

1,101,302.

Patented June 23, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

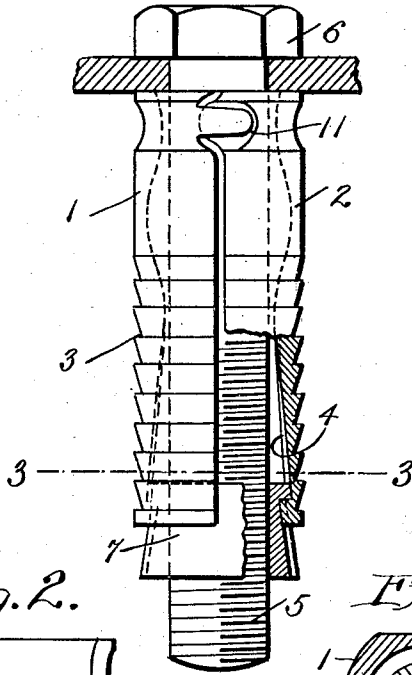


Fig. 5.

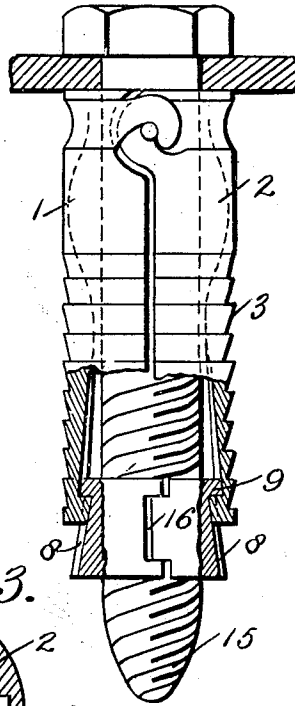


Fig. 2.

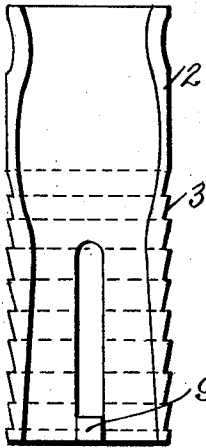


Fig. 3.

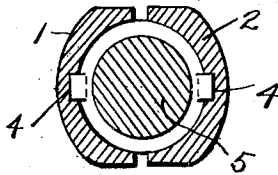


Fig. 4.

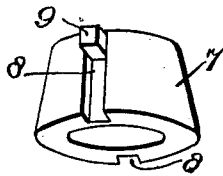


Fig. 7.

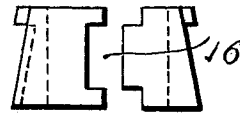
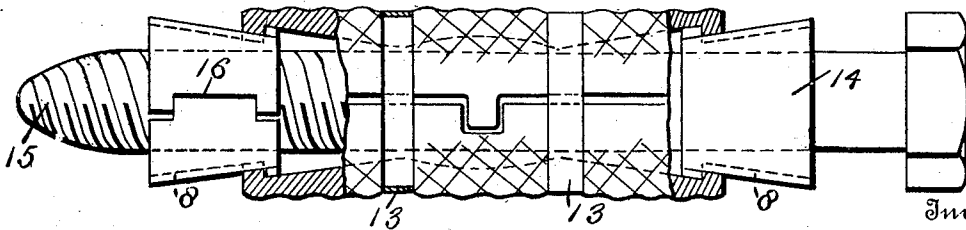


Fig. 6.



Inventor

Witnesses
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2 SHEETS—SHEET 2.

Fig. 8.

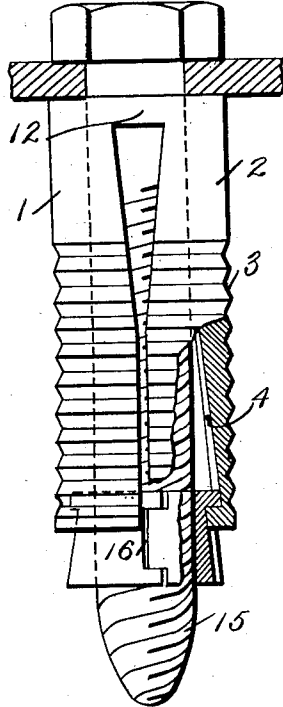


Fig. 9.

