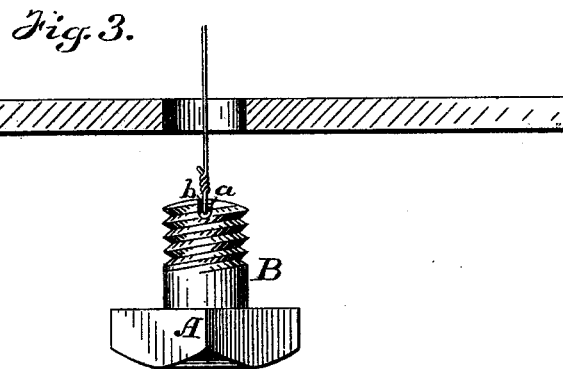
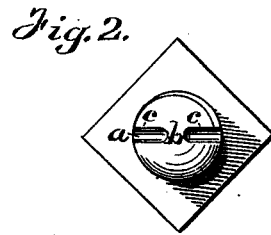
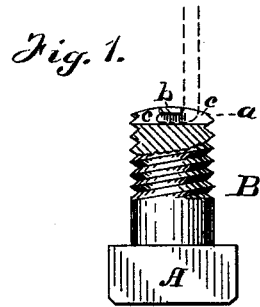


N. S. BARRITT.
Method of Inserting Bolts in Boiler-Plates.
No. 204,650. Patented June 11, 1878.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN THE METHODS OF INSERTING BOLTS IN BOILER-PLATES.

Specification forming part of Letters Patent No. **204,650**, dated June 11, 1878; application filed November 19, 1877.

To all whom it may concern:

Be it known that I, NEWBY S. BARRITT, of Saugerties, in the county of Ulster and State of New York, have invented certain Improvements in the Method of Inserting Bolts in Boiler-Plates, of which the following is a specification:

This invention consists in the method of inserting bolts in boiler-plates, or in other plates difficult of access, by providing the bolts each with a cross-groove in the end, bridged over, fastening a hook or wire therein, passing the said hook or wire through some opening in the boiler and through the bolt-hole and its nut, and holding the bolt in position while screwing the nut thereon, all substantially as hereinafter specified.

In the present state of the art, when it becomes necessary to insert a bolt from the inside of a boiler, for instance, and the point of insertion cannot be reached from the man-hole or hand-hole, it is customary to tie a string or cord around the tip of the bolt, so as to form a loop; then a wire is inserted through the bolt-hole from the outside, the end passed through to the hand-hole, and the bolt hooked on. When the bolt has by this means been drawn to the hole it is to occupy it is pulled through by means of the string. This is difficult to do if the bolt fits the hole snugly, as the strands of the cords must override the screw-threads and tend to enlarge the bolt.

In addition to this difficulty is the danger arising from the sharp edges of the opening tending to fray and cut the cord and permit the bolt to drop back into the boiler. Furthermore, as the cord must be removed before the nut can go on, it is very difficult to hold the bolt while engaging the nut; and after the nut is engaged the bolt is apt to turn with it and baffle all attempts to tighten the nut.

To obviate or avoid all of the above-named difficulties is the object of my present invention, which I will now describe.

In the drawing, Figure 1 is a side view of my improved bolt, partially in section. Fig. 2 is a plan of the same. Fig. 3 is a side view taken at right angles to Fig. 1.

Let A represent the head of a bolt, and B

the shank of the same, which may be of any desired length. Through the tip or extremity of the bolt I drill a hole, *a*; of small dimensions, the said hole being preferably as close to the tip of the bolt as it can be bored, and leave a thin bridge or tie, *b*. At *c c* a portion of the metal between the hole and the end of the bolt is cut away or otherwise removed, as shown. This enables me to attach a wire directly to the bolt by hooking it under the tie *b*, as shown in Fig. 3. The spaces *c c* are sufficiently deep to allow the wire to clear the screw-threads, and the nut may be strung over the wire and screwed onto the bolt without removing the wire. Moreover, a bolt of this kind may be used that will snugly fit the bolt-hole, as the wire is not in the way; and there can be no possible danger of the wire or cord being cut by the sharp edge of the hole, as with the ordinary bolt.

In Fig. 1 I have indicated in dotted lines the application of a hook or key to engage the cavity under the tie *b*.

By means of this device, which may be a hook of any kind that will enter the cavity, the bolt can be held steady and prevented from turning while the nut is screwed on. If a somewhat stiff wire is used, as in Fig. 3, this may serve the same purpose.

The spaces cut away at *c c* must extend in toward the center far enough to permit the wire to clear the screw-threads and allow the nut to go on; but the exact depth is immaterial.

I claim—

The improvement herein described in fixing plates to boilers, which consists in providing the bolt with a cross-groove in its end, bridged over, as described, fastening a hook or wire therein, passing said hook or wire through some opening in the boiler and through the bolt-hole and the nut, and holding the bolt in position while the nut is screwed thereon, as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

NEWBY S. BARRITT.

Witnesses:

SAM. TRO. SMITH,
HENRY CONNETT.