No. 689,555. Patented Dec. 24, 1901.

A. E. & C. H. MANN.

COMBINED INTEGRAL THREADING NUT OR DIE AND COMMON NUT.

(Application filed May 29, 1901.)

(No Model.)

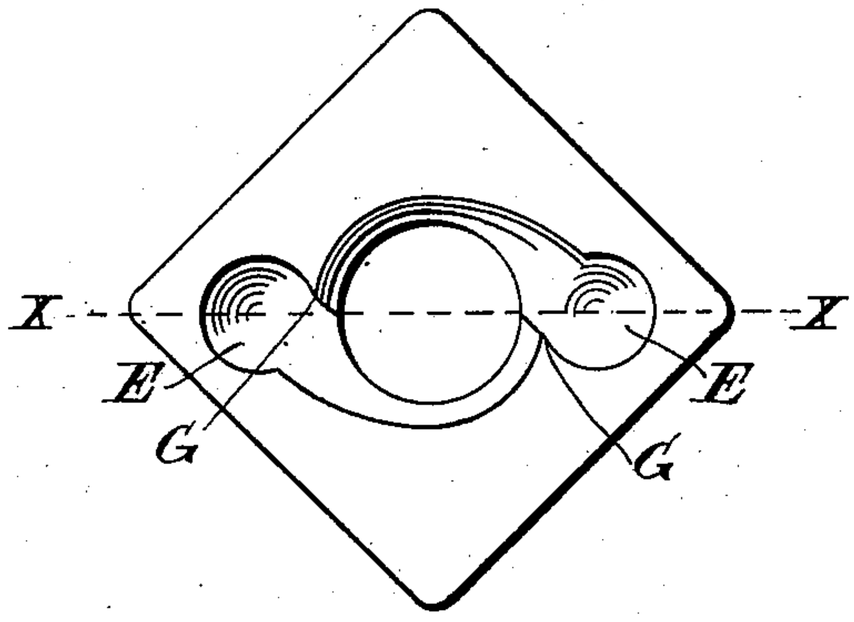

Fig 1

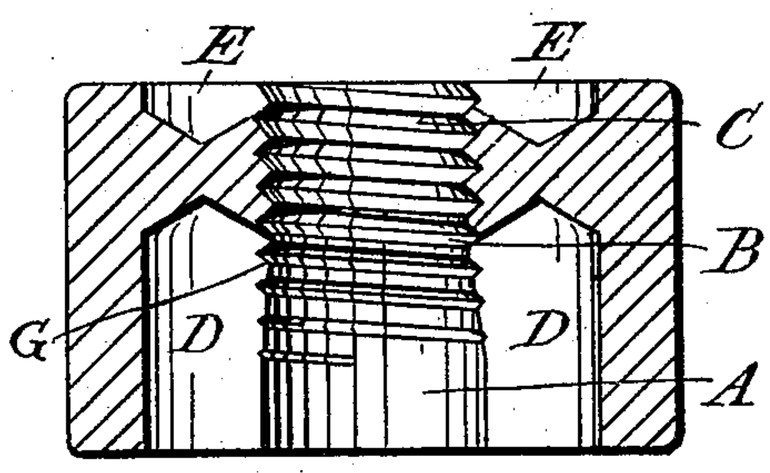

Fig 2

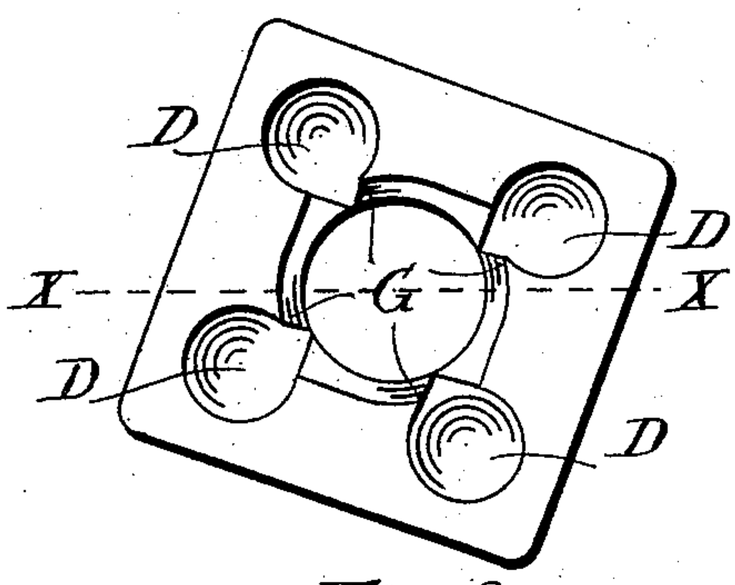

Fig 3.

