

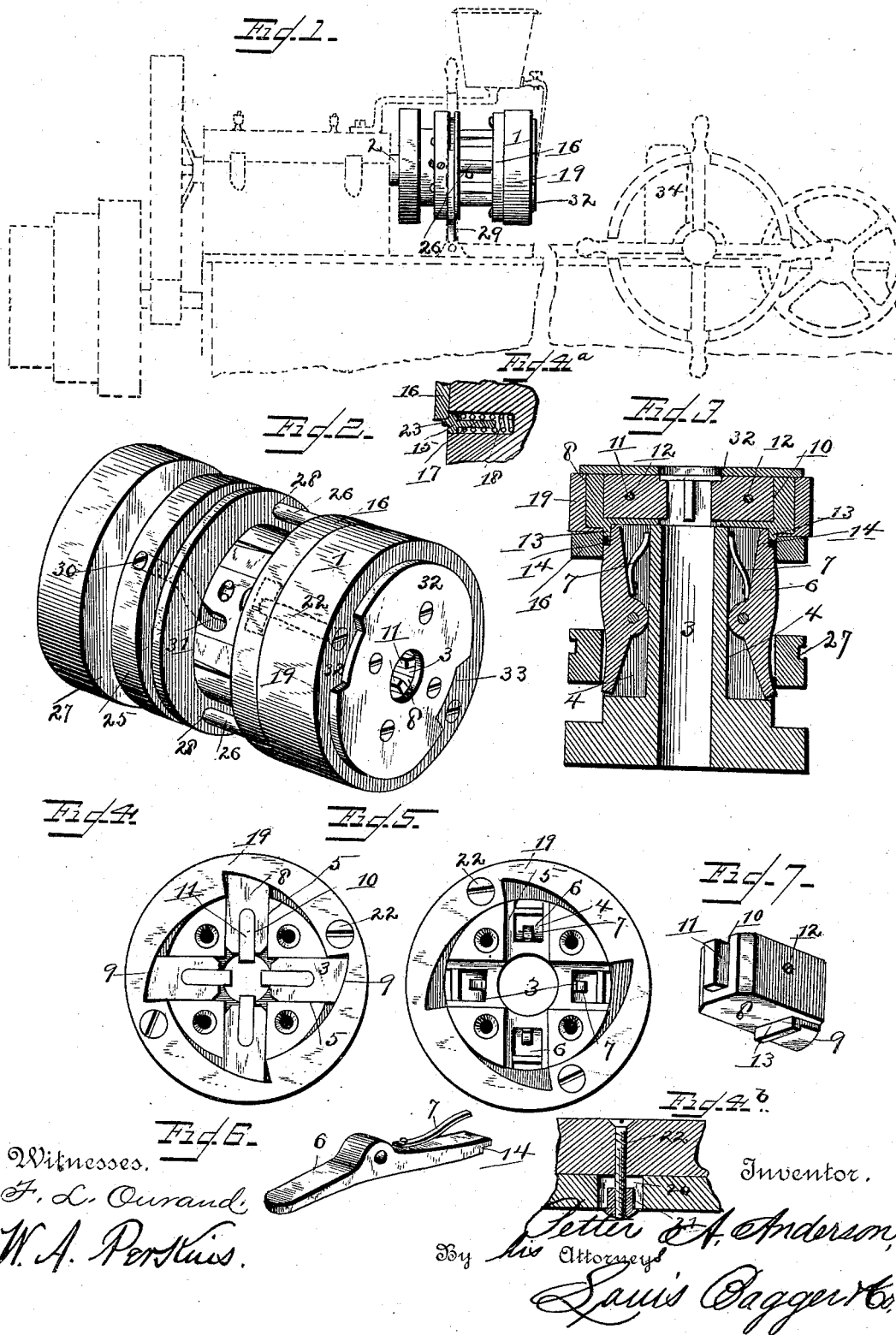
(No Model.)

P. A. ANDERSON.

SCREW CUTTING DIE.

No. 382,933.

Patented May 15, 1888.



UNITED STATES PATENT OFFICE.

PETTER AUGUST ANDERSON, OF MORRELLVILLE, PENNSYLVANIA.

SCREW-CUTTING DIE.

SPECIFICATION forming part of Letters Patent No. 382,933, dated May 15, 1888.

