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O. SPRINGER

3,226,741

RETHREADING HAND DIE

Filed June 2, 1964

FIG. 1

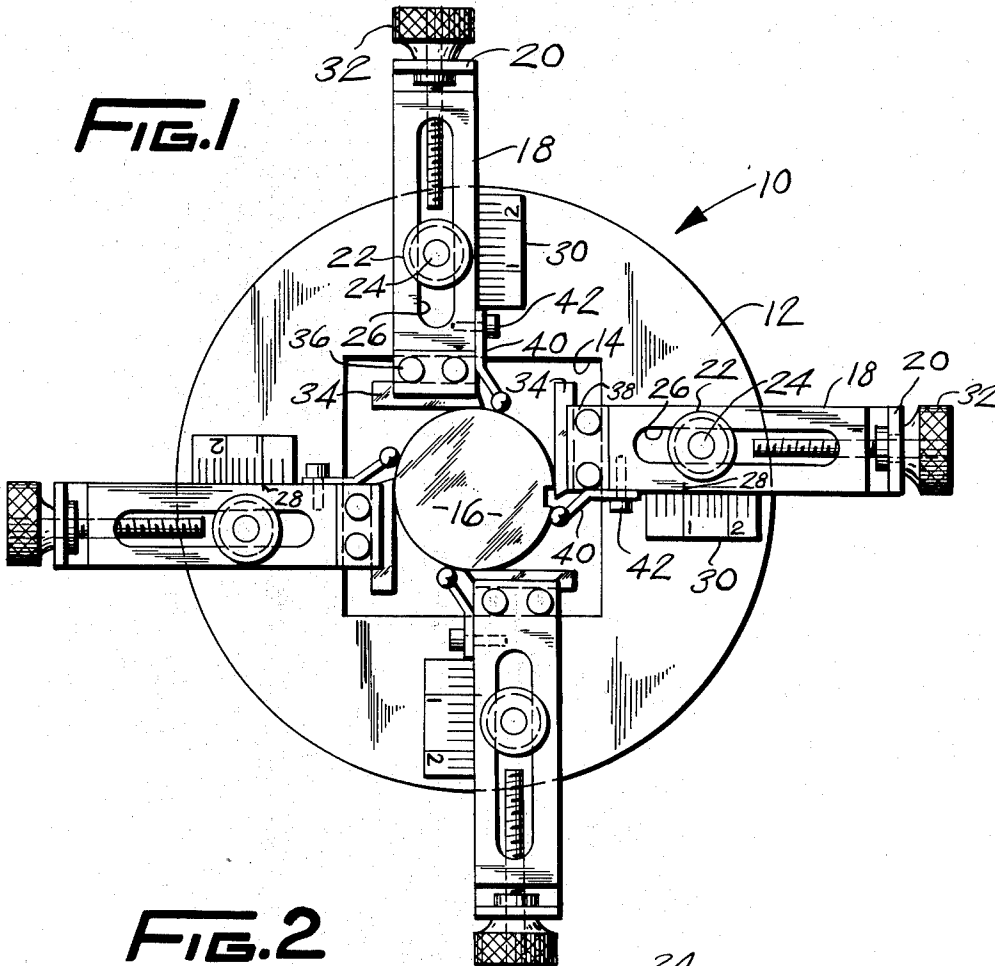


FIG. 2

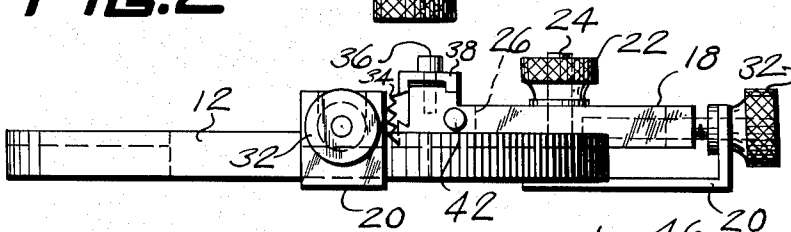
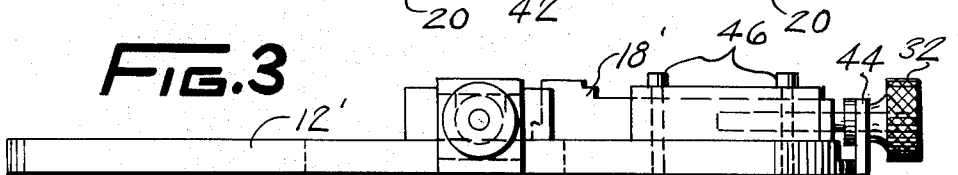


FIG. 3



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RETHREADING HAND DIE

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6 Claims. (Cl. 10-1)

This invention relates to rethreading dies and more particularly to a variable adjustable manually operated die.

It is an object of the present invention to provide a rethreading hand die which will have adjustment means to vary the diameter and the pitch of threads.

Another object of the present invention is to provide a rethreading hand die which will have a plurality of adjustable cutters and will have ball guide means to support the die on a member being rethreaded.

A further object of the present invention is to provide a rethreading hand die which will have calibration means inscribed upon the device to accurately set the cutting blades.

