F. KARITZKY.

BOLT ANCHOR.

APPLICATION FILED MAY 21, 1919.

1,326,663. Patented Dec. 30, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

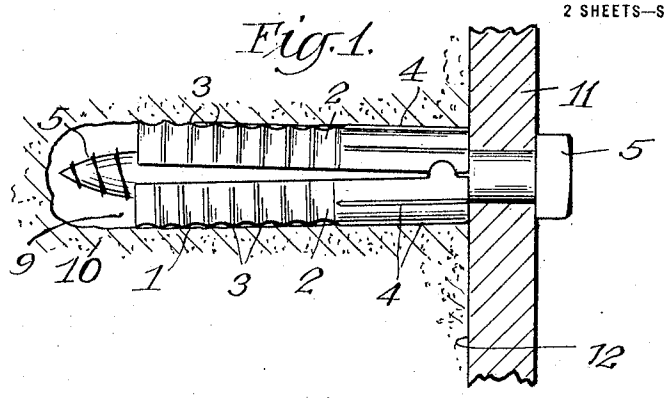


Fig. 2

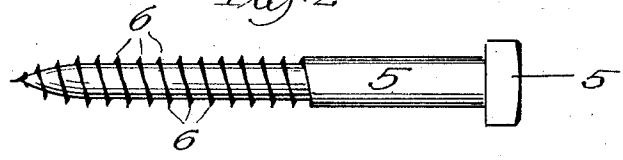


Fig. 3.

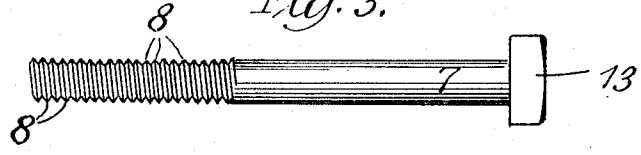


Fig. 4.

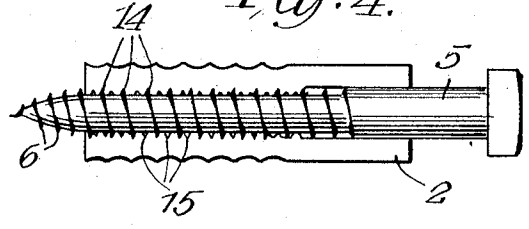
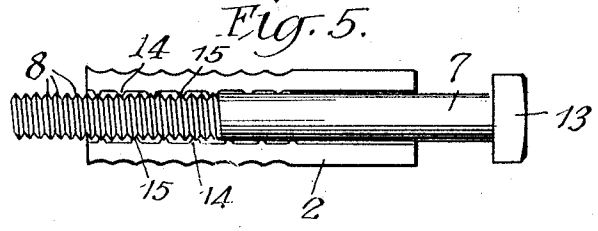


Fig. 5.



Fred Karitzky INVENTOR

BY Allan W. Johnson

ATTORNEY

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2 SHEETS—SHEET 2.

Fig. 6.

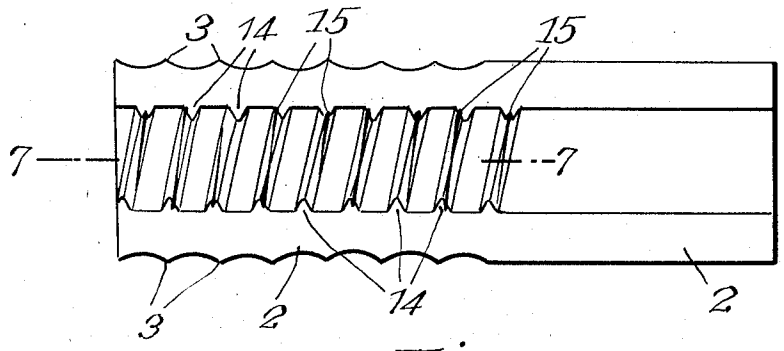
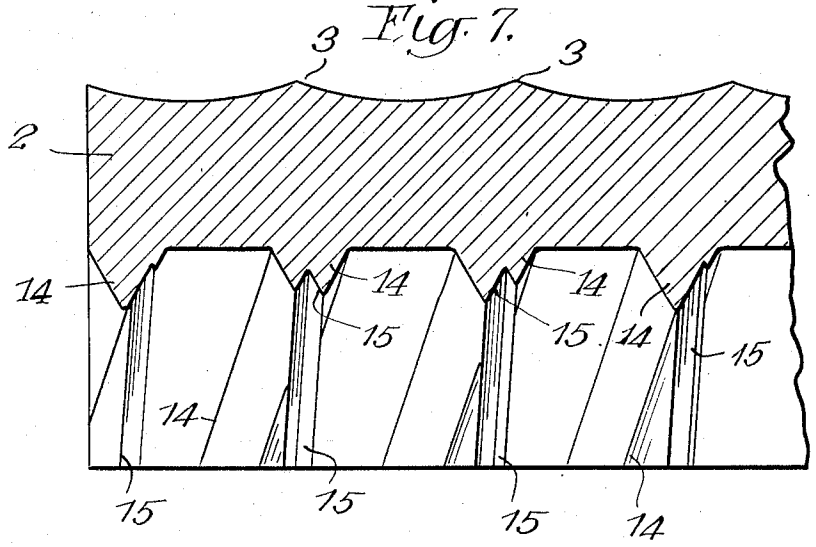