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To all whom it may concern:

Be it known that I, PETTER AUGUST ANDERSON, a citizen of the United States, and a resident of Morrellville, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Bolt-Cutter Heads; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of the bolt-cutter head, showing it in position, with the immediate surrounding parts shown in dotted lines. Fig. 2 is a perspective view of the head, showing the cam-ring and inner ring pushed back. Fig. 3 is a longitudinal sectional view. Fig. 4 is a front view with the front plate removed. Figs. 4^a and 4^b are sectional detail views of parts not otherwise shown. Fig. 5 is a view with the sliding jaws and front plate removed. Fig. 6 is a perspective detail view of one of the sliding jaws, and Fig. 7 is a similar view of one of the bits.

The same numerals of reference indicate the same or corresponding parts in all the figures.

My invention has relation to cutter-heads for bolt-cutting machines; and it consists in the improved construction of such a head, in which the bit-carrying jaws, which either cut the screw-threads in unthreaded bolts or smooth and turn off smooth bolts, may be adjusted to cut bolts of various diameters, and in which the said jaws may be opened to release the bolt and brought together to cut a bolt in a moment of time, as will be more fully described and specifically claimed hereinafter.

In the accompanying drawings the numeral 1 indicates the cylindrical head, which is suitably secured to the revolving shaft 2, (indicated in dotted lines in Fig. 1,) and which is formed with the axial bore 3, of a diameter larger than the largest bolt to be cut. The sides of the head are formed with four or more longitudinal recesses, 4, extending from the forward end of the head to near the rear end, and these recesses end at the forward end in

the branches of two diametrical grooves or recesses, 5, crossing each other at right angles in the forward end of the head. Levers 6 are pivoted at about their middles in the longitudinal recesses, and the rear or inner ends of these levers are preferably curved slightly outward, so as to project out of the recesses when the forward ends are tilted inward, and springs 7, secured in the bottoms of the longitudinal recesses, bear against the forward ends of the levers, forcing the said ends outward. Jaws 8, having their outer ends cut off obliquely and slightly rounded, (the said ends facing in one direction circumferentially,) slide in the branches of the crossing recesses in the face of the head, and these jaws are formed with recesses 10, in which the bits 11 are held secure by a screw, 12, through the side of each jaw. The inner edges of the jaws are formed with short lips 13, which are engaged by the correspondingly-lipped ends 14 of the levers, the lips of the levers bearing against the inner sides of the lips of the jaws.

A ring, 16, is fitted to turn upon the outer portion of the head, and is normally held from slipping in upon the head by the projecting head 15 of a bolt, 17, in the side of the head, the said bolt having a spring, 18, forcing it out, and a ring, 19, which I will term the "cam-ring," is likewise fitted to turn upon the outer end of the head outside of the inner ring, which is formed with two segmental slots, 20, into which the nuts 21 upon the inner ends of two screws, 22, inserted from the forward side through the cam-ring, slide, the said slots and screw-bolts serving to adjust the relative position of the cam-ring and the inner ring.

The spring-bolt, which prevents the inner ring from slipping back, is formed with a transverse lip, 23, upon its face, against which lip the inner edge of the ring may bear, while the inner side of the ring, which side slides upon the side of the head, may bear also against the face of the bolt-head, keeping the bolt in its place, as clearly seen in Fig. 3 of the drawings.

The inner edge or side of the cam-ring is formed with a number of ratchet-recesses or cam-recesses 24, corresponding to and registering with the oblique ends of the sliding jaws, and it will be seen that when the cam-

ring is revolved upon the head the jaws will be either forced inward, if the ring is revolved to bring the narrowing ends of the recesses to bear against the jaws, or the jaws will be allowed to be spread out by the springs and the levers when the ring is reversed.

The inner ring is provided with two rearwardly-extending guide-rods, 26, and a ring, 25, having a peripheral groove, 27, slides upon the head, and has two perforations, 28, by means of which the ring 25 slides upon the rods. The throw of this ring is governed by the lever 29, (shown in dotted lines in Fig. 1,) and the ring is provided with a screw, 30, inserted through it, with its inner end in an oblique groove, 31, in the side of the head, so that the ring will be turned upon the head whenever slid upon the same.

A face-plate, 32, is secured upon the forward end of the head, covering the transverse recesses in the same and keeping the sliding jaws in place, and the edge of this plate is cut away at two places, as shown at 33, for the purpose of giving free access to the adjusting screws or bolts 22 without necessitating the removal of the plate.

