameter much greater than that of the screw itself. It will further be observed from an inspection of the draw-

ings and more particularly Fig. 2 thereof that the substantially annular loop 7, connecting the spaced convoluted members of the device, supports these members in proper spaced relation and in position to receive between them the threaded shank of a screw. It will be observed, furthermore, from the drawings that by reason of the fact that the convolutions 10 are more nearly vertical than are the convolutions 9, these convolutions 10 will lie substantially diagonally across the spaces between the threads which spaces they occupy whereas the convolutions 9 have the same line of extension as have the threads and that therefore while the convolutions 9 serve to guide the screw to position between the spaced members of the device, the convolutions 10 effectually hold the screw against play which would otherwise occur if the wire of which the device is formed was of small diameter and all of the convolutions of the two spaced members should have the same line of extent as the threads in which they engage.

What is claimed is:—

1. A device of the class described comprising spaced, connected members having relatively angularly displaced thread engaging portions, the connection permitting of spreading apart of said members.

2. A device of the class described comprising spaced, connected members having relatively angularly displaced thread engaging portions and portions projecting beyond the planes of said thread engaging portions, the connection permitting of spreading apart of said members.

3. A device of the class described comprising tapering spaced, connected members having relatively angularly displaced thread engaging portions, the connection per ting of spreading apart of said member

4. A device of the class described comp ing tapering spaced, connected mem having relatively angularly displaced thr engaging portions and portions project beyond the planes of the first mentio portions, the connection permitting spreading apart of said members.

5. A device of the class described compr ing tapering spaced, connected memb having relatively angularly displaced thre engaging portions and portions projecti beyond the planes of the first mentioned p tions, said projecting portions being c creased in length in order in the directi of taper of the said members, the connecti permitting of spreading apart of said me bers.

6. A device of the class described compri ing tapering spaced members connected their major ends and having relatively a gularly displaced thread engaging portio and portions projecting beyond the plan of the thread engaging portions and d creased in length successively in order the direction of taper of the said member

7. A device of the class described compri ing spaced members having relatively a gularly disposed thread engaging convol tions, said convolutions decreasing in lengt toward corresponding ends of the member

In testimony that I claim the foregoin as my own, I have hereto affixed my signa ture in the presence of two witnesses.

WILLIAM A. BRYANT.

Witnesses:
F. LOYD TATE,
M. D. STILL.