Fig. 7.



INVENTOR

Fred Karitzky

BY

Clarence Johnson

ATTORNEY

UNITED STATES PATENT OFFICE.

FRED KARITZKY, OF GARWOOD, NEW JERSEY, ASSIGNOR TO GARWOOD COMPANY, A CORPORATION OF NEW JERSEY.

BOLT-ANCHOR.

1,326,663. Specification of Letters Patent. Patented Dec. 30, 1919.

Application filed May 21, 1919. Serial No. 298,626.

To all whom it may concern:

Be it known that I, FRED KARITZKY, a citizen of the United States, and a resident of Garwood, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Bolt-Anchors, of which the following is a specification, taken in connection with the accompanying drawing.

My invention relates to bolt anchors and more particularly to what is commonly known in the art as "expansions". My invention further relates to the lag screw type expansion and also the machine bolt type expansion. As is well known in the art these two types of expansions are separate and distinct articles of manufacture and commerce.

By my invention I combine in one structure a lag screw expansion and a machine bolt expansion permitting one structure to perform the function and have the advantages of both of these totally different types of expansions.

My invention further relates to forming such a combined unitary structure of the fewest possible number of parts; further, in my combined expansion the machine type expansion, has one or more fewer parts than the common commercial type of machine bolt expansion.

My invention further relates to certain details of construction and combinations which will be more fully described in the specification and pointed out in the claims.

I have shown in the accompanying drawing one embodiment of my invention, but of course it is clearly understood that my invention is not to be confined to the particular form shown, by way of example, except as required by the scope of my claims.

In the accompanying drawing the same reference numerals refer to similar parts in the several figures.

Figure 1 is a sectional view of my expansion used as a lag screw expansion, the lag screw and expansible members being shown in side elevation;

Fig. 2 is a plan view of a lag screw;

Fig. 3 is a plan view of a machine bolt;

Fig. 4 is a plan view of one of the expansible members shown coöperating with the lag screw;

Fig. 5 is a plan view of the same expansible member coöperating with the machine bolt;

Fig. 6 is a plan view of the expansible member shown in Figs. 4 and 5 but with the lag screw and machine bolt removed;

Fig. 7 is a detailed vertical section.

In the illustrative embodiment of my invention 1 is an expansion bolt having the expansible members 2—2. The exterior of these expansible members may be given any suitable configuration. For purposes of illustration I have shown them provided with transverse ribs 3—3 and longitudinal ribs 4—4, but these may be omitted or changed as may be found desirable or expedient.

The lag screw 5 is a well-known article of commerce and is provided with comparatively wide pitched threads 6—6. The well-known machine bolt 7 of commerce is provided with comparatively close pitched threads 8—8.

It is well known in the art that the ordinary form of lag screw expansion is formed of two expansible members, such for example, as 2—2 of Fig. 1. The lag screw 5 coöperates with the interior threads upon these members 2—2 and gives a powerful expansion in the hole 9 by spreading the expansible members 2—2 apart so they bite firmly into the wall or other support 10. By using the lag screw type of expansion a quick and powerful binding of the work 11 against the face 12 of the wall, or other support, is assured. In this type of expansion the application of the expanding force is quickly applied and the expansion bolt is one which can be manufactured at minimum expense.

