

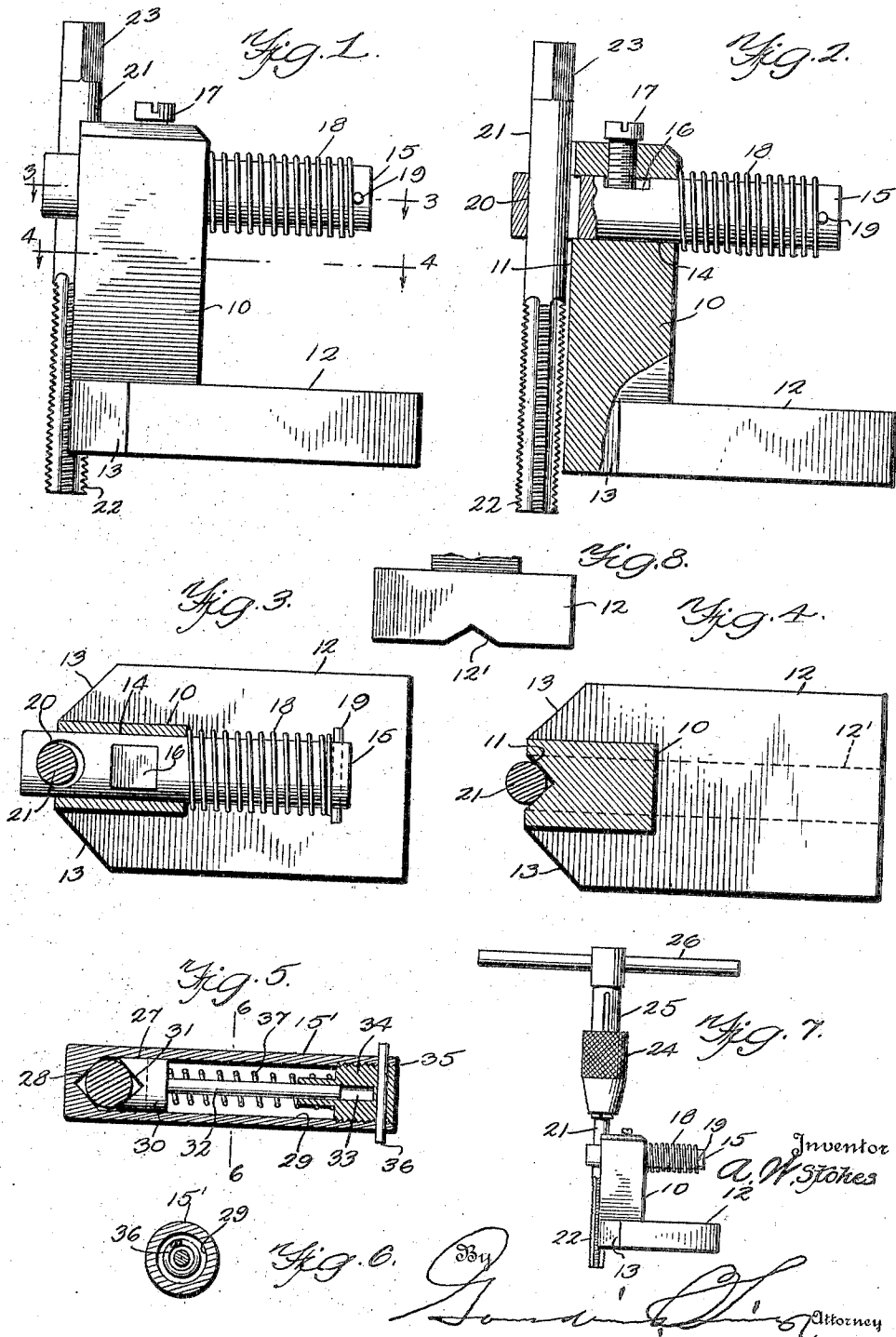
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GUIDE DEVICE FOR TAPS OR REAMERS

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UNITED STATES PATENT OFFICE.

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GUIDE DEVICE FOR TAPS OR REAMERS.

Application filed November 8, 1921. Serial No. 513,790.

To all whom it may concern:

Be it known that I, ALBERT W. STOKES, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Guide Devices for Taps or Reamers, of which the following is a specification.

My invention relates to improvements in guide devices for screw-thread cutting taps, or reamers.

An important object of the invention is to provide a device of the above mentioned character, which will retain the tap or reamer in a proper position with relation to the opening, and which is adapted to receive and hold cutters of different sizes, and is self-adjusting with respect to holding such cutters.

A further object of the invention is to provide a device of the above mentioned character, which will permit of the passage of the turnings or borings through the opening, and which is adapted to permit of the use of the device close to a wall, at right angles thereto.

A further object of the invention is to provide a device of the above mentioned character, which is simple in construction, cheap to manufacture, strong and durable.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same.

Fig. 1 is a side elevation of the guide device embodying my invention, the turning element being removed,

Fig. 2 is a central horizontal section of the same,

Fig. 3 is a horizontal section taken on line 3—3 of Fig. 1,

Fig. 4 is a similar view taken on line 4—4 of Fig. 1,

Fig. 5 is a central horizontal sectional view through a slightly different form of a tap holding element,

Fig. 6 is a transverse section taken on line 6—6 of Fig. 5,

Fig. 7 is a side elevation of the device shown in Fig. 1 with the turning element applied, and,

Fig. 8 is an end elevation of the base.

