

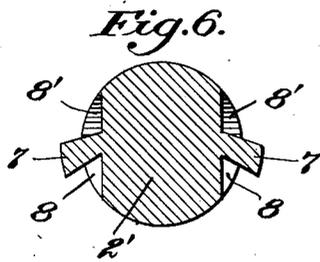
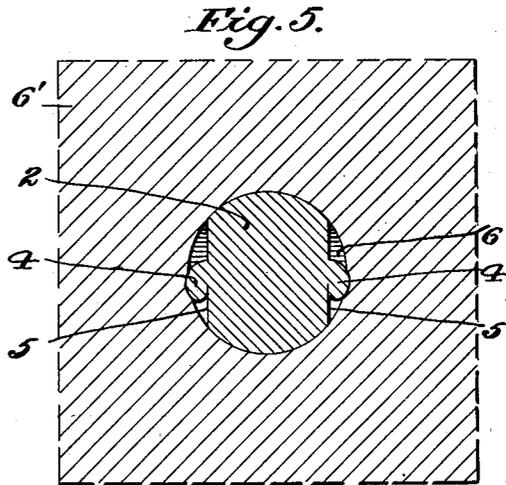
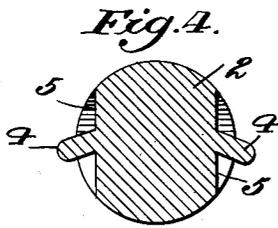
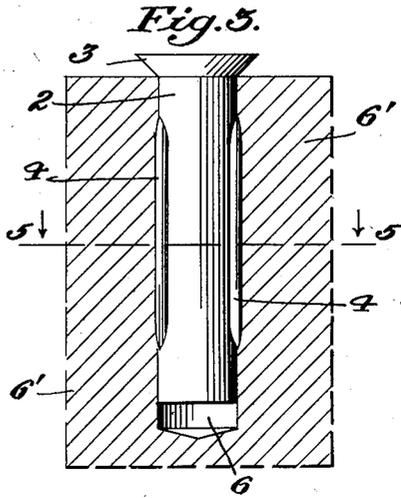
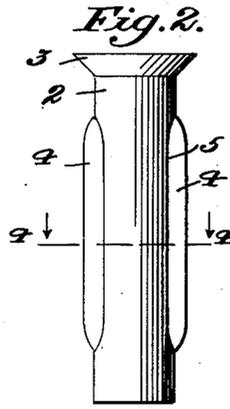
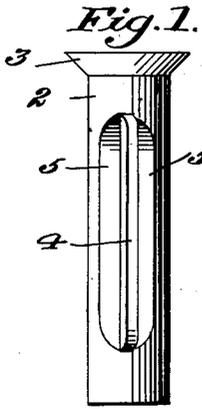
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EXPANSION BOLT

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EXPANSION BOLT

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7 Claims. (Cl. 72—105)

This invention relates to a novel and improved type of expansion bolts, and is especially designed to be utilized in connection with stone, metal, cement, brick, concrete walls, posts and other materials and structures to which it may be readily, successfully, usefully and practically applied.

The main object of the invention is to provide a practical, durable, simple, economical and thoroughly effective expansion bolt from a single piece of suitable metal adapted to be forced within a cavity, socket or opening formed in a foundation, and to be distorted and compressed into extremely tight contact with the wall of such cavity, socket or opening.

Another object of the invention is to so construct this novel type of expansion bolt from a single piece of metal with its headed portion at its upper or outer end that its body portion is compressed intermediate its length to form a plurality of outwardly extended lugs or ribs, with a recess formed within said body at each side of each lug or rib, so that, when the bolt is driven or forced within a cavity or socket for need in any desired material or foundation, the said lugs or ribs will be caused to be compressed and distorted into the recessed portion of the bolt and become so intensely compressed against the wall of the cavity or socket that it will be permanently anchored therein against rotation, looseness, or accidental removal, and thereby practically and successfully serve the purpose for which it is intended.

The foregoing and such other objects as may appear from the ensuing description are accomplished by the construction, formation and combination of the elements hereinafter more fully described, illustrated in the accompanying drawing, and particularly pointed out in the claims appended hereto, it being understood that slight changes in the precise formation, proportions and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming a part of this specification it will be seen that:

Figure 1 is an elevation of the improved type of expansion bolt embodying my invention.

Figure 2 is an elevation of the bolt, showing the projecting ribs distended after having been compressed from the body portion.

Figure 3 is a similar elevation of the bolt, showing said bolt in its locked position after having been forced within a socket or cavity formed within a suitable foundation.

