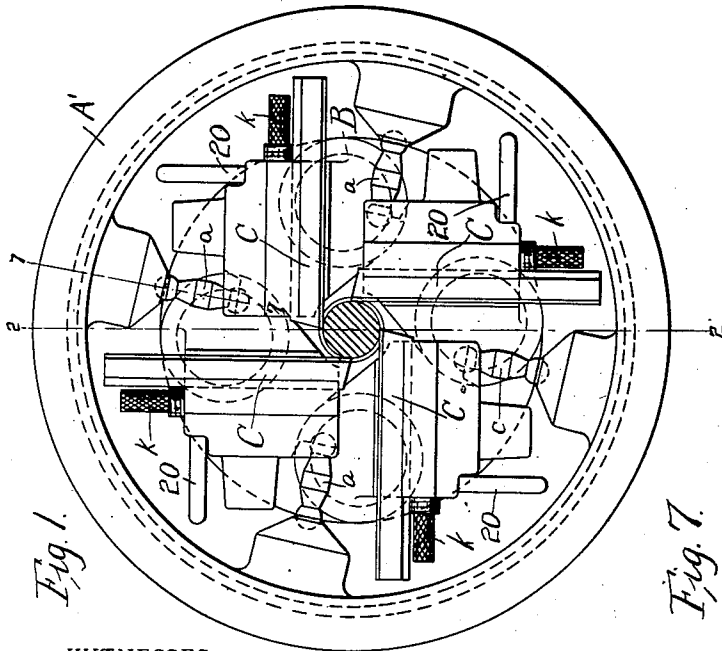
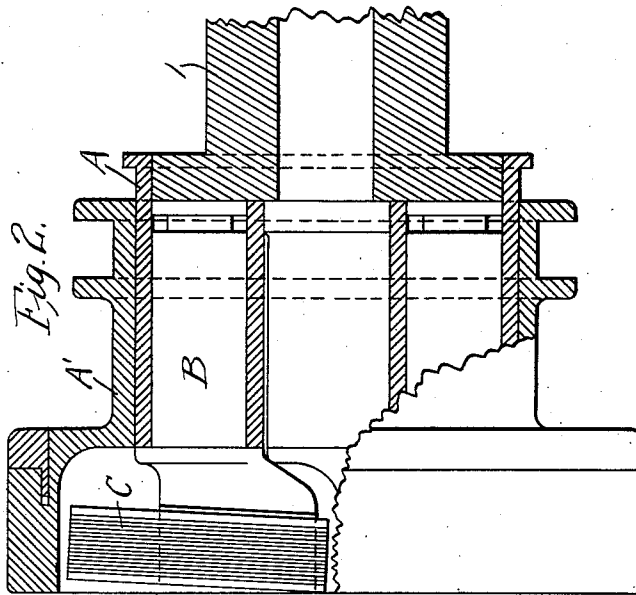


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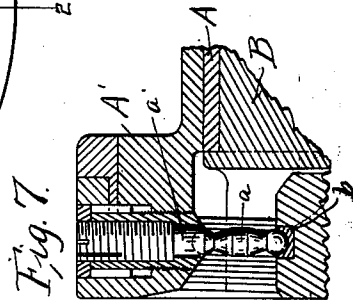
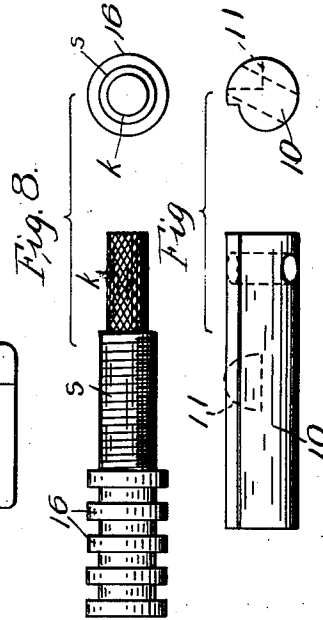
Patented Feb. 20, 1912.
2 SHEETS—SHEET 1.



