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ADJUSTING MEANS FOR THREADING DIES

Filed April 25, 1927

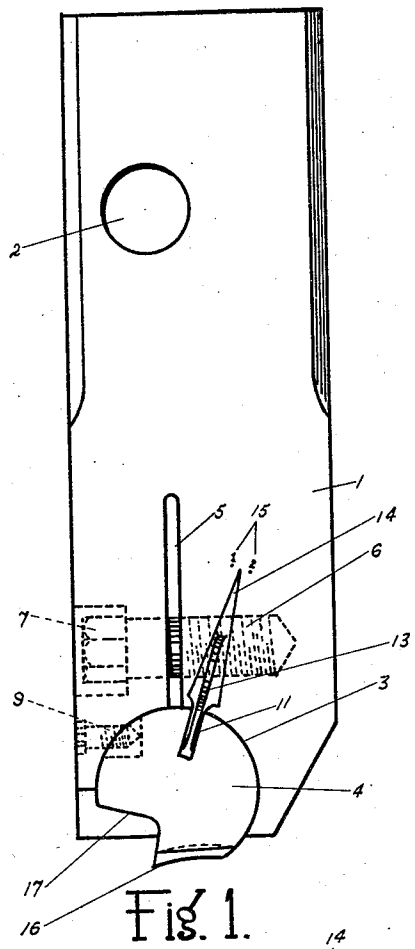


Fig. 1.

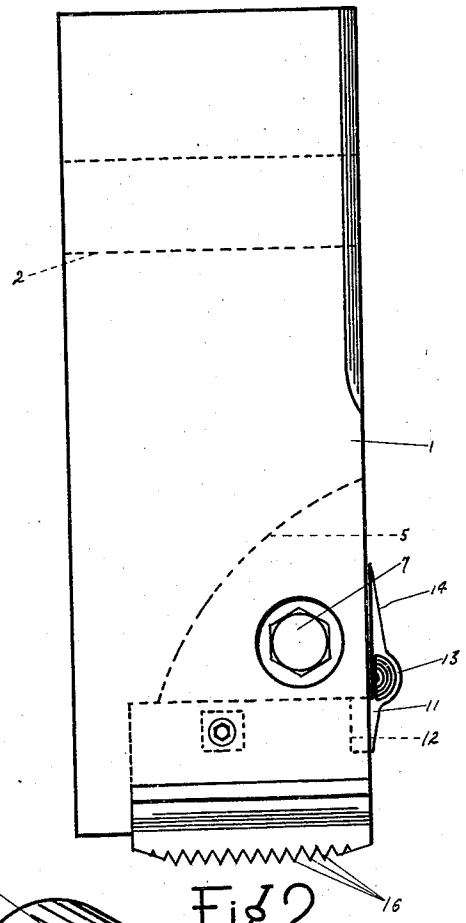


Fig. 2.

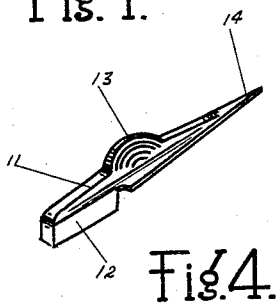


Fig. 4.

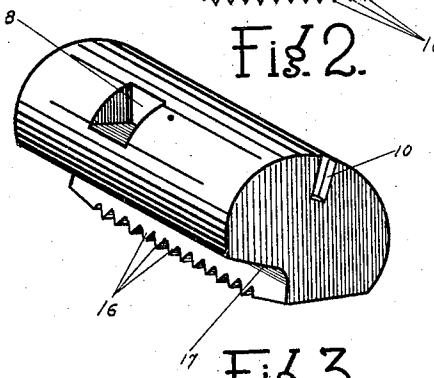


Fig. 3.

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UNITED STATES PATENT OFFICE.

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ADJUSTING MEANS FOR THREADING DIES.

Application filed April 25, 1927. Serial No. 186,389.

My invention pertains to threading dies for cutting threads on pipe, bolts, nipples, etc. and has particular reference to a means for adjusting such dies within their holders.

My invention is especially adaptable to the round or circular type of die which is rotatably adjustable within its holder.

The primary object of my invention is to provide a novel and simple form of die adjusting means to permit the ready and quick adjustment of a given set of dies to adapt them for work upon varying sizes of pipe or other material to be threaded.

Another object is to provide such an adjusting means which serves as an indicator of the position of the die within the holder.

A still further object is to provide an adjusting element which may be removed from the die after use and thus lessen the likelihood of accidental displacement of the die after it has been set.

Other objects and advantages in details of construction and operation will be apparent as the description proceeds, reference now being had to the accompanying drawing wherein like reference numerals indicate like parts.

In the drawing:—

Figure 1 is a side view of a die holder and die, showing my improved adjusting means thereon.

Figure 2 is a front view of the same.

Figure 3 is a detail perspective view of a die in connection with which my adjusting means is used.

Figure 4 is a detail perspective of the adjusting element.