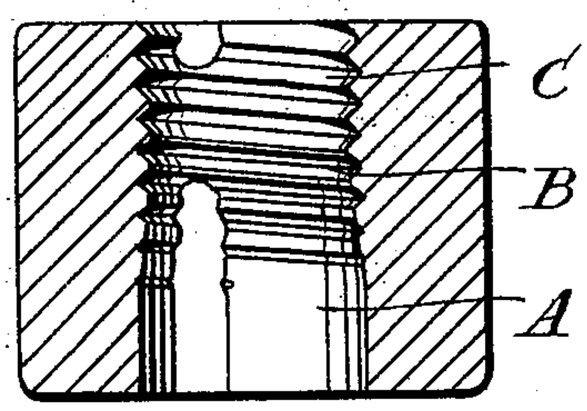

Fig 4

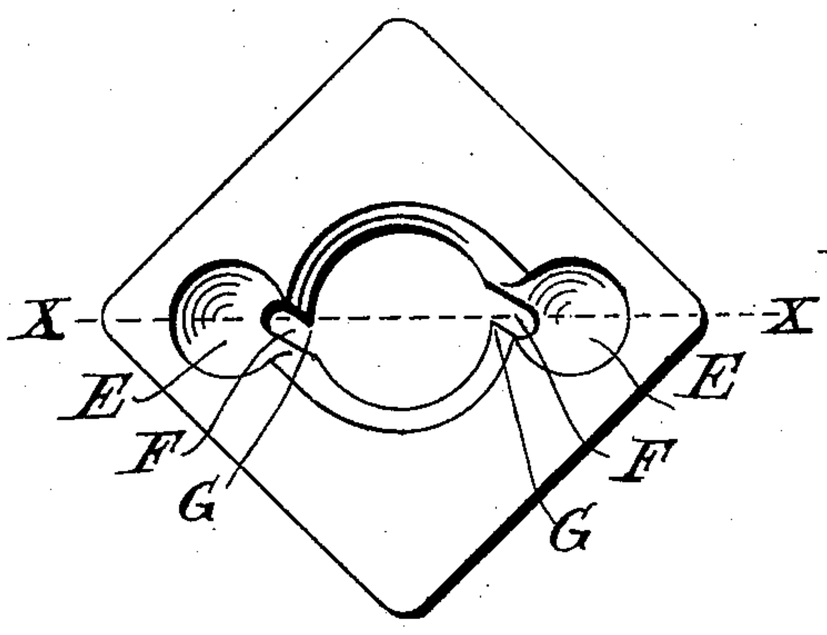

Fig 5

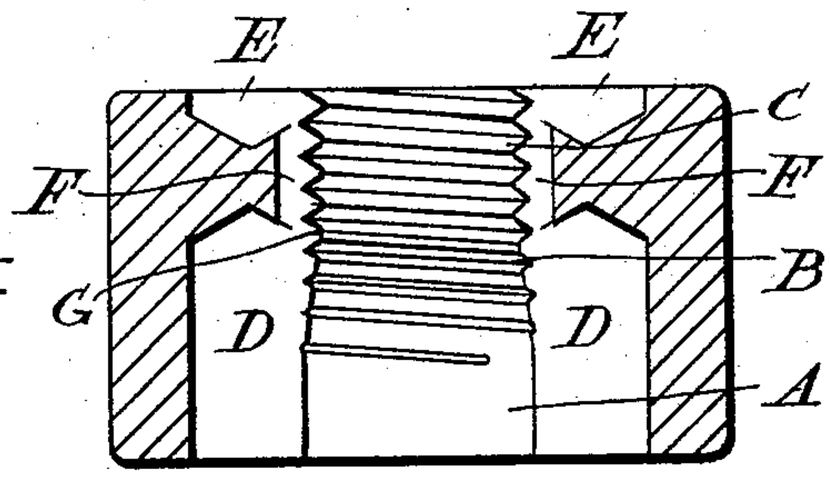

Fig 6

Witnesses:
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UNITED STATES PATENT OFFICE.

ALBERT EDWARD MANN AND CHARLES HENRY MANN, OF EMERALD, VICTORIA.

COMBINED INTEGRAL THREADING NUT OR DIE AND COMMON NUT.

SPECIFICATION forming part of Letters Patent No. 689,555, dated December 24, 1901.

Application filed May 29, 1901. Serial No. 62,319. (No model.)

To all whom it may concern:

Be it known that we, ALBERT EDWARD MANN and CHARLES HENRY MANN, subjects of the King of Great Britain and Ireland, residing at Emerald, near the township of Gembrook, in the county of Evelyn, State of Victoria, Commonwealth of Australia, have invented certain new and useful Improvements in Combination Integral Threading Nuts or Dies and Common Nuts, of which the following is a specification.

The object of our invention is to provide a device which shall not only form a thread on a round piece of material, but which shall perform the operation in an otherwise inaccessible place and likewise be not only a threading-nut, but also a holding or common nut combined.