Other objects of the invention are to provide a rethreading hand die bearing the above objects in mind which is of simple construction, has a minimum number of parts, is inexpensive to manufacture and efficient in operation and use.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in conjunction with the accompanying drawing, in which:

FIGURE 1 is a top plan view of the present invention;

FIGURE 2 is a fragmentary side elevational view of FIGURE 1; and

FIGURE 3 is a fragmentary side elevational view showing a modified mounting means for the invention.

Referring now in detail to the drawing, a rethreading hand die 10 made in accordance with the present invention is shown to include a circular die plate 12 made of lightweight metal having a rectangular opening 14 providing a means for receiving a work piece 16 which is to be rethreaded. A plurality of sliding chaser holders 18 are offset from the center of die plate 12 and an L-shaped bracket 20 is fixedly secured to the underside of die plate 12 beneath sliding chaser holders 18 and is provided for a purpose which will hereinafter be described. A knurled lock nut 22 is threadingly received upon a set screw 24 which is freely and slidably received within an elongated slot 26 through sliding chaser holder 18. A graduation mark 28 upon the upper surface of sliding chaser holder 18 provides a means for aligning with a scale 30 which is graduated and is secured to the surface of die plate 12. A knurled adjustment screw 32 is freely received within one end of L-shaped bracket 20 and is threadingly received within the overhanging end of sliding chaser holder 18 and provides a means for adjusting rethreading hand die 10 to the proper diameter of the work piece 16. The chasers 34 are slidably received within the opposite ends of sliding chaser holder 18 and provide a means for retooling the threads of the work piece 16. A pair of set screws 36 are received within the chaser lock 38 to provide a means for securing chaser 34 to rethreading hand die 10. An angular keyway shoe 40 is secured to the side of each of the sliding chaser holders 18 by means of a set screw 42.

In use, the thread diameter to be recut is tooled sufficiently with a file or grinding to remove excess metal and the sliding pitch chaser 34 is installed in the sliding chaser holder 18, after which the proper diameter is set by rotating the knurled adjustment screw 32. If a keyway is present in the surface to be recut, the keyway shoes 40 are set and will carry the chasers 34 across the keyway.

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Rethreading hand die 10 is rotated manually by gripping the sliding chaser holders 18.

The use of the scales 30 provide a means for approximately setting due to the difference in double depth of the thread, but provide enough accuracy to set the device for rethreading. After the adjustment screws 32 are adjusted to the proper position, the set screw lock nuts 22 are rotated to secure the sliding chaser holders 18 in place.

It shall be recognized that the chasers 34 are of the tangent type and are tangent with the circumference at the center line at all times and thus the device has the advantage of being able to change diameters of work and to cut any pitch for which a chaser is available. The chasers 34 can be adjusted toward or away from the center line by loosening the set screws 36 within the chaser lock 38.

A modified form of mounting of chasers and chaser holders 18' are shown to include a plate 44 fixedly secured to the outer periphery of die plate 12' and thus the adjustment screws 32' provide a means for changing the diameter setting of the sliding chaser holders 18'. A pair of set screws 46 provide a means for securing chaser holders 18' down to die plate 12'.

It will be noted that adjustment of sliding chaser holders 18' is accomplished in the same manner as mentioned for the main embodiment of the invention.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. A rethreading hand die comprising, in combination, a circular, lightweight metal die plate, a plurality of slidable and offset chaser holders carried by said die plate providing a means for adjusting the diameter for chasers carried by said chaser holders, a plurality of scale plates carried by said die plate providing visual reference for adjusting said die holders, a plurality of knurled lock nuts carried by said device providing a means for securing said chaser holders in their proper settings, a plurality of keyway shoes carried by said device providing a means for overriding a keyway in the work piece received within said rethreading hand die, a plurality of L-shaped bracket members carried by said die plate providing means for supporting the adjustment screws and further providing handle grip means for rotating said rethreading hand die.

2. The combination according to claim 1 wherein said sliding chaser holders extend outward from said die plate and provide handle grip means for rotating said tool and said slidable chaser holders are provided with elongated slot means for receiving freely a bolt which threadingly receives said lock nuts which provide a means for securing said sliding chaser holders to said die plate, and said adjustment screws are freely received through an opening through one end of an L-shaped bracket extending beneath said sliding chaser holders, and thus said adjustment screws provide adjustment means for said chasers received by said sliding chaser holders at the proper diameter of said work piece which is received through an opening of rectangular configuration through said die plate.

3. The combination according to claim 2 wherein said sliding chaser holders are slotted on the end and slidably receive cutting chasers which cut the threads in said work piece and a pair of set screws are received through a U-shaped chaser lock to secure said chasers within the end of said sliding chaser holders.

4. The combination according to claim 3 wherein a graduation mark on each of said sliding chaser holders provides a means for aligning with one of a plurality of

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graduations upon said scales and said scales are secured to the surface of said die plate.

5. The combination according to claim 4 wherein an angular keyway shoe is secured to one side of said sliding chaser holders by means of a set screw, and said keyway shoes carry said chasers across the keyway of said work piece. 5

6. The combination according to claim 5 wherein said keyway shoes are provided with ball means, said ball means on one end of said shoes riding over the outer 10

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periphery of said work piece and in sliding engagement with the outer periphery of said work piece.

References Cited by the Examiner

UNITED STATES PATENTS

361,572 4/1887 Bavage ----- 10—104
1,648,502 11/1927 Oblinger ----- 10—121 X

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