WITNESSES:

L. A. Price.

C. K. Reichenbach.



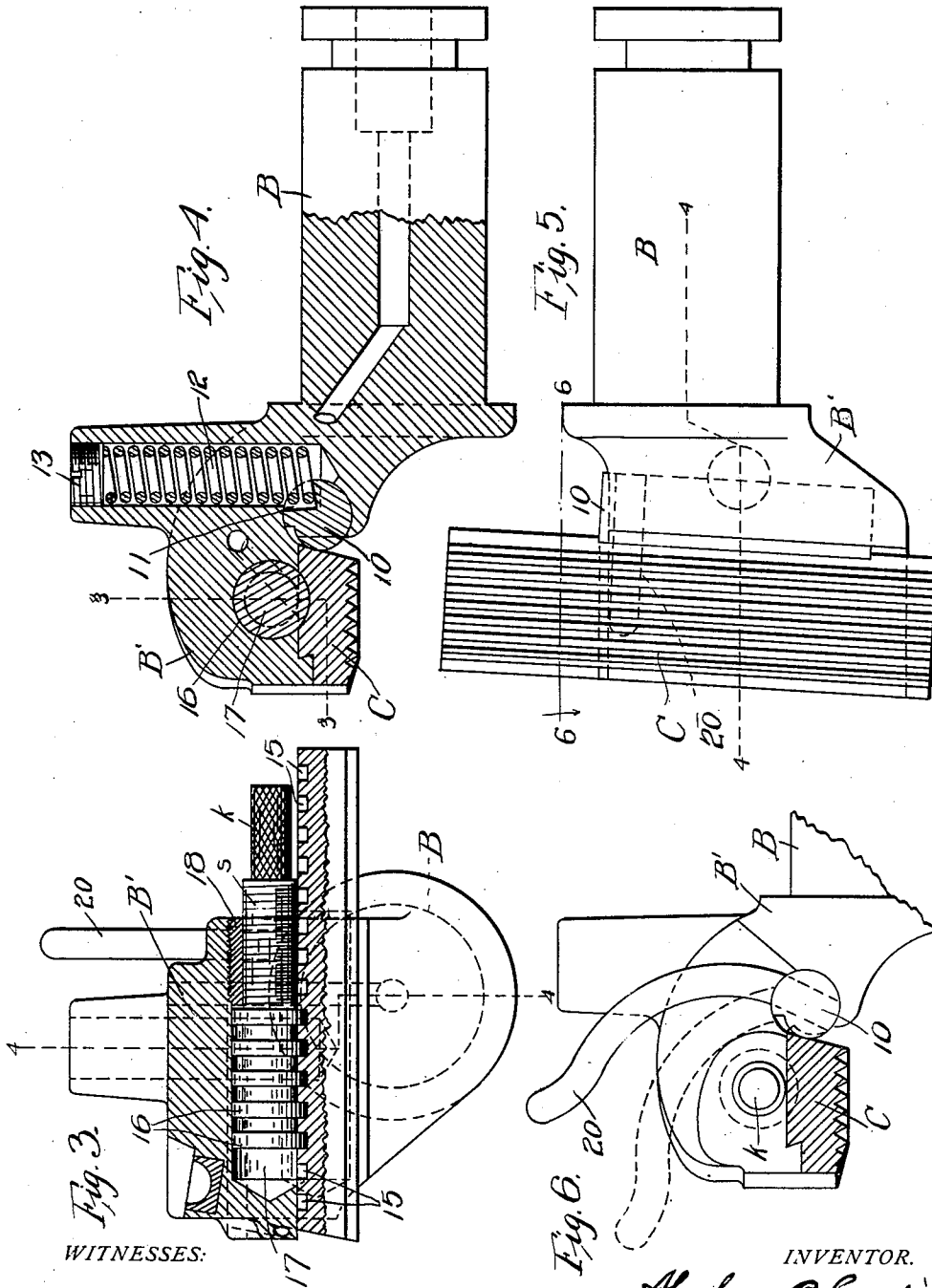
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A. B. LANDIS.
CUTTER HEAD.
APPLICATION FILED FEB. 4, 1910.

1,017,887.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 2.



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CUTTER-HEAD.

1,017,887.

Specification of Letters Patent. Patented Feb. 20, 1912.

Application filed February 4, 1910. Serial No. 542,089.

