Sept. 4, 1928. 1,683,114

E. O. WILLIAMSON

THREAD CORRECTING DEVICE

Filed Dec. 30, 1926

Fig.1

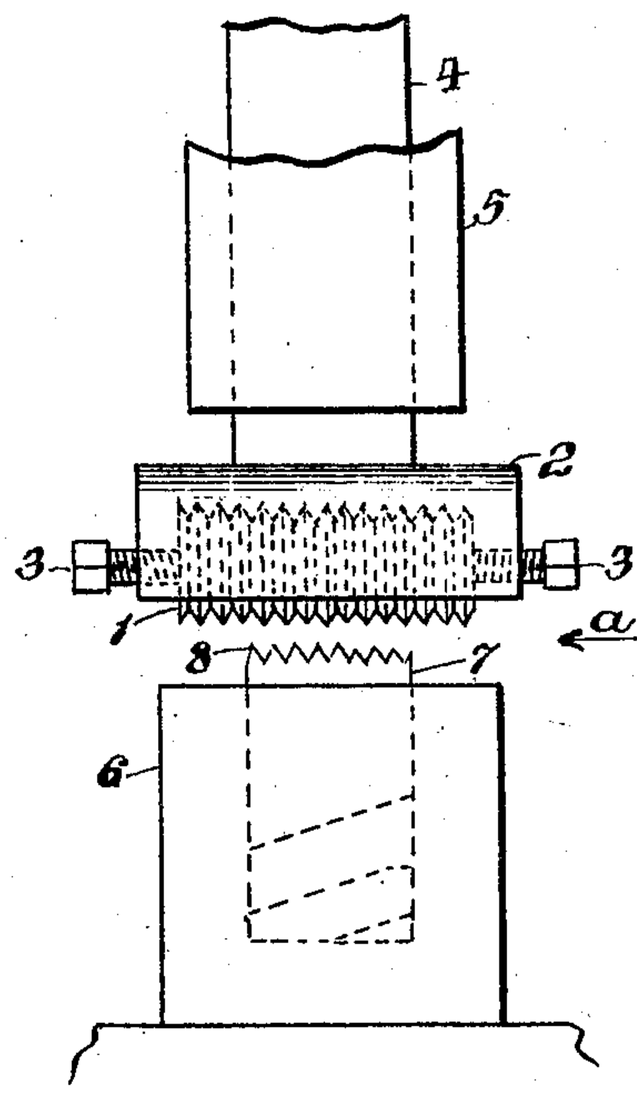


Fig.2

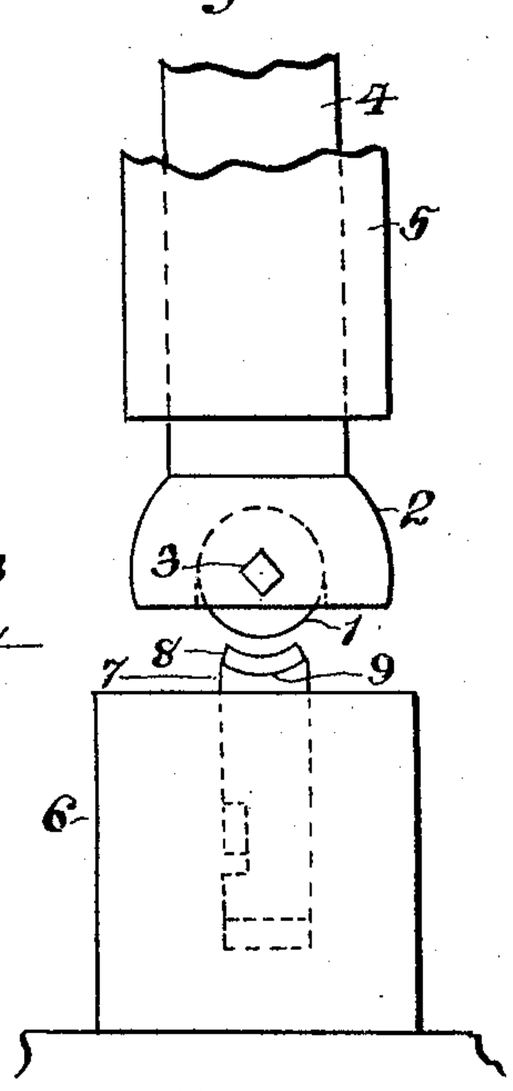


Fig.3

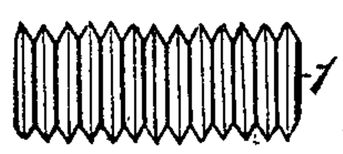


Fig.4

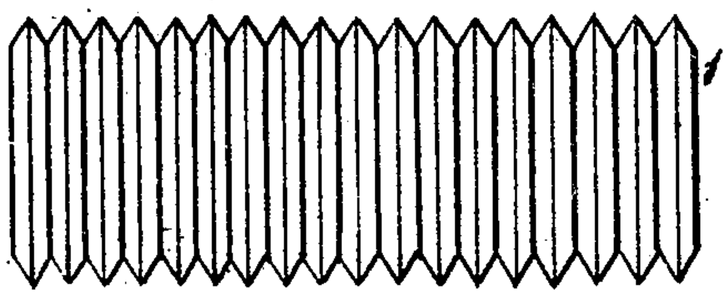


Fig.5

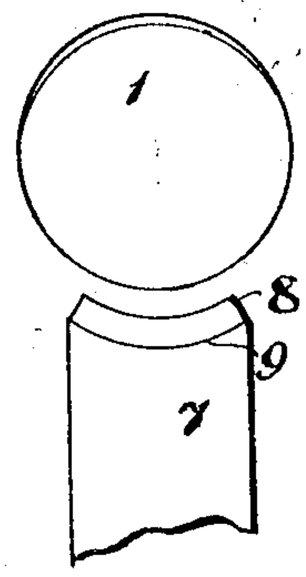
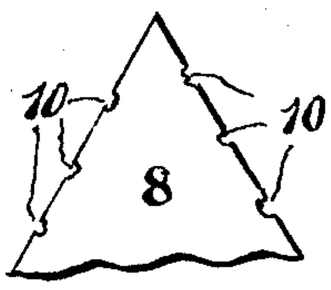


Fig.6



INVENTOR

Edwin O. Williamson.

BY

Geo. D. Phillips, ATTORNEY

Patented Sept. 4, 1928. 1,683,114

UNITED STATES PATENT OFFICE.

EDWIN O. WILLIAMSON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE EASTERN MACHINE SCREW CORPORATION, OF NEW HAVEN, CONNECTICUT.

THREAD-CORRECTING DEVICE.

Application filed December 30, 1926. Serial No. 157,884.

This invention relates to die heads, and particularly to the threading dies or chasers therefor. The object and purpose of the invention is to provide means for correcting the imperfections due to the initial operation for forming the cutting threads of the chasers, and also refining the structure of the metal in the threads.

Referring to the accompanying drawing, wherein the same characters of reference indicate like parts throughout the several views;

Figure 1 represents a broken front view of the mechanism for holding the thread corrector and chaser showing the corrector and chaser mounted therein:

Figure 2 is a side view of the same looking in the direction of arrow *a* of Figure 1;

Figure 3 is a detail view of the thread corrector;

Figure 4 is an enlarged detail front elevation of the thread corrector;

Figure 5 is an enlarged end elevation of the thread corrector and broken view of a chaser, and

Figure 6 is an enlarged broken end view of a chaser thread showing the scoring marks due to the initial threading operation.

In forming chaser threads, the chaser blanks are secured in a suitable fixture, not shown. Common methods of threading chasers allow more or less variation in the accuracy of the chasers. The threading tool also has a tendency to leave the chaser threads in a comparatively rough condition with more or less scoring marks on their sides, as shown in Figure 6.

To effectually correct these serious defects, I employ the hardened threaded member 1 to serve as a thread corrector for the chasers before they are hardened.

The threads formed on this corrector are of standard accuracy, and will, in the manner presently to be described, correct the imperfections occurring in the threads of the chasers. The thread corrector 1 is mounted in the head 2, with its threads projecting below the holder and is removably secured thereto by the set screw 3. The shank 4 of the head is reciprocally mounted in a stationary part of the mechanism represented by the member 5.