Reference numeral 1, indicates a die holder of the usual construction and provided with an opening 2 adapted to receive the usual headed stud (not shown) which operates within the grooves in the usual cam plate, whereby the die holder may be adjusted radially within the head. Such structure is well known, and need not be here illustrated nor described.

The holder 1 is provided at its lower end with a circular opening 3 adapted to receive the circular die 4. The opening 3 extends substantially through the width of the holder and centrally of said opening and extending from a point adjacent the inner end thereof outwardly to the face of the holder is an arcuate shaped slot 5 dividing the die holder just above the die 4 into clamping sections. A tightening screw 6 extends from one side wall of the holder through the slot 4 and into the opposite side of said holder. This clamping screw 6 is provided with a socket head 7 whereby a socket wrench may be inserted and upon the tightening of the screw serve to clamp the die holder about the die 4 thus holding it rigidly within the holder. It will be observed that the socket head 7 of the screw 6 lies either flush with or below the surface of the die holder.

The die 4 is provided in one side with a recess 8 against the vertical wall of which engages a set screw 9 likewise provided with a socket head, and by means of which the die 4 may be given a very fine adjustment within the opening 3 within the holder, and which in addition serves to take the thrust of the die during the cutting operation.

It will be understood that when the screw 6 is loosened, the die 4 may be rotated within the holder for adjustment to the various sizes of pipe to be threaded. This adjustment is provided in order to permit the use of a single set of dies for pipe varying widely in size. For instance, in one position of the die sufficient clearance will be provided for pipe of from 2 inches to 4 inches in diameter whereas for pipe from 4 inches to 8 inches in diameter, greater clearance is necessary and the die must be adjusted to the left in Figure 1 to permit such clearance.

Novel means have been provided for so adjusting the die and indicating its adjusting position.

A groove or recess 10 is cut in the outer end of the die 4 and opening to the periphery thereof. An adjusting member 11 has on its underside a keyway 12 adapted to fit within the groove 10. The adjusting member 11 is provided on top with a finger piece 13 and at one end terminates in a pointer 14. A scale 15 may be marked or otherwise provided in the die holder and over this scale the pointer 14 is adapted to move when adjusting the die. It will be observed with reference to Figure 2 that when the adjusting element 11 is positioned within the groove 10 for adjusting the die, the pointer 14 lies flush over the surface of the holder and in close proximity thereto. The advantage of the elongated pointer 14 will be obvious for the reason that an adjustment to a very slight degree of the die 4

is sufficient to provide the clearance above mentioned for different sizes of pipe. Such adjustment is so slight in fact as to be almost imperceptible between the die and holder. By elongating the pointer 14, however, the outer end of such pointer describes a much wider arc than does the key end 12. Thus it is possible for the operator to make the fine adjustments necessary and to be able to see such adjustments on the scale 15.

The die 4 is provided with cutting teeth 16 laterally across one point on its periphery and directly in front of the teeth 16 the die is cut away as at 17 to provide for the discharge and removal of the cuttings as the threading operation progresses.

In the operation of my invention, the clamping screw 6 is loosened and the die 4 slipped into the opening 3. The adjusting element 11 is now inserted in the end of the die and the die rotated to No. 1 on the scale, if for instance pipe from 4 inches to 8 inches in diameter is to be threaded, or to No. 2 on the scale, if smaller sized pipe is to be threaded. When the adjustment has been made, the set screw 6 is tightened thereby rigidly clamping the die 4 on the holder. The set screw 9 may be now adjusted until the point engages the die within the recess 8 so as to take the thrust thereof during the threading operation.

If it becomes necessary, due to wear, to sharpen or grind off the points of the cutting teeth 16, or due to slight variation in dies, the set screw 9 may be untilized to provide a very fine adjustment to take care of such grinding or variation.

After the die has been adjusted in the holder by means of the adjusting element 11, such element may be removed and, the outer end of the die being flush with the side wall of the holder, there is little likelihood of accidental displacement of the die.

Of course, many changes may be made in details of arrangement without departing from the spirit and scope of my invention. I do not limit myself, therefore, to the exact structure shown and described, other than by the appended claims.

I claim:—

1. In combination, a die holder provided with a clamping portion, a circular threading die therein, means for rotatably adjusting said die, comprising a removable pointer said die and pointer having interengaging means whereby said die may be adjusted by said pointer, and a scale over which said pointer moves when in adjusting position.

2. In combination, a die holder provided with a clamping portion, a circular threading die therein, means for rotatably adjusting said die comprising a recess in one end of said die, a removable pointer having a key engageable in said recess for rotating said die, and a scale on said holder substantially spaced from said die, over which said pointer moves to indicate the position of said die.

3. In combination, a die holder provided with a clamping portion, a circular threading die therein, means for rotatably adjusting said die comprising a recess in one end of said die, a removable pointer having a key engageable in said recess for rotating said die, and a scale on said holder substantially spaced from said die, over which said pointer moves to indicate the position of said die, said pointer lying flush with the surface of said holder when in die adjusting position.

GEORGE M. MEHL.