In practice the bolt is held in a suitable vise, 34, (shown in dotted lines in Fig. 1,) and is fed into the head by the said vise being carried toward the head, and when the bolt is brought to the forward opening in the head, which is continually revolved, the lever sliding the grooved ring is tilted, throwing the ring forward and forcing the jaws together on account of the cam-ring being partly revolved, and the bolt is now cut either smooth or screw-threaded, according to the character of the inner ends of the bits, the relative proximity of the bits, when brought into their nearest position, being adjusted by the nutted bolts through the cam-ring and the inner ring, as the cam-ring may be adjusted by these screws and nuts to have its recesses at various relative positions to the oblique ends of the jaws, as will be clearly understood by referring to Fig. 2, which shows the slots in the inner ring in dotted lines. When the bolt is cut, it is removed, after first having opened the jaws by sliding the grooved ring back, the ring turning the inner ring and the cam-ring, so that the forward or outer ends of the levers may be forced out by the springs, drawing the jaws with them, and as the inner ends of the levers are slightly curved, so as to project beyond the surface of the head when drawn together at the outer ends, the grooved ring will assist in spreading the outer ends of the levers, and through them the jaws, by sliding over the projecting rear ends of the levers, forcing them back into their recesses, thus assisting the action of the springs.

The bits in the jaws may be removed and substituted by other bits either when worn out or when it is desired to change the screw-thread of the bolts cut or to change from smooth bolts to threaded bolts, or vice versa.

When it is desired to have access to the jaws

and their bits for any purpose whatever, the front plate is removed, when free access to the jaws may be had, or when it is merely desired to have access to the jaws without entering the recesses for the levers and without having access to their springs the spring-bolt in the side of the head may be forced into its bore, so as to bring the lip out of the way of the inner ring, when the inner ring and the cam-ring may be slid back, so as to leave the oblique ends of the jaws free, admitting of their being removed from their cross grooves or recesses.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a bolt-cutter head, the combination of the head having jaws sliding in radiating recesses in the forward or outer end and confined by a front plate, a ring upon the outer end of the head having cams for operating the jaws and sliding upon the head, and a bolt in a radial recess in the side of the head at the inner end or edge of the ring, having a spring forcing it outward, and having a transverse lip upon the outer end of its head bearing against the inner or rear edge of the ring, the inner concave face of the ring bearing against the face of the head of the bolt at the side of the lip, as shown, and for the purpose specified.

2. In a bolt-cutter head, the combination of the cylindrical head formed with the oblique groove in its side and with radiating recesses in its outer or forward end, jaws sliding in the recesses and having springs forcing them out and obliquely cut-off outer ends, a cam-ring upon the outer end of the head having eccentric or ratchet-shaped recesses in its inner face corresponding to and registering with the oblique ends of the jaws, a ring upon the head inside of the cam-ring having segmental slots and rearwardly-projecting guide-rods, screw-threaded bolts passed through the cam-ring into nuts sliding in the segmental slots of the inner ring, and a ring sliding upon the head, with perforations sliding upon the guide-rods, and having an inwardly-projecting stud engaging and sliding in the oblique guide-groove, as shown, and for the purpose specified.

3. In a bolt-cutter head, the combination of the cylindrical head having the axial perforation and the radiating grooves or recesses in the forward or outer end, and provided with the longitudinal grooves in the sides merging into the radiating recesses and with the oblique groove in the side, levers having slightly outwardly-curved rear ends and pivoted in the longitudinal grooves or recesses, and provided with springs forcing their outer ends outward, jaws having lips and suitable removable bits and sliding in the radiating recesses, said lips engaging the outer ends of the levers, a front plate removably secured over the forward or outer end of the head inclosing the jaws, a cam-ring having eccentric or ratchet-shaped recesses in its inner face bearing against the oblique outer ends of the jaws, an inner ring having rearwardly-extending rods, and having

the cam-ring circumferentially adjustable upon its outer face, and a ring sliding upon the head, and having a stud sliding in the oblique groove in the same and having perforations for the guide-rods, as shown, and for the purpose specified.

5 In testimony that I claim the foregoing as my

own I have hereunto affixed my signature in presence of two witnesses.

PETTER AUGUST ANDERSON.

Witnesses:

JACOB A. GLASS,
I. E. ROBERTS.