J. E. GOEWEY.

EXPANSION BOLT.

APPLICATION FILED JAN. 19, 1911.

1,014,144.

Patented Jan. 9, 1912.

Fig. 1.

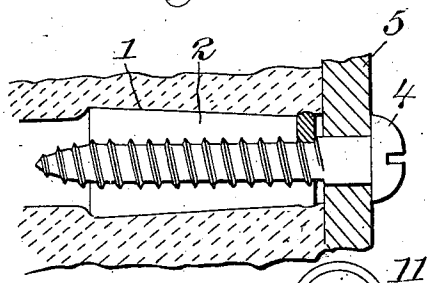


Fig. 10.

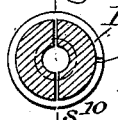
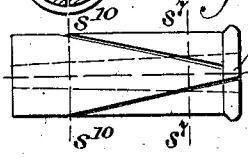
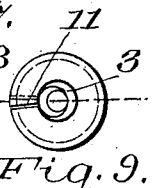


Fig. 7.





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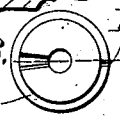


Fig. 9.

Fig. 4.

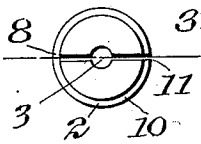


Fig. 2.

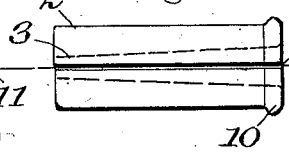


Fig. 3.

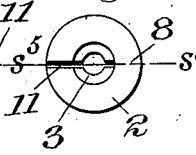


Fig. 11.

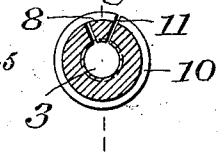


Fig. 5.

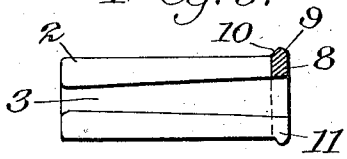


Fig. 12.

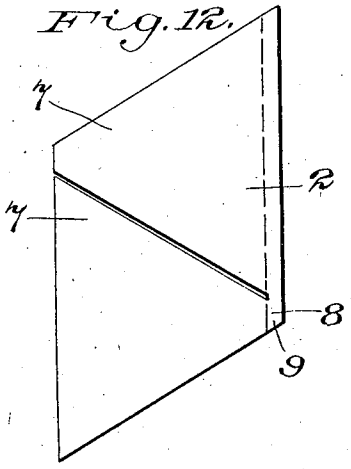
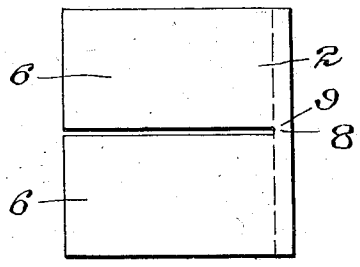


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES EDWARD GOEWEY, OF NEWARK, NEW JERSEY.

EXPANSION-BOLT.

1,014,144. Specification of Letters Patent. Patented Jan. 9, 1912.

Application filed January 19, 1911. Serial No. 603,429.

To all whom it may concern:

Be it known that I, JAMES EDWARD GOEWEY, a citizen of the United States of America, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Expansion-Bolts, of which the following is a specification.

My invention relates generally to expansion bolts and has particular reference to the construction of anchor bushings for use in connection therewith.

The object of the invention is to obtain parallel or, what amounts practically, to uniform radial expansion of the bushing throughout its entire length, thus increasing the holding pressure or grip upon the bolt and anchoring it more firmly and securely in position.

A device suitable for carrying my invention into effect is illustrated in the accompanying drawings. I wish it understood, however, that I do not limit myself to the exact form of construction shown, as various changes may be made therein without departing from the spirit and scope of my invention.

In the drawings: Figure 1 shows my improved anchor bushing in use. Fig. 2 is a view in elevation of the bushing. Fig. 3 is a view of the outer end and Fig. 4 is a view of the inner end thereof. Fig. 5 is a longitudinal section on the line s^5, s^5, of Fig. 3. Fig. 6 shows the bushing in the form of a blank. Fig. 7 shows a slight modification in the construction of the bushing. Fig. 8 is a view of the outer end and Fig. 9 is a view of the inner end of the modified bushing. Fig. 10 is a cross section on the line s^{10}, s^{10}, of Fig. 7. Fig. 11 is a similar view on the line s^7, s^7, of Fig. 7 and Fig. 12 shows the blank of the modified form of bushing.

Referring now to the drawings, 1 represents a socket, formed in the usual manner in a wall of stone, brick or cement or the like. Fitted in the socket, there is a soft metal bushing 2, provided with a tapered bore 3. A screw-bolt is indicated at 4, of a form suitable for entering and expanding the bushing sufficiently within the socket to produce the required pressure necessary to anchor the bolt in position, the thread of the screw cutting its way into the metal of the bushing in the usual manner. A bracket or other device is represented at 5, as supported by the bolt.

Expansion bolts, such as are now commonly used, are anchored by expanding the inner end only of the bushing there being practically no holding pressure or grip exerted by the major portion of the body of the bushing upon the bolt and as a result, there is more or less tendency of the bolt to vibrate and work loose. In order to avoid this objectionable feature, it is the object of the present invention to equalize the holding pressure or grip upon the bolt throughout the entire length of the bushing and this is accomplished by giving the bushing a shape such that the entrance of the screw-bolt therein produces a parallel or, in effect, a uniform radial expansion of the bushing from one end to the other.

As shown in the drawings, the bushings, in blank, (see Figs. 6 and 12) are each formed of twin members, which may be rectangular in outline, as indicated at 6, or triangular, as indicated at 7, such members being shaped and assembled in separated relation, to form a two-part cylinder (see Figs. 2 to 5 and 7 to 11) having a tapered bore and united at one point only, as indicated at 8, at or near the outer or larger end of the bore, by a tie-piece 9. Preferably the tie-piece is given the form of a terminal enlargement, being here shown as an approximately C-shaped or split collar 10, the split or opening 11 in which coincides with the line of separation of the members of the bushing proper, as clearly appears in Figs. 3 and 9. The members of the bushing being thus united at one point only, by a tie-piece having the small cross sectional area of the terminal collar, are maintained in proper relation for all practical purposes and are, at the same time, free to yield readily to the expanding action of the screw-bolt. In thus yielding, a parallel or radial expansion of the bushing members follows and results in the bolt being gripped with equal pressure throughout the entire length of the bushing and firmly and securely held from vibrating or working loose and rendering the support insecure.

The use, operation and many important advantages of the invention will be apparent from the foregoing description.

Having, therefore, described my invention, I claim:

1. An anchor-bushing for screws, the blank of which has its opposite sides substantially equal and parallel, said blank be-

ing divided lengthwise into two approximately triangular members shaped and assembled in separated relation to form a two-part cylinder provided with a tapered bore, a tie-piece uniting the members, and a screw adapted to enter the bore and expand the cylinder.

2. An anchor bushing for screws consisting of a cylinder of metal divided lengthwise into two parts, and provided with a smooth tapered bore, a member of C-shaped cross section uniting said cylinder parts at the larger end of the bore, and a coöperating screw adapted to cut its way into the tapered bore and produce parallel expansion of the cylinder parts.

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