No. 637,718. Patented Nov. 21, 1899.

C. N. DUNCAN.

TAP.

(Application filed June 24, 1899.)

(No Model.)

Fig. 1.

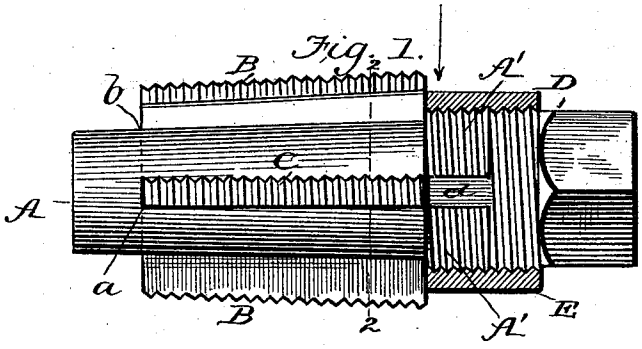


Fig. 2.

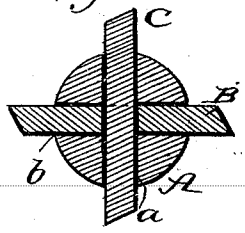


Fig. 3.

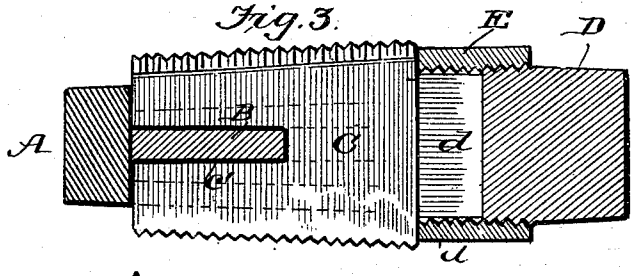


Fig. 4.

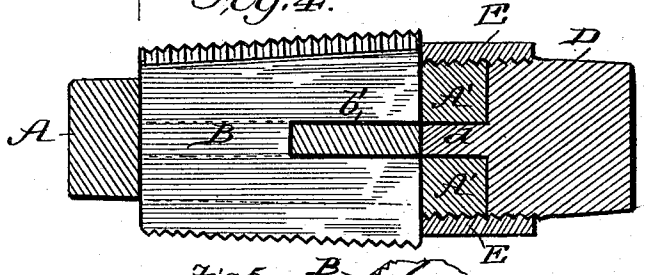
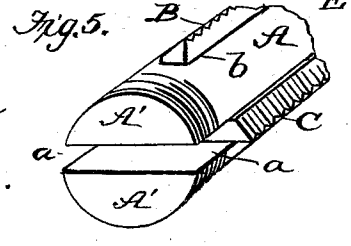


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES NORTON DUNCAN, OF KEWANEE, ILLINOIS, ASSIGNOR OF ONE-HALF TO ORLAND W. BOARDMAN, OF SAME PLACE.

TAP.

SPECIFICATION forming part of Letters Patent No. 637,718, dated November 21, 1899.

Application filed June 24, 1899. Serial No. 721,694. (No model.)

To all whom it may concern:

Be it known that I, CHARLES NORTON DUNCAN, of Kewanee, in the county of Henry and State of Illinois, have invented a new and useful Improvement in Taps, of which the following is a specification.

My invention is in the nature of an improved tap for cutting the interior threads of a nut or screw-threading a hole. It is an improvement upon that form of tap in which the thread-cutting dies are made in the shape of detachable plates at right angles to each other and locked within a longitudinally-slotted plug or body portion having its slots at right angles to each other.

My improvement consists in the special construction and arrangement of parts designed to make it less expensive, to permit various sizes and forms of threads to be cut with the same tap, and to permit the dies to be easily replaced by others or taken out and sharpened when worn.

Figure 1 is a side view of the tap, partly in section. Fig. 2 is a cross-section on line 2 2. Figs. 3 and 4 are longitudinal sections at right angles to each other, and Fig. 5 is a view of the screw-threaded end of the plug A.

In the drawings, A is a tapered central plug carrying two die-plates B and C, arranged at right angles to each other within the plug and reciprocally locking each other, so that neither can move away from its place. To receive these plates, the plug A is slotted longitudinally at right angles. One of the slots, *a*, extends out to the larger end of the plug and forms an open slot and the other one, *b*, being closed at both ends. One of the die-plates B is slipped sidewise through the closed slot *b* in inserting it, and it has at its larger end a slot *b'* through it, opening at its end and extending half-way its length. When the plate B is centrally in position in the plug, its slot *b'* is coincident with the open slot *a*. The other die-plate C has a slot *c'* extending from its small end half-way up the length of the plate. When this plate is to be inserted, it is slipped, little end foremost, into the open slot *a* longitudinally, and its slot *c'* permits its small end to straddle the outer or smaller end of plate B. When in this position, plate B locks plate C, and plate C in turn locks plate B, and both are held centrally in the plug in a firm and substantial manner, with their cutting edges projecting sufficiently from the tapering plug to do the cutting.

At the large end of the tap a head D is provided to hold the plate C in place. This head has a flat tongue *d*, that enters the slot *a* and bears against the plate C. To lock this head onto the plug, the end of the latter is screw-threaded, and so are the ends A' A' of the plug A. A screw-collar E is then turned onto both and made to overlap the joint. The end of the head D is square to permit it to be held when turning the plug, and the tongue *d* of the head, entering the slot *a*, connects it rigidly to the plug for turning and prevents it from becoming unscrewed when turning the tap in withdrawing it.

Any form of cutting-dies, either straight or tapered, and right or left threads may be used.

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

1. A tap consisting of a right-angularly-slotted plug, one slot being closed at both ends, and the other being open at one end, and two longitudinally-slotted cutter-plates, one inserted laterally into the plug through the closed slot, and the other endwise through the open slot, and both fitting together and reciprocally locking each other and also locking themselves in the plug substantially as described.

2. A tap consisting of a right-angularly-slotted plug, one slot being closed at both ends, and the other being open at one end, two cutter-plates, one having its large end slotted, and the other its small end slotted, and both fitting together and reciprocally locking each other, and also locking themselves in the plug, and a retaining-head for the plates having an exterior screw-thread and a locking-tongue entering the plug ends, and a screw-collar inclosing the ends of the plug and head, substantially as described.

CHARLES NORTON DUNCAN.

Witnesses:
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