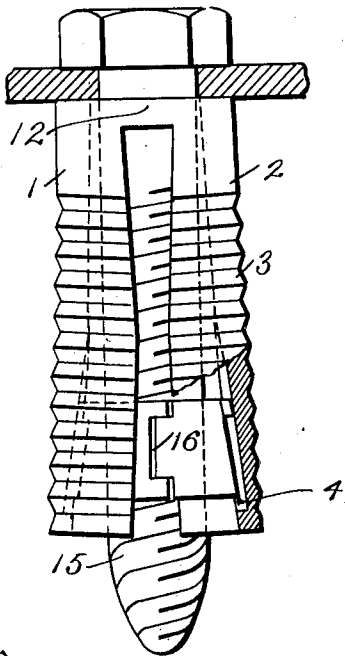
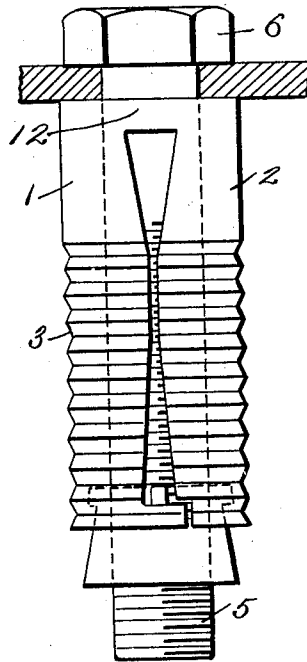


Fig. 10.



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UNITED STATES PATENT OFFICE.

DANIEL MASOR, OF NEW YORK, N. Y.

EXPANSION-BOLT.

1,101,302.

Specification of Letters Patent. Patented June 23, 1914.

Application filed June 25, 1913. Serial No. 775,707.

To all whom it may concern:

Be it known that I, DANIEL MASOR, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Expansion-Bolts, of which the following is a specification.

This invention relates to expansion bolts and has for its object to provide a simple, cheap and efficient article of this character that may be used many times without disturbing the relative position of the various parts.

To these ends the invention consists in the novel details of construction and combination of parts more fully hereinafter described and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals designate like parts in all the views: Figure 1 is a side elevational view of my improved bolt with parts broken away for the sake of clearness. Fig. 2 is an inner face view of one of the expanding jaw members. Fig. 3 is a cross section taken on the line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of the feed nut. Fig. 5 is a view showing a modified form of my improved bolt with parts broken away for the sake of clearness. Fig. 6 is a modification of another form of my improved bolt with parts broken away for the sake of clearness. Fig. 7 is a detail of a modified form of split feed nut showing the parts slightly separated. Fig. 8 is a modification of another form of my improved bolt with parts broken away for the sake of clearness. Fig. 9 is a view similar to Fig. 8 showing the bolt in expanded position. Fig. 10 is a still further modification of my improved form of bolt.

My improved bolt is intended for securing objects to stone, ceramic or similar types of walls wherein the ordinary bolt is unfit for accomplishing this purpose, and comprises a pair of opposed hollow jaw members 1 and 2 roughened as at 3, on their outer surfaces and provided on their inner surfaces with the oppositely disposed grooves 4 which taper inwardly from the end toward the central portion thereof.

Through the jaw members is inserted a screw threaded bolt 5 provided at its upper end with the usual head 6 and secured to its lower or screw-threaded end is a tapering feed nut 7 which is provided on its outer

surface with a pair of oppositely disposed grooves 8 which aline at the inner or reduced end of the nut, with a pair of oppositely disposed shoulders or projections 9. These projections are arranged for slidably operating within the grooves 4 of the jaw members and to prevent the nut from becoming separated from the jaw members when in their closed position, a pair of lugs 9' are also provided at the outer end of the grooves 4 against which the nut projections 9 abut, as clearly shown on the drawings. By slidably arranging the feed nut within the jaw members as just described, it will be seen that the feed nut will be prevented from turning and that the jaws will be expanded when the head of the bolt is operated.

It will be noted that I have shown various forms in which my improved expansion bolt may be made, for instance in both Figs. 1 and 5 I have shown the jaw members 1 and 2 pivotally connected at one end as at 11, while in Figs. 8, 9 and 10 the jaw members are formed of one piece and resiliently connected at one end, as at 12.

In the form shown in Fig. 6 the jaw members are laterally connected by means of the steel bands 13 and the expansion of these jaws is accomplished by means of both the feed nut 8 located at one end of the bolt and the reamed nut 14 at the other end of the bolt, when the head of the bolt is operated.