It frequently happens that bolts or other articles require threading where there is insufficient room for stock and dies to turn; but with our invention where a common nut, either square or hexagonal, can be turned our combination can be turned also, in addition to which it may, (as its cost is but small,) if occasion demands, be left on the thread it has dressed or cut with certainty as to its holding on the articles it threads. Its ends are so designed as to cut threads from either of the said ends, but the trailing or top end of it only cuts a full, not a partial, thread.

Referring to the drawings which form a part of this specification, Figure 1 represents a plan of the top of the combination. Fig. 2 is a sectional elevation through X X, Fig. 1. Fig. 3, a plan of the bottom of the combination. Fig. 4 is a sectional elevation through X X, Fig. 3. Fig. 5 represents a plan of a nut having a guiding, a cutting, and a holding portion in combination with two narrow clearing-slots through the holding portion of the nut. Fig. 6 is a sectional elevation through X X, Fig. 5.

Similar letters of reference indicate similar or corresponding parts where they occur in the several views.

On reference to the drawings it will be seen that the nut (which can be square, hexagonal, or of other contour) has a central, through, or main hole. This is divided into three portions—first, the guiding portion; second, the threading portion, and, third, the holding portion. The guiding portion A is of such a diameter as to enter upon the article to be threaded and loosely fit the same. It acts as a guide to the nut and insures the thread from being formed parallel to the axis of the article. The threading portion B is intermediate between the guiding portion A and the holding portion C, by which it is superimposed. Said threading portion at its leading end tapers from no thread at all to a full or complete thread where it abuts the holding portion. The length of the various portions will vary with conditions; but we find them the most satisfactory as illustrated.

In the leading end of the nut are four or more main cutting-holes D. These only extend to the commencement of the holding portion of the thread. They are drilled parallel to the main hole and penetrate same, thereby forming interrupted or cutting edges G, the threads behind which are backed off for clearing purposes in the ordinary way. From the termination of the cutting-thread to the trailing or top end of the nut the thread inside the said main hole is neither tapered nor interrupted in any way, save for the first thread around the two shallow cutting-holes E. It therefore forms in this portion a common nut. These shallow cutting-holes E also interrupt the first thread at the top of the nut. The edge on the cutting-holes E on the nut-thread is so formed as to cut a full or complete thread on the article being threaded. Sometimes it happens that it is necessary to have a full or complete thread up to a shoulder or step on the article being threaded or up to a surface from which the article protrudes. It is only in such cases that the top end of the nut is used for threading, for before so using it the thread is already formed by the threading tapered portion of the nut before referred to.

In a modification of the foregoing, as seen in Figs. 5 and 6, all the parts are similar to those shown in Figs. 1, 2, 3, and 4, save that two narrow clearing-slots F are made through the holding-thread and communicate between the two shallow cutting-holes E and two of the main cutting-holes D. These slots permit the shavings to clear or depart from the first cutting-thread on the top of the nut and prevent

the said top end when it is being used as a die from becoming clogged or choked.

As can be well understood, our combination-nut answers the dual purpose of a screwing nut or die and a common holding-nut, and if it is desired to leave it as a nut on the article it has screwed all the temper may be removed from it by the application of a heated ring or a pair of tongs or other convenient device.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An article of manufacture, a combined die and nut consisting of a block of metal having a hole therethrough, the lower portion of which hole is unthreaded and is succeeded by a threading or cutting portion above which is a threaded holding portion and above this last portion a supplemental threading or cutting portion substantially as and for the purpose set forth.

2. An improved combination integral threading nut or die and common nut consisting of a block of metal having a central hole, a portion of which hole is unthreaded and of a diameter as great as that of the threaded portion at the base of the thread which forms a guide in cutting a thread, a threading or cutting portion above the unthreaded portion, a holding portion above the thread-cutting portion, and a portion above the holding portion to serve as a cutting portion on reversing the nut and as a holding portion when the nut is in place on a bolt, said nut having cutting-holes around the lower cutting portion of the thread drilled from the under side of the nut and two shallow cutting-holes drilled from the top of the nut, all as and for the purposes hereinbefore described and as illustrated in the drawings.

3. An improved combination integral threading nut or die and common nut consisting of a block of metal having a central hole, a portion of which hole is unthreaded and of a diameter as great as that of the threaded portion at the base of the thread which forms a guide in cutting a thread, a threading or cutting portion above the unthreaded portion, a holding portion above the thread-cutting portion, and a portion above the holding portion to serve as a cutting portion on reversing the nut and as a holding portion when the nut is in place on a bolt, said nut having cutting-holes around the lower cutting portion of the thread drilled from the under side of the nut and two shallow cutting-holes drilled from the top of the nut, and two narrow clearing-slots joining said shallow cutting-holes with the cutting-holes drilled from the under side of the nut, all as and for the purposes hereinbefore described and as illustrated in the drawings.

In witness whereof we have hereunto set our hands to this specification in the presence of two witnesses.

ALBERT EDWARD MANN.
CHARLES HENRY MANN.

Witnesses:
EDWIN PHILLIPS,
CECIL W. LE PLASTRIER.