A. B. LANDIS.

CUTTER HEAD.

APPLICATION FILED DEC. 22, 1909.

1,017,885.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 1.

Fig. 2.

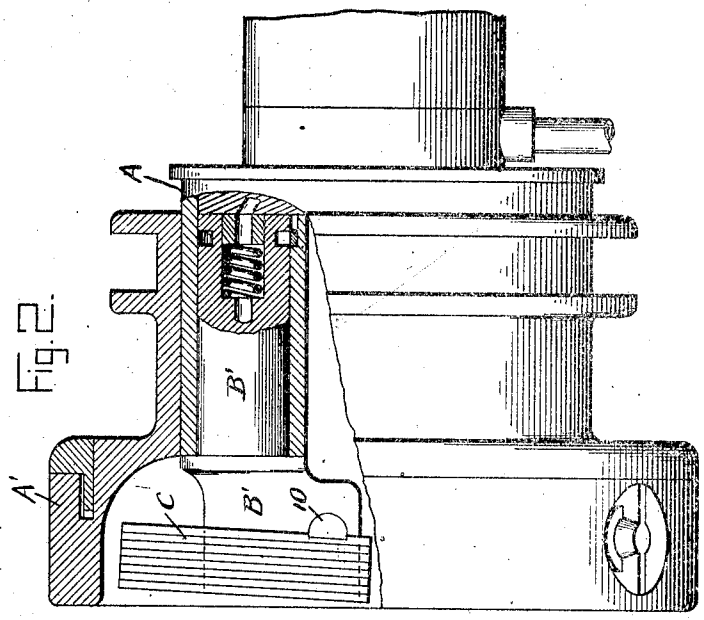
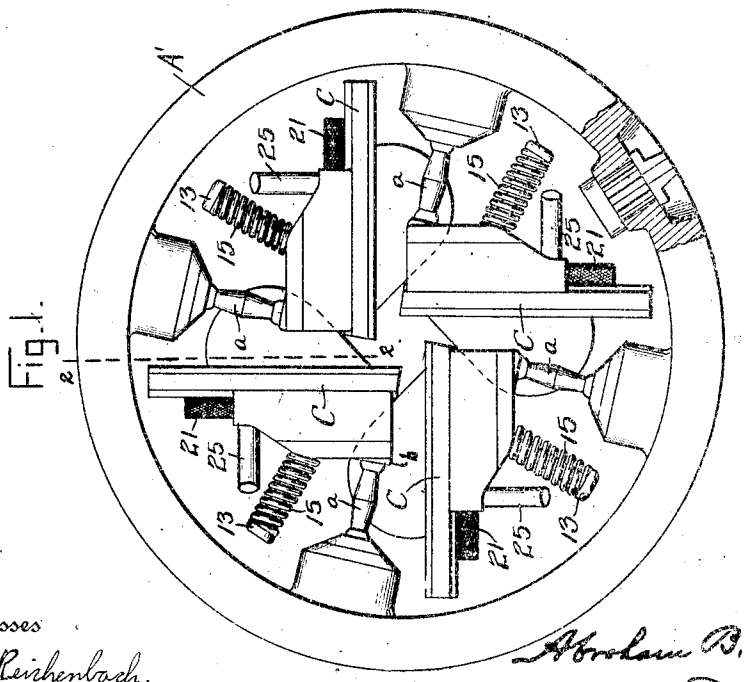


Fig. 1.



Witnesses

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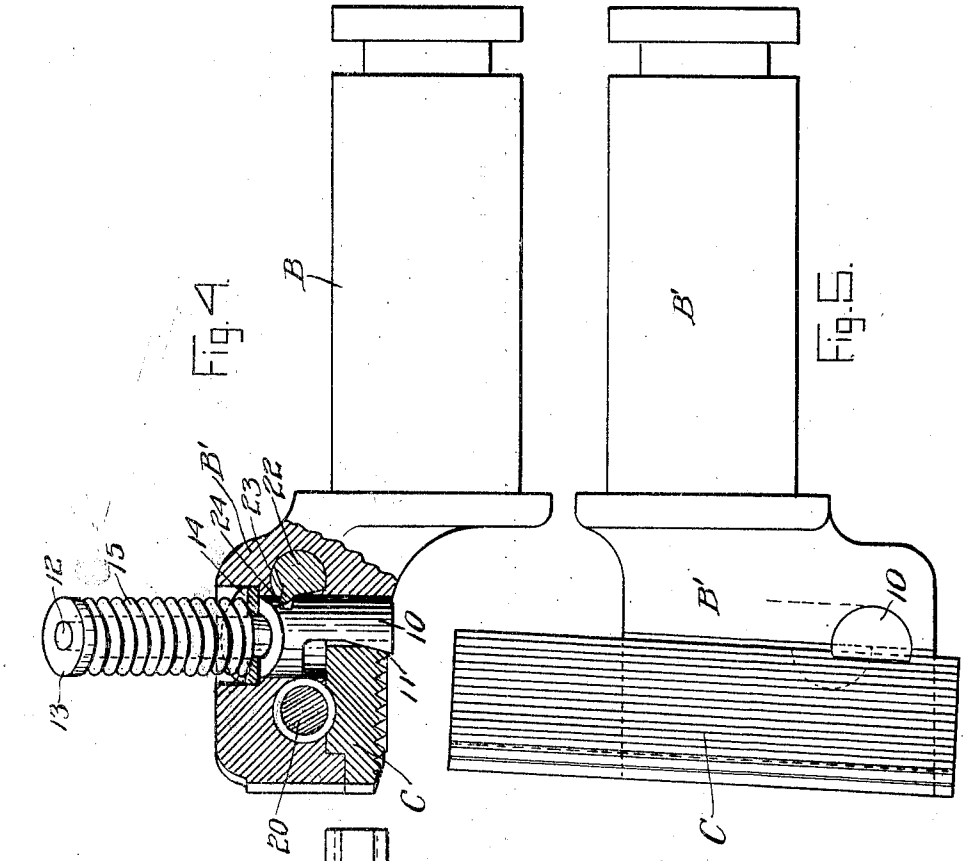

