D. MASOR.

EXPANSION BOLT.

APPLICATION FILED JULY 5, 1913.

1,130,003.

Patented Mar. 2, 1915.

Fig. 1.

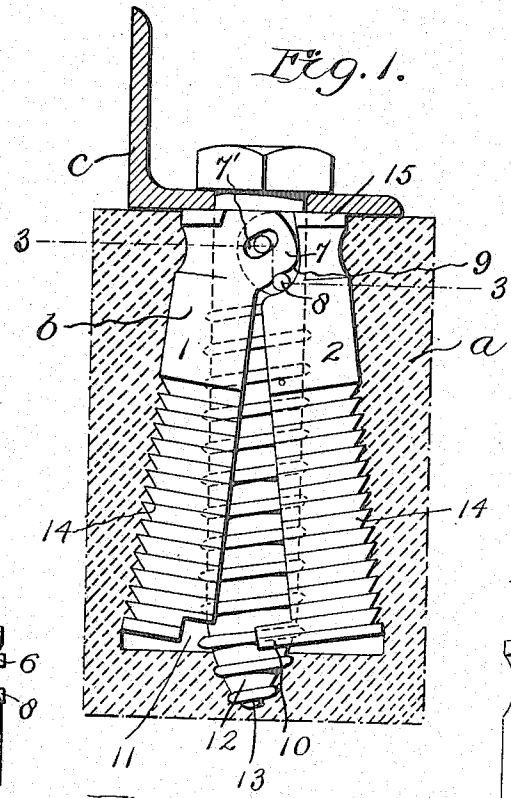


Fig. 4.

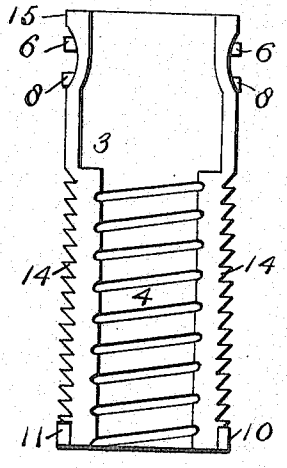


Fig. 5.

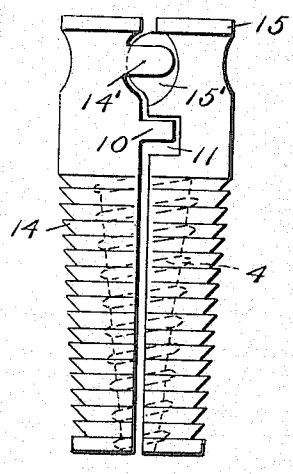


Fig. 2.

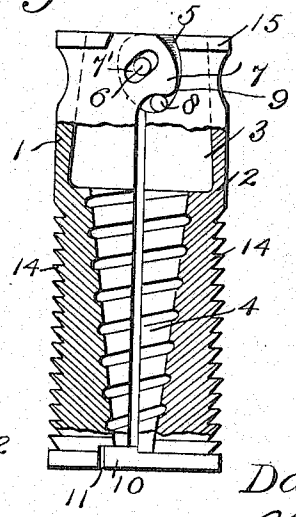
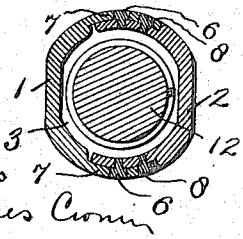


Fig. 3.



Witnesses

C. James Cronin

M. E. Laughlin

Inventor

Daniel Masor

By Victor J. Evans

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DANIEL MASOR, OF NEW YORK, N. Y.

EXPANSION-BOLT.

1,130,003. Specification of Letters Patent. Patented Mar. 2, 1915.

Application filed July 5, 1913. Serial No. 777,477.

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.

The general object of the invention is to provide an expension bolt for securing an object to a stone, ceramic or other type of wall, so that when the bolt is secured to position thereon it will be practically impossible to become loosened or displaced.

A further object of the invention is to provide a comparatively simple and inexpensive expansion bolt with but few parts and one which when assembled, will not become separated and lost during shipment.

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 sectional view of a wall and angle bar and showing my improved bolt securing the parts together. Fig. 2 is a detail view of the bolt partly in section and partly in side elevation. Fig. 3 is a cross sectional view taken on the line 3—3 of Fig. 1. Fig. 4 is an inner face view of one of the expanding jaw members. Fig. 5 is a side elevational view showing a modified form of my improved bolt.