The chaser 7 is mounted in the fixture 6 in alignment with the threads of the corrector 1 and has its threads protruding beyond the fixture. The corrector support is then reciprocated by any conventional means, not shown, to bring the threads of the corrector in contact with the chaser threads 8 by short and continued rapid strokes to rectify the threaded part of the chaser and bring the threads 8 in perfect accord with the master threads of the corrector. The impact of the corrector will gradually upset the metal of the threaded part of the chaser, close up the scoring marks 10, Figure 6, caused by the threading tool in the initial threading of the chaser, and leave a perfectly smooth surface. A chaser thus corrected will not only cut a smoother thread, but its period of usefulness will be greatly extended by reason of the more compact grain structure of the threads and the retention of their initial hardened surface, thus overcoming a serious defect in chasers. The object of employing short strokes is to not only gradually upset the metal as just noted, but also to not affect the original length of the chaser.

While I show certain means for operatively mounting the master thread corrector, it will be readily understood that any suitable means could be employed that will maintain the alignment of the threads of the corrector with those of the chaser during the thread correcting operation.

This method of refining the structure of the chaser threads is applicable to any desired form of the threaded end of the chaser, whether such threaded ends are concave, straight, or any other desired form, by simply shaping the operative face of the corrector to conform thereto.

Having thus described my invention, what I claim is:—

In a device for correcting the imperfections in preformed chaser threads, means for rigidly holding the chaser with the threads on the end of the chaser exposed protruding above said holding means and reciprocal means having master threads projecting therebelow for correcting the chaser threads by a series of short continuous and rapid blows delivered to the chaser threads thereby to gradually upset the metal of the chaser threads and render the surfaces thereof smooth without affecting the original length of the chaser.

In testimony whereof I affix my signature.

EDWIN O. WILLIAMSON.