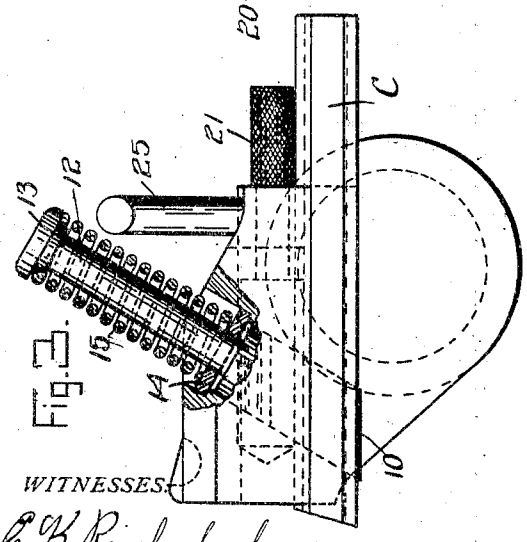

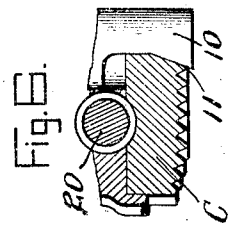

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ABRAHAM B. LANDIS, OF WAYNESBORO, PENNSYLVANIA.

CUTTER-HEAD.

1,017,885. Specification of Letters Patent. Patented Feb. 20, 1912.

Application filed December 22, 1909. Serial No. 534,542.

To all whom it may concern:

Be it known that I, ABRAHAM B. LANDIS, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Cutter-Heads, of which the following is a specification.

My said invention consists in various improvements in the details of construction and arrangement of parts of cutter-heads for cutting threads on bolts, screws, etc., said invention relating principally to the means for securing the cutter in the cutter-holder, whereby said cutter may be secured in a rigid manner and easily and conveniently released and adjusted, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a front elevation of the cutter-head embodying my said improvement, Fig 2 a view partly in side elevation and partly in longitudinal section as on the dotted line 2—2 in Fig. 1. Fig. 3 a front elevation of the holder with a portion broken away to show the parts more clearly, Fig. 4 a side elevation with a portion in section to show the means for securing and adjusting the cutter, more clearly, Fig. 5 an underside plan of the structure as shown in Fig. 4, and Fig. 6 a view similar to a portion of Fig. 4 illustrating a modification.

In said drawings the portions marked A represent the body, or frame, of the cutter-head, B the cutter-holders and C the cutters.

The body or frame A is, or may be, of any approved construction preferably of the form more fully illustrated and described in my application No. 529,152, filed November 20, 1909. It is formed with the bear-Figs for the cutter-holders located equidistant around a central aperture and is adapted to be secured on the end of the spindle of the machine in any approved manner. It is provided with a part A′ surrounding the body and adapted to have a limited longitudinal movement thereon between which and the outer ends of the cutter-holders are interposed suitable toggle pins *a*.

The construction in operation of the adjusting mechanism for regulating the size of the die and for opening and closing the die may be the same as shown and described in my above named application, or of any other construction found appropriate.

The cutter-holders B are each of the form best shown in Figs. 3, 4 and 5 and consist of a trunnion adapted to be mounted in one of the bearings provided therefor in the body A, said trunnion carrying on its forward end a part B′ which projects to one side of the axis of said trunnion and is formed with a recessed face to receive the cutter. It is also formed with a bearing *b* for the inner end of the toggle pin *a*.

