(No Model.)

J. A. HAMER.

SCREW CUTTING MACHINE.

No. 483,112. Patented Sept. 20, 1892.

Fig. 1.

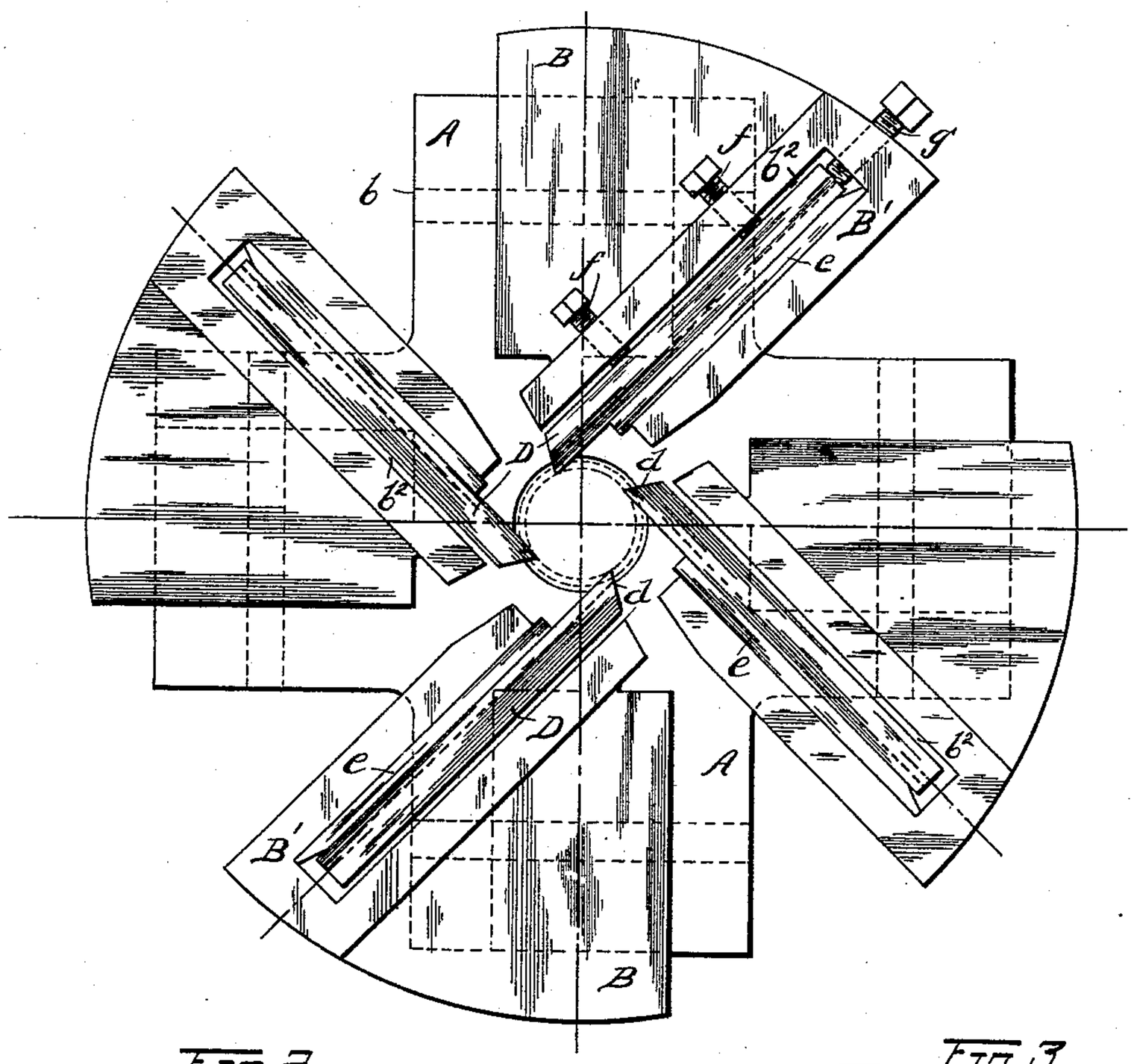


Fig. 2.

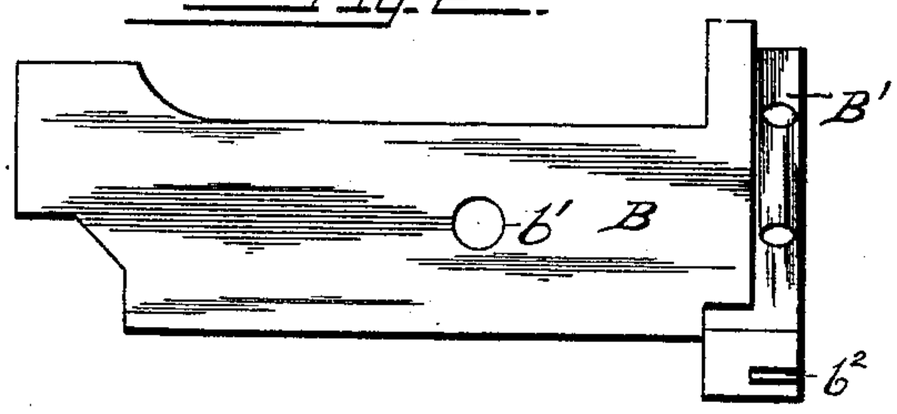
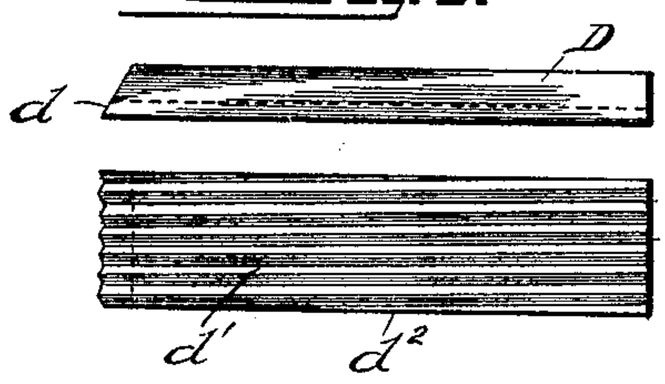


