No. 792,791. PATENTED JUNE 20, 1905.

G. R. RICH.

DIE HEAD.

APPLICATION FILED MAY 11, 1904.

2 SHEETS—SHEET 1.

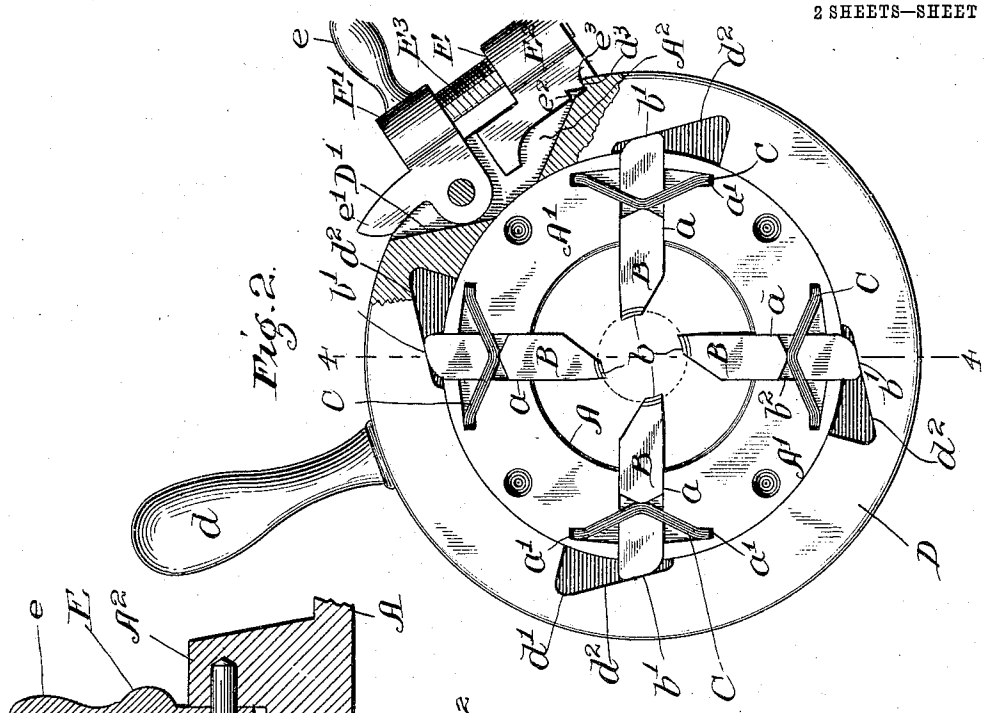


Fig. 2.

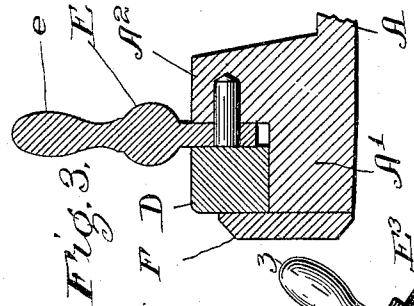


Fig. 3.

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 6.

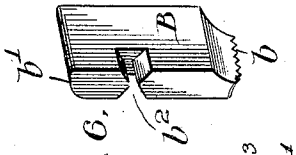


Fig. 5.