In the drawings, wherein for the purpose

of illustration is shown a preferred embodiment of my invention, the numeral 10 designates the body portion of the guide device, which body portion is held at a right angle to the longitudinal axis of the opening. This body portion, Fig. 4, is provided upon its forward face with a longitudinal recess or groove 11, which is V-shaped in cross section or tapered, as shown. The body portion 10 is rigidly mounted upon a base or foot 12, arranged at a right angle to the body portion. The forward end of the base is tapered or cut away at 13. The forward end of the base terminates flush with the forward face of the body portion 10, so that the forward end of the base may be brought in close relation to the opening but will not cover the opening, the recess 11 extending through the forward end of the base 12. This permits of the free passage of the borings, and also the employment of the device in close work. The base 12 extends rearwardly beyond the body portion 10 for a substantial distance and may be conveniently held in place by the fingers.

The base 12 is provided in its lower face with a V-shaped groove 12', which receives a portion of the round work, if the opening is formed in a rod or the like. The body portion 10 is provided near its upper end with a transverse opening 14, slidably receiving a holding element or bar 15, provided in its top with a longitudinal groove 16, receiving the inner end of a screw 17, this screw serving to limit the longitudinal movement of the holding element 15 and also prevents the same from turning upon its longitudinal axis. A compressible coil spring 18 surrounds the rear end portion of the holding element 15, and is confined between the body portion and a pin 19 extending transversely through the element 15, as shown.

The holding element 15 is provided in its forward portion with a circular opening 20, having a larger diameter than the maximum diameter of the tap in connection with which the device is to be used.

The numeral 21 designates a tap, having thread cutting elements 22, and provided at its top with a square portion 23 engaging within the socket 24 of a turning element 25, having a transverse handle 26.

I contemplate using a holding element of slightly different construction, and in Fig. 5 the holding element 15' corresponds to the

holding element 15 and is provided with an opening 27, having a tapered forward portion 28. The opening 27 leads into a bore 29, slidably receiving a plunger 30, having a tapered or V-shaped recess 31, arranged opposite the recess 28. The plunger 30 carries a stem 32 rigidly secured thereto, and this stem may slide within an opening 33, formed in a plug 34, screw-threaded into the bore 29 at 35 and held against turning movement by the pin 19, engaged by the spring 18. A compressible coil spring 37 surrounds the stem 32 and moves the plunger 30 forwardly. It is thus seen that the holding element 15' is movable with relation to the body portion 10, and the plunger 30 is movable with relation to the holding element, whereby the holding element may be used in connection with taps having a large range of sizes, which taps will be held against displacement, upon being inserted between the recesses 28 and 31.

In the use of the device, the holding element 15 may be forced forwardly, and the tap 21 inserted between the opening 20. The holding element is then released and the spring 18 will move the element 15 rearwardly, which in turning will bind the tap against the wall of the recess 11. The base 12 is held in engagement with the work having an opening therein and the device is advanced so that the forward end of the tap may be entered in the opening, the tap being held by the device, perpendicular to the surface of the work. The tap is turned by the turning element, as is obvious.

It is to be understood that the forms of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A guide device for screw-thread cutting taps, reamers or the like, comprising a body portion having one end thereof adapted to contact with the work having an opening therein, said body portion being provided upon one side with a groove, a holding element slidably engaging the body portion and adapted to move transversely of the groove, said holding element having means to slidably receive and hold a tap or the

like, and yielding means to move said holding element in one direction.

2. A guide device for screw-thread cutting taps, reamers or the like, comprising a body portion having a base, said body portion being provided upon its forward side with a groove which is tapered in cross section, said body portion also having a transverse opening, a holding element slidably within the transverse opening and having means to slidably receive the tap or the like, and a spring surrounding a portion of the holding element and serving to move it in one direction.

3. A guide device for screw-thread cutting taps, reamers or the like, comprising a body portion having a base, said body portion being provided upon its forward side with a groove which is tapered in cross section, said body portion also having a transverse opening, a holding element slidably within the transverse opening and having an opening therein to receive a tap or the like, and move the tap into said groove, and a spring surrounding a portion of the holding element and serving to move it in one direction.

4. A guide device for screw-thread cutting taps, reamers or the like, comprising a body portion having a base, said body portion being provided with a longitudinal groove and a transverse opening, a holding element slidably within the transverse opening and provided with an opening having a tapered portion, a plunger slidably mounted upon the holding element and having a tapered recess arranged opposite the tapered portion of the opening of the holding element, a spring to move the plunger forwardly, and a spring to move the holding element rearwardly.

5. A guide device for screw-thread cutting taps, reamers or the like, comprising a body portion and a base secured to the body portion, said base being provided upon its lower face with a longitudinal opening which is substantially inverted V-shaped in cross section, said body portion having an opening therein and provided upon one side with a groove, a holding element slidably mounted within said opening to move transversely of the groove, said holding element having means to slidably receive and hold a tap or the like, and yielding means to move said holding element in one direction.

In testimony whereof I affix my signature.
ALBERT W. STOKES.