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES A. HAMER, OF READING, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CHARLES D. GILHAM, OF SAME PLACE.

SCREW-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 483,112, dated September 20, 1892.

Application filed December 19, 1891. Serial No. 415,618. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HAMER, a citizen of the United States, residing at Reading, in the county of Berks, State of Pennsylvania, have invented certain Improvements in Screw-Cutting Machines, of which the following is a specification.

This invention relates to improvements in screw-cutting heads having levers pivoted thereto which carry the thread-cutters. These levers are commonly arranged to swing in radial planes and to carry cutters of the ordinary form—that is, with the thread cut upon one end of the cutter. Owing to the difficulty with which this form of cutter is sharpened when worn a different form having longitudinal grooves upon one face has been used to a limited extent and when properly set has done good work and may be sharpened when required by merely grinding the end.

The main objects of my invention are, first, to enable these longitudinally-grooved cutters to be economically applied to cutter-heads adapted originally for the ordinary form referred to, and, second, to so arrange the longitudinally-grooved cutters that, though their grooved faces are held substantially tangent to the blank, the cutting end will be withdrawn from the work substantially radially, thereby necessitating a minimum movement and insuring prompt action and close and neat work.

A further object is to so form the grooves of the cutter as to avoid all difficulty in properly setting it.

The invention is fully described in connection with the accompanying drawings and is specifically pointed out in the claim.

Figure 1 is a face view of a screw-cutting head having my invention applied thereto. Fig. 2 is a separate view of one of the cutter-holders and operating-lever detached from the head. Fig. 3 shows the cutting-tool separate.

The levers B may be pivoted at *b* to a cutter-head A of any desired construction, so as to be operated by a conical sleeve arranged to slide upon the machine-spindle or by other suitable means for the purpose of opening and closing the cutters, which are carried by holders at the forward ends of the levers. The cutters D are flat plates having longitudinal grooves *d'* formed upon one face, which grooves correspond with the form and size of the thread which it is desired to cut. Instead of having these grooves run parallel with the sides of the cutters, they are at an angle thereto varying with the pitch of the thread for which the cutter is intended, so that when the cutter is placed in the slot b^2 of the holder B' the grooves will be properly inclined to the cutting-edge *d* without requiring any adjustment whatever. The holders B', forming the heads of the pivoted levers B, as represented, are arranged to bring the line of the slots b^2 at about an angle of forty-five degrees to the plane in which the lever B, by which it is carried, swings. The cutters are adjustably secured in said slots by means of set-screws *f* and *g*, the latter of which serve to regulate the position of the cutting-edge *d* of the tools longitudinally, while the former serve to clamp the same. Different thicknesses of liners *e* are provided for cutters adapted to cut different numbers of threads to the inch, thus enabling them to be readily set for correspondingly-different diameters of bolts, slightly-varying diameters with the same thread being secured by merely adjusting the set-screws *g*. The cutters may be quickly set to cut any desired thread by employing standard samples, which are secured to the head and into the threads of which the cutters are set.

The dotted circles at the center of the head represent the diameter of a thread adapted to be cut by the cutters when arranged as represented in Fig. 1 of the drawings, though the position of the cutting-edges *d* may be somewhat changed without interfering with their working satisfactorily. It will be noticed that, although the cutter is arranged approximately tangentially to the blank operated upon, the cutting-edges *d* are withdrawn radially by the operation of the pivoted levers B, which swing in radial planes, and that they are thus lifted clear of the blank with much less movement than if withdrawn in the same plane that the cutters are arranged. Moreover, by this means these lon-

gitudinally-grooved cutters may be readily adapted to old forms of heads having radially-swinging levers, as described.

Heretofore the use of cutters of the form described has involved considerable difficulty, owing to the necessity of placing the grooves at an angle suited to the pitch of the thread; but this I have entirely overcome and have at the same time secured perfect accuracy by forming the cutters with the grooves at the proper angle, as shown.

Having thus described my invention, I do not limit myself to the exact construction indicated; but

What I claim is—

In a die stock or head, the combination, with the pivoted cutter-levers arranged to swing in radial planes, of the longitudinally-grooved cutters fixed to said levers with their grooved faces at an angle to said radial planes, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. HAMER.

Witnesses.
ED. A. KELLY,
HENRY B. HINTZ.