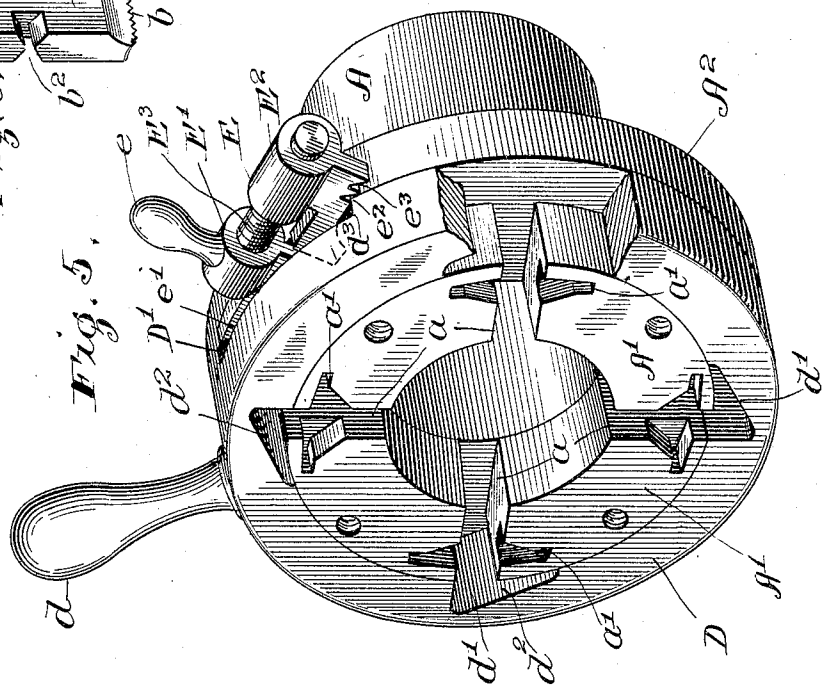
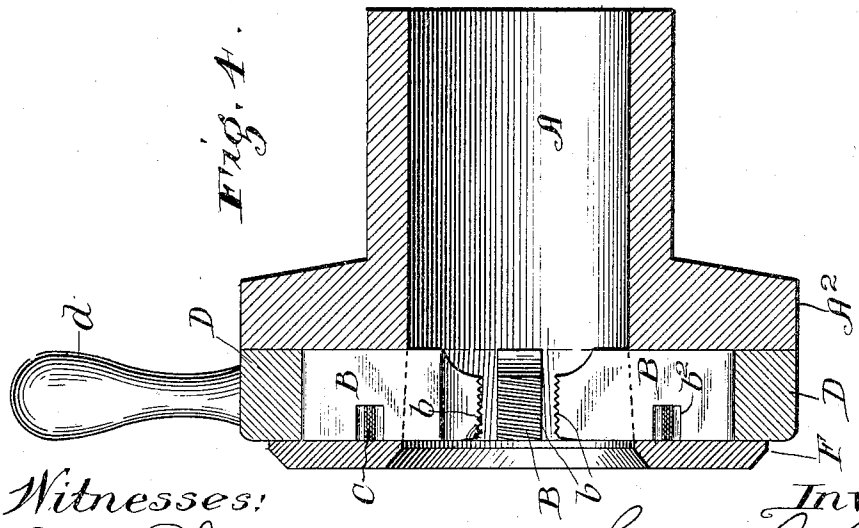


Fig. 4.



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No. 792,791. Patented June 20, 1905.

UNITED STATES PATENT OFFICE.

GEORGE R. RICH, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEO. R. RICH MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DIE-HEAD.

SPECIFICATION forming part of Letters Patent No. 792,791, dated June 20, 1905.

Application filed May 11, 1904. Serial No. 207,360.

To all whom it may concern:

Be it known that I, GEORGE R. RICH, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Die-Heads, of which the following is a specification.

My invention relates to certain new and useful improvements in die-heads; and its object is to produce a device of this class which will have certain advantages, which will appear more fully and at large in the course of this specification.

To this end my invention consists in certain novel features of construction, which are clearly illustrated in the accompanying drawings and described herein.

In the aforesaid drawings, Figure 1 is an end elevation of my improved die-head, a portion of the face-plate being broken away. Fig. 2 is a similar elevation of my improved die-head, the face-plate being removed, the parts being shown in a different position, and a certain cam-ring being broken out to illustrate parts beneath the same. Fig. 3 is a section in the line 3 3 of Fig. 1. Fig. 4 is a section in the line 4 4 of Fig. 2, the chasers being shown in elevation. Fig. 5 is a perspective view of my improved device, the face-plate, chasers, and springs being removed and the ring partly broken away; and Fig. 6 is a perspective view of one of the chasers.