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., being in general character similar to the cutter head shown in my companion application No. 541,565, filed February 2, 1910, said invention relating principally to the means for securing the cutter in the cutter-holder, and means for holding and adjusting it longitudinally, whereby said cutter may be secured in a rigid manner and easily and conveniently released and adjusted without the use of tools, 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 a cutter-head embodying my said improvement, Fig. 2 a longitudinal section through the same on the dotted line 2-2 in Fig. 1, except that part of the rim is shown in elevation, Fig. 3 a front elevation of the holder with a portion in section, as on the dotted line 3-3 in Fig. 4, to show the cutter and adjusting means more clearly, Fig. 4 a section on the dotted lines 4-4 in Figs. 3 and 5, Fig. 5 an underside plan of the structure as shown in Fig. 4, Fig. 6 a detail view as seen when looking in the direction indicated by the arrows from the dotted line 6-6 in Fig. 5, Fig. 7 a detail section on the dotted line 7-7 in Fig. 1, Fig. 8 a side elevation and end view of the cutter holding and adjusting screw, and Fig. 9 a side elevation and end elevation of the cutter securing cam.

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

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 bearings for the cutter-holders located equidistant around a central aperture and is

adapted to be secured on the end of the spindle 1 of the machine in any approved manner. It is provided with a part A', which surrounds the body and is adapted to have a limited longitudinal movement thereon. Bearings *a'* are carried in the outer end of said part between which and the outer end of the cutter-holders are interposed toggle pins *a*. The construction and arrangement of the adjusting mechanism for regulating the size of the die is shown in detail in Fig. 7, the operation of which being fully described in my above named application need not be repeated herein. It will be understood, however, that any other form or arrangement of adjusting mechanism found appropriate may be used.

The cutter-holders B are each of the form best shown in Figs. 3, 4, 5 and 6 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 recess in its face to receive the cutter. It is also provided with a bearing *b* for the inner end of the toggle pin *a*. The face of the recess which is in line with the axis of the trunnion is formed with a longitudinal overhanging flange on its outer edge with a tapered inner edge which constitutes a holding flange, or edge, that is solid, or in piece, with the holder. Said rigid holding flange on the outer edge of the holder furnishes an unyielding support for the cutter against the strain incident to its engagement with the work in drawing the same into the die.

Each of the cutters C is a block of steel of appropriate dimensions having cutting grooves extending longitudinally of its face and formed with a recess in its back outside corner the outer edge of which is tapered to correspond to the tapered inner edge of the flange on the outer edge of part B'. The inner edge of the cutter is also formed with a tapered face extending reversely to the taper of the recess on the opposite side of said cutter and a cam, or eccentric, cylinder 10 mounted in a longitudinal perforation in the part B' is adapted to bear with its cam face against said tapered inner edge for substantially its entire length, or throughout the entire width of the holder, thus forming a support for the cutter for a considerable distance on its opposite edges and insuring its rigid and steady support. Said

cam cylinder 10 is formed with a right-angular socket or notch 11, the sides of which are substantially radial, and upon one side of which bears one end of a coiled spring 12 mounted in a socket in said part B'. The outer end of said socket is closed by a screw-plug 13 which serves as the bearing for the outer end of said spring 12 and also as a means for adjusting the tension thereof. The tension of the spring 12 being exerted against the radial face of the notch 11 tends to turn the cam cylinder 10 on its bearings and force the cam face thereof against the tapered inner edge of the cutter C, which forces the tapered shoulder on its back, near its outer edge, into close engagement with the tapered overhanging flange on the outer edge of the part B' and also forces said chaser backwardly against the horizontal face of the part B' and secures it firmly to its seat therein. The back of each chaser C is formed with a series of transverse grooves or notches 15 with which circumferential rings 16 on a holding cylinder 17 are adapted to engage. Said holding cylinder 17 is mounted in a transverse perforation in the part B' and at an intermediate point is formed a screw-threaded section which engages with a screw-threaded sleeve, or nut, 18 mounted in the outer end of said perforation. The extreme outer end of said cylinder 17 has a knurled portion *k* for the purpose of serving as a means for the turning of said cylinder.