Referring to the drawings in detail *a* indicates a stone, ceramic or other similar type of wall, and *b* my improved expansion bolt for securing to one face of the wall an angle bar *c*.

The bolt comprises a pair of opposed jaw members 1 and 2 provided at one end with the interior hollow portion 3 and at the other end with a tapered screw-threaded portion 4. At the outer end portion of the jaw member 2 at each side thereof, are formed countersunk and projecting portions 5 in which are secured pivot pins 6. Projecting hooks 7 formed on the outer end portion of the jaw member 1 and provided with the slotted opening 7′, are mounted within the countersunk projections 5, the pivot pins 6 being mounted within slotted opening to form the union and pivotal connection of the jaw members, as clearly shown. Locking pins 8 are mounted within the countersunk portions of the jaw member 2 and arranged to contact with the outer edges 9 of the hooks 7 to prevent the accidental opening of the jaw members until the bolt is operated. To further assist in preventing the disengagement of the jaw members and to also prevent any lateral movement thereof, the jaw member 2 is provided at its outer end with extending lugs 10 which are arranged for engagement within the cut-away portions 11 of the jaw member 1. Through the jaw members is inserted a lag screw 12, the screw-threaded end 13 of which engages with the tapering threaded end of the jaw members and forces them outward when the head of the bolt is operated.

It is to be noted that both of the expanding jaw members are roughened and bowed on their outer surfaces which permits of a uniform contact with the wall of the drilled hole when they are secured to position. The outer surfaces of the jaw members are also provided with the straight but roughened side portions 14 which prevent the jaw members from turning within the drilled hole when the bolt is operated. A collar 15 formed on the upper ends of the expanding jaws, strengthens that pivoted portion of the bolt and further assists in forming a neat and flush joint at the union of the bolt and drilled hole at their exposed ends.

In the modification shown in Fig. 5 the pivot and locking pins are done away with and the projections 14′ on one of the jaw members, are fitted within the countersunk portions 15′ of the opposite jaw member. In this figure the lug 10 and cut-away portions 11 are also located near the pivot end of the jaws as shown.

In manufacturing, the jaw members are preferably cast of malleable iron and when assembled together the hook portions of one of the members, are sprung outward over the pivot pins and into place within the countersunk portions of the other jaw member. After the jaw members have been connected together the locking pins are then secured into position so that they contact with the outer edge of bulged portion of the hooks, thereby securely holding the pivoted jaw members in their closed or contracted position.

In use the contracted jaw members are first placed within the hole formed in the wall. The object to be held to the wall is then placed in its position in relation thereto and the lag screw is then inserted through the opening formed in the object and into the expanding jaw members. The turning of the screw head causes the threaded portions of the bolt to feed along the tapering threaded portions of the expanding jaw members which causes the jaw members to expand and securely grip the walls of the hole. During the expansion of the jaw member due to the pressure exerted in turning the bolt head, the outer edges of the projecting hooks that engage with the locking pins become crushed, due to their softness, thereby permitting the expansion of the jaw members when secured to position within the hole of a wall.

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 opposed jaw members adapted for receiving between them a bolt or the like, one of said jaw members being provided with a laterally projecting supporting element in the form of a pin and the other provided with an engaging element surrounding the supporting element and arranged to turn on the same as a pivot.

2. In an expansion bolt, the combination of opposed jaw members adapted for receiving between them a bolt or the like, one of said jaw members being provided with a laterally projecting supporting element in the form of a pin and the other provided with an engaging element surrounding the supporting element and arranged to turn on the same as a pivot, and coacting means at one end portion of the jaw members for preventing relative longitudinal movement of the said jaw members.

3. In an expansion bolt, the combination of opposed jaw members adapted for receiving between them a bolt or the like, one of said jaw members being provided with a laterally projecting supporting element in the form of a pin and the other provided with an engaging element surrounding the supporting element and arranged to turn on the same as a pivot, and means arranged in the path of movement of the engaging element.

4. In an expansion bolt, the combination of opposed jaw members adapted for receiving between them a bolt or the like, one of said jaw members being provided with a laterally projecting supporting element in the form of a pin and the other provided with an engaging element surrounding the supporting element and arranged to turn on the same as a pivot, means arranged in the path of movement of the engaging element, and coacting means at one end portion of the jaw-members for preventing relative longitudinal movement of the said jaw members.

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

DANIEL MASOR.

Witnesses:
M. E. LAUGHLIN,
W. E. LAWSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."