To all whom it may concern:

Be it known that I, LAWRENCE E. WELCH, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Reaming Attachments for Die-Stocks, of which the following is a specification.

My invention relates to improvements in reaming attachments for die stocks, and the object of my improvement is to produce an attachment for die stocks whereby a pipe will be reamed simultaneously with the cutting of the thread thereof.

In the accompanying drawing: Figure 1 is a plan view of my improved die stock. Fig. 2 is a side elevation of the same, and part of a pipe. Fig. 3 is a plan view of the same with the reaming attachment removed. Fig. 4 is a perspective view of the reamer strap. Fig. 5 is a side elevation of the reamer. Fig. 6 is a front end view of the same on an enlarged scale. Fig. 7 is a sectional view on the line y y of Fig. 1. Fig. 8 is a similar view of the same with the parts in a different position from that shown in Fig. 7. Fig. 9 is a sectional view on the line y y of Fig. 1.

The die stock proper 10 involving the thread cutting portion of itself may be ordinary and comprises a body portion 11 having laterally extending handles 12 and provided with a central opening 13 in which the pipe 14 is positioned and having on the outer face a diametral way 15 interrupted by the opening 13 in which is positioned a pair of cutter blocks 16, one on each side of the opening 13, and having on their opposed faces thread cutting jaws 17. The cutter blocks 16 are each pierced through the body portion by a hole 18 suitable to receive a locking screw 19. The lower face of the way 15 is provided with a threaded hole 20 in registration with the hole 18 and suitable for receiving the end of the said locking screw 19. The locking screw 19 is made longer than usual for a purpose to be described. The die stock 10 described is suitable for cutting a thread 21 on the exterior edge in the form of a bar or swelling 22, which if not removed obstructs and seriously interferes with the flow of the water through the pipe.

By means of my attachment the reamer 23 operates to remove the bar 22 simultaneously with the cutting of the thread 21. The said attachment comprises the reamer 23 and a holder therefor in the form of a strap 24 secured in some suitable manner to the body portion 11. I prefer to secure to the strap 24 in the manner shown by means of the locking screws 19 that hold the cutter blocks 16. The said strap 24 has a body portion of U shape, comprising the said arms 25 cross-connected by the yoke 26 at the apex. The free ends of the arms 25 are provided with feet 27 having holes or slots 28 suitable for admitting the locking screws 19.

The yoke 26 is provided with a hole 29, which as shown is square, and which is in axial alignment with the pipe 14.

The feet 27 rest on the outer face of the cutter blocks 16 and the strap or holder 24 when secured by the locking screws 19 serves as an extension beyond the rear face of the die stock 10 and in line with the pipe 14, and in this extension the reamer 23 is operatively housed. The said reamer 23 comprises a reamer body 30 having a plurality of cutter blades 31, a neck 32 extending rearwardly from the said body 30 and provided at the rear end with a platform 33 from which extends rearwardly the head 34. The said head 34 is square, and fits a fit for the hole 29 in the strap 24 and is held therein by means of a cotter pin 37 which passes through a hole 38 in the said head 33. The blades 31 comprise each a tapered portion 34 at the front end and which merges into a parallel portion 35 inwardly therefrom. The said parallel portion 35 is parallel with the axis and has a radius corresponding to the radius of the bore of the pipe 14.

Accordingly, the reamer 23 is suitable for cutting away the portion of the bar 22 in excess of the interior diameter of the pipe and to leave the bore of the pipe flush and of full proper diameter.

I prefer to have the length of the reamer 23 such that the thread cutter jaws 17 will have started the thread 21 to the extent of a thread or two before the cutter's blades 31 will engage with the bar 22, as shown in Fig. 7, and will completely remove the said bar 22 before the full length of the thread...
21 has been cut as shown in Fig. 8, and this is permissible because the bur 22 is of considerably less extent than the thread 21. Also because of the difference mentioned between the extent of the thread and the bur the cutter blades 31 may be sharpened and operate in the manner described.

With my attachment as described close nipples may be reamed while the thread is being cut thereon conveniently and without injury. Also because of the shape of the reamer and by having some loose play in the engagement of the head with the strap, it is possible to cut what is known as a crooked thread and at the same time room the interior of the pipe. The loose play mentioned is obtained by having the hole in the yoke a loose fit for the head of the cutting element.

It is understood that by making minor changes in details that any attachment as described may be used with die stocks differing from the particular style shown in the drawing.

I claim as my invention—

A die stock and reamer combination comprising a die stock having means for cutting a thread on the exterior of a pipe, a reamer for reaming the interior of the said pipe, connecting means for connecting the said reamer to the said die stock so as to effect such reaming simultaneously with such cutting of the thread, the said reamer comprising a cutting element at one end and a non-circular head at the other end and in axial alignment with the said cutting element, and the said connecting means comprising a yoke having a hole for receiving the said head and that is a loose fit therefor.

LAWRENCE E. WELCH.

Witnesses:

SHEFFIELD H. CLARKE,
ROGER W. EDWARDS.