There are locations, however, in which some engineers and architects insist that a machine bolt type expansion be used. Such a type of expansion applies the expanding force more gradually, due to the small pitch of the threads. This machine bolt type of expansion is much more expensive to manufacture, and usually employs at least one more part than the lag screw type of expansion shown for example in Fig. 1.

In the common form of machine bolt type expansion there is an expanding member which is a nut, or equivalent, having wedge surfaces which are employed to coöperate with corresponding wedge surfaces formed

on the expanding members which make direct contact with the wall of the hole. The manufacture of this nut, or equivalent, is a machine shop job, in that it has to be reamed and then tapped to form female machine screw threads to coöperate with the male machine screw threads 8—8 formed upon the machine bolt, such as 7 in the drawing. In such a machine bolt type expansion there are at least three members, the two expanding members, which would be the equivalent of the members 2—2 in the drawing, and the expanding member which would be a nut or equivalent. The rotation of the head 13 of the machine bolt 7 would cause the nut, or equivalent, to spread the expansible members apart. Very often there is a fourth member, which also serves to wedge apart the expansible members, though this member as a rule is not threaded. This machine type bolt of expansion is not illustrated in the drawing for it is well known in the art and is merely here referred to that the advantages, economy and ease of manufacture of my combined expansion may be more readily understood.

The demand in the trade for both the lag screw type of expansion and the machine bolt type of expansion requires that the manufacturer, jobber and retailer, have in stock both these types of expansion. This of course requires additional expense on the part of the manufacturer and requires that the jobber and retailer have more of their capital tied up in stock of these two different types of expansion.

By my invention I combine in one structure all the advantages of both types of expansions with practically no additional cost over the expense of the lag screw type. This will save great expense to the manufacturer and will enable the jobber and retailer to lay in a stock of but one type of expansion, which can be used both as a machine type expansion and a lag screw type of expansion, so they can supply orders for both types of expansions by my combined expansion.

The expansible members 2—2 are provided on their interior bore with female screw threads 14—14 of comparatively wide pitch to coöperate with the wide pitch male threads 6—6 of the lag screw 5. Across the path of these threads 14—14, I form a second series of threads 15—15 of much closer pitch to coöperate with the male machine bolt threads 8—8. It is a general rule that the standard lag screw of commerce have threads which run about half the number of threads to the inch as on the standard machine bolt of corresponding diameter, though this is not a fixed rule. I have found, however, that in the great number of threads 6—6 of the lag screw of commerce, 5, there are a sufficient number in which the threads will coincide, or partly coincide with alternate threads of the standard machine bolt of commerce 7. Where the coinciding machine bolt thread does not hit the lag screw thread on the apex or peak it will fall on one side or the other of the apex or peak and within the metal of the comparatively thicker lag screw thread of the expansible members, see Figs. 6 and 7, and the next thread will be on the apex or peak and so on regardless of how the two threads may compare in number per inch, there will always be a sufficient number of coincident threads to give a strong and rigid hold between the expansible members 2—2 and the machine bolt 7, or the lag screw 5 whichever may be used.

For economy in manufacture I preferably cast these multiple screw threads 14—14 and 15—15 in the expansible members 2—2 at the time they are themselves cast which will avoid machine work, though if desired for any reason the screw threads 15—15 for the machine bolt 7 may be later tapped or formed in the expansible members 2—2.

Having thus described this invention in connection with one illustrative embodiment thereof to the details of which I do not desire to be limited, except as required by the scope of the appended claims, what is claimed as new and what is desired to be secured by Letters Patent is set forth in the appended claims.

What I claim is:—

1. A new article of manufacture comprising a bolt anchor having cast threads to coöperate with either the threads of a lag screw or the threads of a machine bolt.

2. A new article of manufacture comprising a bolt anchor having non yielding means to coöperate with either a lag screw or a machine bolt.

3. A new article of manufacture comprising a bolt anchor having previously formed means shaped to coöperate with either a lag screw or a machine bolt.

FRED KARITZKY.

Witnesses:
DAVID TULLOCH,
JOHN KARITZKY.