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R. A. SMITH.

THREAD CUTTING DEVICE.

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Witnesses
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UNITED STATES PATENT OFFICE.

RALPH A. SMITH, OF MARSHALLTOWN, IOWA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO GUS A. SMITH, OF LAUREL, IOWA, AND ONE-HALF TO GEORGE E. WETMORE AND THEODORE L. WETMORE, OF GALESBURG, ILLINOIS.

THREAD-CUTTING DEVICE.

No. 878,097.

Specification of Letters Patent.

Patented Feb. 4, 1908.

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To all whom it may concern:

Be it known that I, RALPH A. SMITH, a citizen of the United States, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented a certain new and useful Thread-Cutting Device, of which the following is a specification.

My invention has reference to thread cutting devices, and consists in the peculiar and advantageous construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 shows a plan view of the complete tool embodying my invention with parts broken away to illustrate the adjustable screw and spring. Figure 2 shows a sectional view on the line 2—2 of Fig. 1, and Fig. 3 shows a sectional view on the line 3—3 of Fig. 1.

Referring to the accompanying drawings, it will be seen that the body portion of the tool is formed complete of two pieces of metal, one of them comprises a main handle body portion 10 with alligator wrench jaws 11 formed on one end and similar jaws 12 formed on the other end with a neck portion 13 between the main handle portion and the jaws 12, which neck portion is provided with a screw opening 14 extended transversely through it. The additional width of this neck portion makes it of substantially equal strength, with the center of the handle portion, although the said neck portion has the screw opening therein. The auxiliary handle portion is also made of a single piece of metal 15. At one end it is hinged at 16 to the main handle portion and at its other end, it has a projecting lug 17 designed to lie flat against the side of the side neck 13 adjacent to the curved portion of one of the jaws 12, and to project into a notch 17^a in the adjacent jaw, thus preventing lateral strains upon the hinged jaw. This lug 17 is formed with a screw opening in line with the screw opening 14. At the adjacent ends of these screw openings are enlarged chambers 18 and 19 surrounding the screw openings and designed to receive the expansible coil spring 20. A screw 21 is passed loosely through the opening in the lug 17 and seated and engaged with the thread in the opening 14 and it is formed with a rounded head 22 to engage the outer edge of the lug 17. The spring 20 surrounds this screw and normally holds the auxiliary

handle portion at its limit of movement away from the main handle portion. By adjusting the screw, the two handle portions may be brought closely together. Formed in the adjacent edge portions of the handle members are the screw cutting dies 23 of the ordinary kind.

The lug 17 on the auxiliary handle portion cooperating with the notch 17^a in the lateral enlargement at the back of the jaws 12 on the main handle portion assures proper registration of the die recesses as well as proper registration of the spring-receiving chambers, and at the same time prevents the imposition of lateral strain on either the hinge or the screw, and precludes lateral deflection of the coiled spring and consequent impairment thereof.

In a tool of this kind, it is desirable that the handle portion be of a width that may be easily grasped by the operator and of a shape fitted to the operator's hand. It is, therefore, desirable that the screw cutting dies be formed along a longitudinal line at the center of the handle, so that the handle may not be weakened as it would be if they were formed near one edge thereof. It is also essential that the neck between the handle and the jaws be of greater width than the adjacent portion of the main handle member, because it is necessary to form a screw opening in this neck and, therefore, the division line between the two handle portions is arranged on a longitudinally central line to a point near the neck 13 and then extends laterally leaving only a small lug 17 on the auxiliary handle portion. The screw is so arranged that its head will normally lie flat against the auxiliary handle portion near one end thereof so that it will not interfere with the use of the tool as a wrench. Hence when the tool is being used as a wrench, the thread cutting dies and the adjusting device will not interfere with the operator's ordinary use of the wrench and a handle portion is provided of a shape that may be conveniently grasped by the operator. Assuming that it is desired to use the device as a thread cutter, then the screw 21 is adjusted so that the sides of one of the cutting dies are separated the proper distance to receive the rod to be threaded. It is then placed on the rod and rotated in the ordinary way to cut threads. The di-

ameter of the cutting dies may be adjusted to be enlarged or diminished by turning the screw 21 and movement of the die members away from each other is positively prevented
5 by a screw head, so that they will not be re-adjusted or moved relative to each other during the ordinary use of the implement.

While I have shown the tool as provided at the ends of the main portion of its body with
10 wrench jaws, it is obvious that said jaws may be omitted or other appurtenances may be substituted therefor without affecting my invention.

Having thus described my invention, what
15 I claim and desire to secure by Letters Patent of the United States, therefor is—

In a thread cutting device, the combination with a body comprising a main portion having a lateral enlargement at one end, in
20 the inner edge of which is a notch 17^a open at its outer end, and also having a chamber in its inner edge, adjacent to said notch, and a threaded opening extending from said

chamber to its outer edge, and further having a die recess in its inner edge at an intermediate point of its length, and an auxiliary
25 body portion hinged to the main body portion, at the end thereof remote from the lateral enlargement, and having a die recess in its inner edge and a lug 17 at its forward
30 end movable into and out of the notch in the lateral enlargement of the main portion and also having a chamber in the inner side of the lug 17 opposed to the chamber of the main
portion and an opening in the outer wall of
35 its chamber; of a coiled spring arranged in the opposed chambers of the body portions, and a headed screw extending through the opening in the auxiliary body portion and engaging the thread in the opening in the
40 main body portion.

Des Moines, Iowa, February 28, 1906.

RALPH A. SMITH.

Witnesses:

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