The cutters C are each a block of steel of appropriate dimensions having cutting grooves extending longitudinally in their faces and are formed to rest in the recess formed in the cutter-holder provided therefor. Said recess is formed as best shown in Fig. 4 with a shoulder near its outer edge, preferably, of a right-angular formation, or, as shown in Fig. 6, with an inwardly projecting flange against which the outer edge of the cutter may rest. In the form shown in Fig. 4 the cutter C is formed with a recess in its outer back corner adapted to fit over the corner of the shoulder formed at the outer edge of the recess in the holder. The inner edge of the cutter is formed tapered at a point adjacent to the thread-cutting grooves. A clamping bolt or plunger 10 is mounted in a socket, or perforation, in the part B′ of the holder adjacent to and adapted to engage with the inner edge of said cutter, its lower end being formed with a tapered face 11 adapted to impinge against the tapered inner edge of said cutter. Said bolt is formed with a shank 12 projecting for a distance beyond the part B′ on the outer end of which is mounted a nut, or plate, 13. A plate, or washer, 14 is mounted on a shoulder formed near the outer end of the socket in which the plunger is operated, and a spring 15 is interposed between said plate 14 and the plate 13, on the outer end of said shank, the

tension of said spring being directed against said plate 13 and tending to force the bolt outwardly with its tapered face 11 against the tapered inner edge of the cutter, thus clamping said cutter firmly between said tapered edge and the angular engagement with the recess in the holder at the outer back corner. In the construction shown in Fig. 6 the clamping engagement would be between the clamping bolt 10 and the flange *b* on the outer face of the cutter-holder. Screw-threads are formed in a groove on the back of the cutter C and a screw 20 is mounted in a longitudinal perforation in the part B' and adapted to engage therewith for holding and adjusting said cutter longitudinally. Said screw 20 has a thumb nut 21 on its outer end by which it may be operated. A rocking cylinder 22 is mounted in a perforation alongside plunger 10 and has a radially projecting tongue or rib 23 which engages with a notch 24 in the side of said plunger. A lever 25 is mounted in the outer end of said cylinder and serves as a means for operating the same to force the plunger outwardly to loosen up the engagement between the parts when the screw 20 may be turned to adjust the cutter, or the cutter may be removed and replaced.

The operation of my said invention will be understood from the foregoing description.

It will be seen that a construction is thus provided which will secure the cutter in place in a very secure manner and at the same time be automatic in its action while permitting a very convenient adjustment of the parts and at the same time a construction is provided which is comparatively inexpensive as well as most efficient in operation and results

Under the rules of practice a cross reference is made to my co-pending application No. 534,542 relating to analogous subject matter.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

1. A cutter-head comprising a cutter-holder with a recess for the cutter, a cutter mounted in said recess with one edge resting against a shoulder in said recess and its other edge formed tapered, and a spring mounted clamping jaw mounted in a perforation in said holder alongside the tapered edge of said cutter and formed with tapered faces to engage therewith and clamp said cutter against said shoulder, substantially as set forth.

2. A cutter-head comprising a holder formed with a recess to receive the cutter, a cutter mounted in said recess with its outer edge resting against a shoulder at the outer edge of said recess, said cutter formed with a tapered edge adjacent to the cutting grooves, a spring mounted clamping member mounted in a socket adjacent to the inner edge of said cutter and formed with a tapered face adapted to engage with the tapered edge of said cutter, means for operating said clamping member against the action of said spring, and means for holding said cutter longitudinally, substantially as set forth.

3. A cutter-head comprising a cutter-holder formed with a recess to receive the cutter said recess being formed at its outer edge with a bearing face for the outer edge of the cutter to rest against, said cutter mounted in said recess and formed with a tapered corner on its inner edge adjacent to its face, a clamping member mounted to slide in a socket adjacent to said inner edge and formed with a tapered face arranged to engage with said tapered corner, means for normally forcing said clamping member into engagement with said tapered corner, means for disengaging said clamping member, and means for holding said cutter longitudinally, substantially as set forth.

4. A cutter-head comprising a cutter-holder formed to receive and support the cutter, a clamp for securing the cutter in said holder comprising a spring mounted plunger with a tapered face and arranged to engage one corner of said cutter and clamp the same against a fixed support at its opposite edge, substantially as set forth.

5. A cutter-head comprising a cutter-holder formed to receive and support the cutter, a cutter mounted therein with one edge resting against a fixed support or jaw in said holder and a movable clamping member with a tapered face arranged to engage with the opposite edge of said cutter and clamp it against said fixed support, substantially as set forth.

6. A cutter-head comprising a cutter-holder formed to receive the cutter and provided with a fixed rest or jaw to support the back outside corner thereof, a cutter mounted in said holder against said support or jaw and a movable clamp with a tapered clamping face mounted in said holder and arranged to bear against the inner front corner of said cutter and force it against said fixed support, substantially as set forth.

7. A cutter-head comprising a cutter-holder formed with a recess to receive and support the cutter, a fixed support or jaw at the outer edge of said recess, the cutter mounted to rest against said fixed support at its outer edge formed with a tapered corner adjacent to its face on its inner edge, a spring mounted clamping member formed with a tapered face and arranged to bear against said tapered corner, a rocking cylinder with a radially projecting tongue en-

gaging with a notch in the side of said clamping member for operating the same against the action of said spring and means for holding the same longitudinally, substantially as set forth.

In witness whereof, I, have hereunto set my hand and seal at Washington, District of Columbia this 17th day of December, A. D. nineteen hundred and nine.

ABRAHAM B. LANDIS. [L. S.]

Witnesses:
E. W. BRADFORD,
L. A. PRICE.