By referring to Figs. 5, 6, 8 and 9, it will be seen that when a lag screw 15 is used, the feed nut may be split as shown, for the purpose of casting the same and thereby doing away with the expense of machining the screw thread thereon. When this form of split feed screw is used I arrange the parts with the tongue and groove connection as shown for the purpose of preventing the separation of the parts when the bolt is in use.

By providing the jaw members with the roughened teeth like projections, as shown, I obtain a very firm and efficient grip when the bolt has been secured to position and one in which it is practically impossible to remove the bolt until the same has been loosened.

It is obvious that those skilled in the art may vary the details of construction and arrangements of parts without departing from the spirit of my invention and therefore I

do not wish to be limited to such features except as may be required by the claims.

What is claimed as new is:

1. In an expansion bolt, the combination of a pair of opposed jaw members having oppositely disposed grooves on their inner surfaces and lugs arranged at the ends of the grooves, a threaded bolt passing through the jaw members and provided with a feed nut having oppositely disposed grooves on its outer surface and lugs arranged at the ends of the grooves, said lugs of the jaw members arranged for sliding movement within the grooves of the nut and the said lugs on the nut arranged for sliding movement within the grooves of the jaw members for the purpose set forth.

2. In an expansion bolt, the combination of a pair of opposed jaw members having oppositely disposed grooves on their inner surfaces, a threaded bolt passing through the jaw members and provided with a split feed nut having oppositely disposed lugs arranged within the grooves of the jaw members, said split nut being further provided with tongue and groove connections for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL MASOR.

Witnesses:

JOHN A. DONEGAN,

M. E. LAUGHLIN.

It will be noted that I have shown various forms in which my improved expansion bolt may be made, for instance in both Figs. 1 and 2 I have shown the jaw members 1 and 2 pivotally connected at one end as at 11, while in Figs. 3, 4 and 10 the jaw members are formed of one piece and resiliently connected as at 12. In the form shown in Fig. 6 the jaw members are laterally connected by means of the steel bands 13 and the expansion of these jaws is accomplished by means of both the feed nut 8 located at one end of the bolt and the nut 14 at the other end of the bolt, when the head of the bolt is operated. By referring to Figs. 3, 4, 8 and 9, it will be seen that when a jaw screw 15 is used, the feed nut may be split as shown for the purpose of casting the same and thereby doing away with the expense of machining the jaw screw thread thereon. When the form of split feed screw is used I arrange the parts with the tongue and groove connection 16 as shown for the purpose of preventing the separation of the parts when the bolt is in use. By providing the jaw members with the rounded teeth like projections as shown I obtain a very firm and efficient grip when the bolt has been secured to position and one in which it is practically impossible to remove the bolt until the same has been loosened. It is obvious that those skilled in the art may vary the details of construction and arrangement of parts without departing from the spirit of my invention and therefore I enclose herewith a number of drawings

relating to the accompanying drawings showing a part of this specification in which the numerals designate the parts in all the views. Fig. 1 is a side elevational view of my improved bolt with parts broken away for the sake of clearness. Fig. 2 is an inner view of one of the expanding jaw members. Fig. 3 is a cross section taken on the line 3-3 of Fig. 1. Fig. 4 is a detail perspective view of the feed nut. Fig. 5 is a perspective view of a modified form of my improved bolt with parts broken away for the sake of clearness. Fig. 6 is a modification of another form of my improved bolt with parts broken away for the sake of clearness. Fig. 7 is a detail of a modified form of split feed nut and showing the parts slightly separated. Fig. 8 is a modification of another form of my improved bolt with parts broken away for the sake of clearness. Fig. 9 is a perspective view of my improved bolt in a position similar to Fig. 8 showing the bolt in an unthreaded position. Fig. 10 is a further modification of my improved form of bolt with an improved bolt inserted for a screw. It appears to those certain or similar types of bolts which the ordinary bolt is unfit for use in. It is to be understood that the purpose and compass of my invention is not limited to the combination of opposed hollow jaw members 1 and 2, as shown in Fig. 1, and that other suitable forms and provided on their inner surfaces and oppositely disposed grooves 4 and 5 which extend inwardly from the end toward the central portion thereof. Although the jaw members 1 and 2 are shown as being provided at the opposite ends of the bolt, it is to be understood that they may be provided at the same end of the bolt and be arranged in a position to