Figure 4 is an enlarged cross-section taken in the plane of the dotted lines 4—4, Fig. 2.

Figure 5 is an enlarged cross-section taken in the plane of the dotted lines 5—5, Fig. 3, and

Figure 6 is a cross-section of a slightly modified form of expansion bolt.

In the embodiment of my invention as illustrated, it will be seen by reference to the drawing that the numeral 2 designates the body portion of my novel bolt, 3 is the headed portion, and 4 indicates the ribs or lugs which are compressed from the body portion of the bolt intermediate its length and extend outwardly beyond the outer surface of the other portion of the body, with a recess 5 formed within said body at each side of each of the ribs or lugs, while the numeral 6 indicates a socket or cavity which is formed within a suitable foundation 6'.

It will be readily perceived that when the bolt is forced or driven within the cavity or socket 6 the slightly downwardly inclined distended ribs or lugs 4 will be distorted and compressed, a portion thereof being forced within the recess 5, and another portion being compressed and distorted tightly against the wall of the cavity, thereby maintaining the bolt in a securely locked position within the said cavity.

By reference to Fig. 6 will be seen a slightly modified form of bolt 2' indicating the body portion formed with oppositely disposed extended rib or lug members 7, said lug members being weakened at the point where they form an integral part of the body portion having a recess 8 formed within the body portion at one side of each lug or rib, and a recess 8' at the opposite side of each lug, as shown in said Fig. 6.

It will be evident that my improved and novel type of bolt may be formed from a rod of suitable elastic metal, and that the body portion is formed by a suitable die with the same operation from a rod with the head portion upset.

It is readily obvious that the modified form of bolt, such as is shown in Fig. 6, will be caused to assume a locked position when driven into a cavity in the same manner hereinbefore described.

I desire it to be understood that this particular bolt may be formed from a single piece of suitable spring steel or any other desirable elastic metal, and may be made of any desirable dimensions required for its particular use to suit any purpose for which it may be successfully employed, and may be formed by any suitable method or machine provided with such dies as may be required for its complete and proper formation.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. An expansion bolt formed from a single piece of solid elastic metal having a portion compressed from opposite sides of its smooth exterior body portion to form oppositely and vertically disposed extended lugs or ribs intermediate its length only said ribs projecting beyond the surface of the cylinder body and longitudinally extended in angular relation to its cylinder surface.

2. A self locking expansion bolt formed from a single piece of solid elastic metal having a portion compressed from the smooth exterior surface of its body portion at opposite sides thereof to form an oppositely and vertically disposed extended rib at each side of said body portion centrally of its length said ribs projecting beyond the surface of the cylinder body and longitudinally extended in angular relation to its cylinder surface.
3. A self locking expansion bolt formed from a single piece of solid elastic metal having a smooth exterior body portion, oppositely disposed extended ribs compressed from said body portion forming a recess within the body at each side of each rib, said body portion being of the same diameter throughout its length said ribs projecting beyond the surface of the cylinder body and longitudinally extended in angular relation to its cylinder surface.
4. A self locking expansion bolt of the character described, comprising a smooth exterior body portion compressed intermediate its length to form an extended vertically disposed rib member at each side thereof, and a laterally disposed recess formed within said body portion at each side of each rib member said ribs projecting beyond the surface of the cylinder body and longitudinally extended in angular relation to its cylinder surface.
5. A locking bolt of the character described formed from a single piece of solid elastic metal, having a body portion, a portion compressed from opposite sides of said body portion to form oppositely disposed extended ribs intermediate the body portion, and a laterally extended recess formed within the body portion at each side of each rib intermediate its length said ribs projecting beyond the surface of the cylinder body and longitudinally extended in angular relation to its cylinder surface.
6. A self locking bolt formed from a single piece of solid elastic metal comprising a body portion, a plurality of oppositely disposed ribs or lugs compressed from said body portion intermediate its length, and a laterally extended recess formed at each side of each rib within said body, the remaining portion of the body being of the same diameter throughout its entire length said ribs projecting beyond the surface of the cylinder body and longitudinally extended in angular relation to its cylinder surface.
7. A self locking bolt of the character described, comprising a head portion, a body portion, a plurality of oppositely disposed ribs compressed from said body portion intermediate its length, a laterally disposed recess formed within the smooth outer face of the body portion at each side of each rib, each of said ribs being compressed and distorted within one of the said recesses and against the wall of a cavity when forced therein to firmly retain said bolt within the cavity said ribs projecting beyond the surface of the cylinder body and longitudinally extended in angular relation to its cylinder surface.

HARRY G. NORWOOD.