While I have shown a series of the rings 16 formed on cylinder 17 it will be understood, of course, that no special number are required and that the operation will be the same whether there are one or any other number. I regard that by having a series of said rings the cutter will be more rigidly supported and more conveniently adjusted. It will be noted by an examination of Fig. 3 that the notches 15 are formed at regular intervals throughout the entire length of the cutter, in its back, and that by engaging the rings 16 with the appropriate notches the front end of the chaser or cutter may be brought to the desired relative position and that the turning of the cylinder 17 to adjust the cutter longitudinally will only be necessary in adjusting said cutter for distances equal to the distance between said notches. The cam cylinder 10 is provided with a lever 20 which is adapted to work in a recess in the end of part B' which may be utilized to turn cam 10 against the action of the spring 12 and thus release the pressure upon the cutter C so that said cutter C may be slid to disengage from the overhanging tapered flange, or may be eased sufficiently to permit the longitudinal adjustment thereof by means of the turning of the cylinder 17. The pressure by the hand or thumb upon the lever 20 to carry it in the direction

shown in dotted lines in Fig. 6 from the position shown in whole lines will move the cam face inward sufficiently to permit the removal or replacing of said cutter. As soon as the cutter is in position to be clamped the releasing of said lever will permit spring 12 to expand and carry the cam around to the position shown in whole lines in Figs. 4 and 6 and secure said cutter rigidly in position.

Under the rules of practice a cross reference is made to my co-pending applications No. 534,542 and No. 541,565.

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 formed with a recess to receive the cutter the outer edge of said recess being formed with an overhanging flange, a cutter mounted in said recess and formed with a shoulder near its outer back corner adapted to engage with said overhanging flange, and an eccentric clamping member mounted in a recess in the holder parallel with and alongside the inner edge of the cutter throughout the width of the holder, and means for normally forcing said cam against said inner edge to secure the cutter in position, substantially as set forth.

2. A cutter-head comprising a cutter-holder formed with a recess to receive the cutter said recess being formed with an overhanging flange at its outer edge formed with a tapered inner face, a cutter formed with a shoulder to engage with said tapered inner face of said overhanging flange and with its inner edge also formed tapered, a cam cylinder for engaging the inner edge of said cutter, and a spring for holding said cam into engagement therewith, substantially as set forth.

3. A cutter-head comprising a cutter-holder formed with a recess to receive the cutter said recess being formed with an outer rigid overhanging flange, a cutter mounted in said recess formed with a tapered shoulder to engage with said flange and with its opposite edge reversely tapered, a cylinder having a cam or eccentric face mounted in a bearing in said holder alongside the inner edge of said cutter and adapted to bear against said inner edge, a spring for turning said cylinder to force said cam face normally against the inner edge of said cutter and a handle or lever for turning said cylinder reversely to said spring, substantially as set forth.

4. A cutter-head comprising a cutter-holder formed with a recess to receive the cutter, a cutter mounted in said recess, means for securing said cutter in position, and means for holding and adjusting said cutter longitudinally comprising a cylinder having circumferential ribs engaging with

transverse grooves or recesses in said cutter, said cylinder being formed with a screw-threaded part which is mounted in a screw-threaded nut fixed in the cutter-holder, substantially as set forth.

5 5. A cutter-head comprising a cutter-holder, a cutter secured to said holder, said cutter being formed with transverse grooves in its back and a screw mounted cylinder
10 formed with circumferential ribs adapted to engage with said grooves for holding and adjusting said cutter longitudinally, substantially as set forth.

15 6. A cutter-head comprising a cutter-holder, a cutter mounted in said holder, said cutter being formed with transverse grooves or recesses in its back, a screw mounted cylinder provided in the cutter-holder and
20 formed with circumferential ribs engaging with said grooves for holding and adjusting said cutter longitudinally, substantially as set forth.

7. A cutter for screw-cutting dies formed with cutting grooves in its face extending longitudinally thereof and with transverse 25 holding grooves in its back, substantially as set forth.

8. A cutter for screw-cutting dies formed with thread-cutting grooves in its face extending longitudinally thereof, with engag- 30 ing edges for engaging with the cutter-holder, and with transverse grooves in its back for engaging with the holding device, substantially as set forth.

In witness whereof, I, have hereunto set 35 my hand and seal at Washington, District of Columbia this 3rd day of February, A. D. nineteen hundred and ten.

ABRAHAM B. LANDIS. [L. S.]

Witnesses:

J. D. YOAKLEY,
E. W. BRADFORD.