Referring to the drawings, A is a hollow cylindrical neck adapted to be fixed in position in a lathe in the ordinary way. Upon the forward end of this neck is formed a flange A^2, the front face of which is cut away to form a hub A′, (see Fig. 5,) which has a number of radially-extending slots *a* across it to form guideways for the chasers B. (See Fig. 6.) Said chasers are formed with thread-cutting teeth *b* at their inner ends and wedge-shaped rear ends *b′*. The front edges of these chasers are provided with notches b^2, through which extend springs C, the ends of which rest in notches *a′* at the two sides of the radial grooves *a*. Surrounding the hub A′ is a cam-ring D, rotatable on the hub A′ and provided with a handle *d*, by which it may be moved. A face-plate F is secured to the hub A′ and secures all the parts in position. Notches *d′* are provided on the inner face of the cam-ring, the said notches having diagonal cam-faces d^2, which engage with the wedge-shaped rear ends of the chasers B. When the ring D is in the position indicated in Fig. 1, the springs C hold the chasers out from the center; but when the ring is turned to the position indicated in Fig. 2 the cam-faces d^2 of the notches *d′* force the chasers toward the center of the die-head, as illustrated.

The ring D is cut away at D′, and in the space thus formed lies a dog E, which is pivoted on the flange A^2. This dog consists of two parts E′ E^2 and an adjusting-screw E^3, which connects them. The part E′ is provided with a handle *e*, by which it can be moved, and with a cam-arm *e′*, which bears against the ring D when the dog is swung to the left as viewed in Fig. 2 and starts the ring to rotate to the left in case the springs C do not act at once. The part E^2 is provided with two teeth e^2 e^3, which are adapted to engage with a tooth d^3 on the ring D to hold the chasers up to their work. The screw E^3 furnishes a very convenient means for regulating the position of the cutting edges of the chasers. By adjusting the movable portion E^2 of the dog upon the screw the teeth e^2 e^3 are moved forward or backward, so as to vary the point of engagement of the tooth d^3 on the ring D with the teeth on the dog. The ring will consequently have more or less movement, thereby forcing the chasers nearer the center or farther away therefrom, as the case may be.

The operation of my improved device will now be apparent. The material to be operated on is mounted in the ordinary way and rotated and advanced toward the die-head. The chasers are moved toward the material to be operated on by rotating the head to the right from the position illustrated in Fig. 1 until the tooth d^3 engages with the tooth e^2 on the dog E. The work is run once through the die-head with the parts in this position and the first or rough cut is made. The dog is then swung to the left about its pivot and

the cam-arm on the dog strikes the ring and starts it back to its original position. As soon as the ring is started the force of the springs is sufficient to cause it to return and to retract the chasers. The chasers are thus thrown out of contact with the work, so that it is not necessary to run them back over the partially-formed threads. The work is then withdrawn from the die-head and again advanced, and this time the ring D is rotated until the tooth d^3 engages with the tooth e^3. This makes the final or finished cut. When this cut is completed, the dog is again swung to the left, the ring again returned to its original position, and the chasers retracted the same way as before.

My improved construction is particularly advantageous on account of its simplicity and effectiveness in operation and for the further reason that the chasers are withdrawn from the work by a comparatively simple movement, thereby obviating the necessity of running them back over the threads.

I realize that considerable variation is possible in the details of this construction without departing from the spirit of the invention; and I therefore do not intend to limit myself to the specific form herein shown and described.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with a radially-slotted hub, of chasers movable in the slots, a ring outside said hub, and rotatable with respect thereto, cam-surfaces on said ring engaging with the chasers to force them toward the center of the hub, springs tending to draw said chasers away from the center of the hub and a dog having teeth for engagement therewith constructed and arranged to hold the chasers in two different positions.

2. In a device of the class described, the combination with a radially-slotted hub, of chasers movable in the slots, a ring outside said hub, and rotatable with respect thereto, cam-surfaces on said ring engaging with the chasers to force them toward the center of the hub, springs tending to draw said chasers away from the center of the hub, a dog adapted to lock said ring in position to hold said chasers in place, and a cam-arm on the dog arranged to engage with the ring to start the same in motion when the dog is released.

In witness whereof I have signed the above application for Letters Patent, at Chicago, in the county of Cook and State of Illinois, this 20th day of April, 1904.

GEORGE R. RICH.

Witnesses:
CHAS. O. SHERVEY,
RUSSELL WILES.