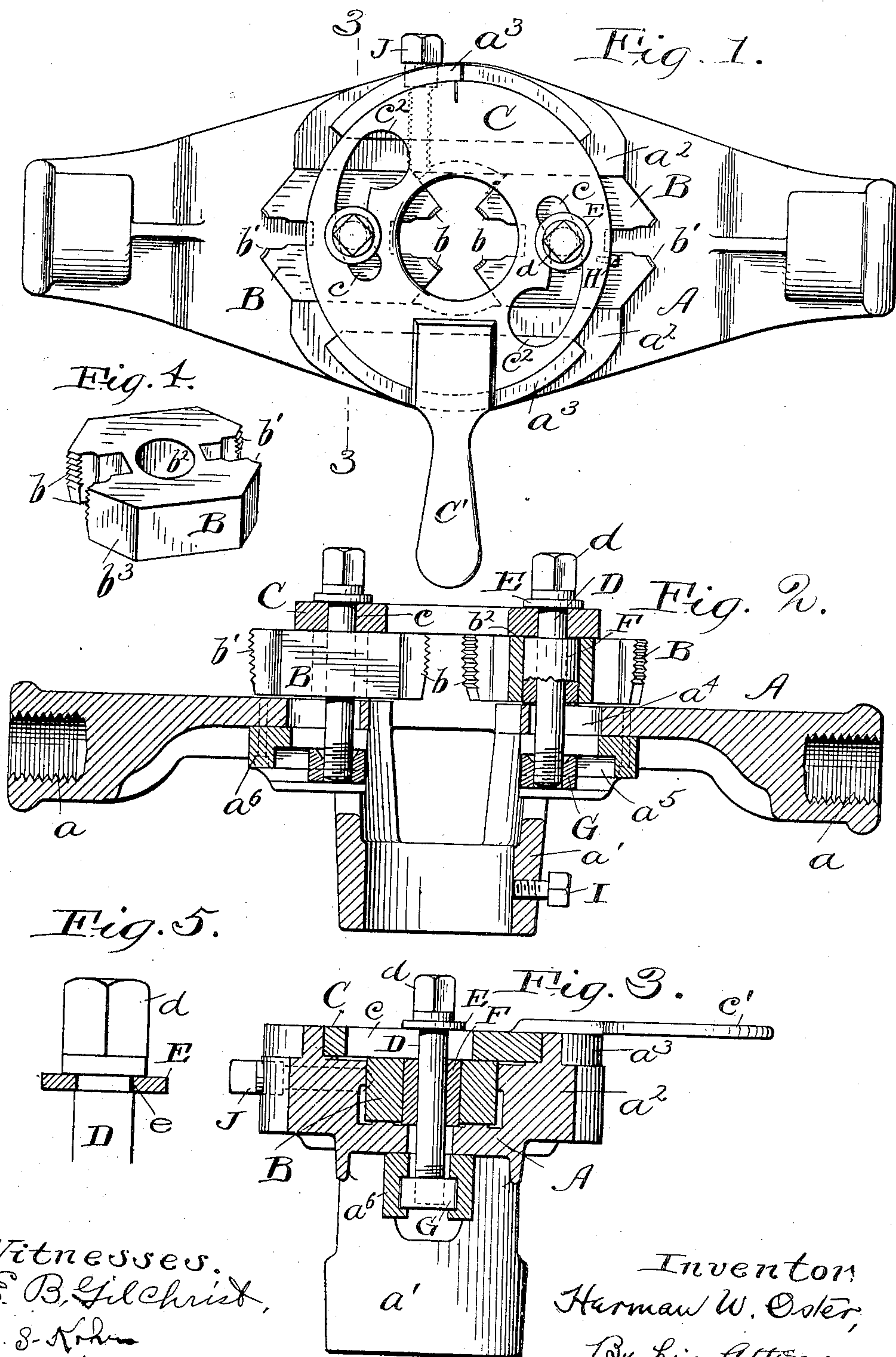


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PATENTED JULY 31, 1906.

H. W. OSTER.
DIE STOCK.

APPLICATION FILED APR. 17, 1905.



Witnesses.
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UNITED STATES PATENT OFFICE.

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DIE-STOCK.

No. 827,656.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERMAN W. OSTER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Die-Stocks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

10 The object of this invention is to provide a simple and efficient die-stock adapted to cut at will either of two sizes of thread and adjustable to open the dies and to vary from the standard.

15 Several features increasing the efficiency of the tool are comprised in my invention, which may be best summarized as consisting of the combination of parts hereinafter described, and definitely pointed out in the claims.

20 In the drawings, Figure 1 is a plan of my die-stock. Fig. 2 is a longitudinal section through the same, showing, however, the left-hand die in side elevation. Fig. 3 is a cross-section on the line 3 3 of Fig. 1. Fig. 4 is a perspective view of one of the dies. Fig. 5 is an enlarged view of one of the bolts with its washer.

Referring to the parts by letters, A represents the frame of the stock, which carries at 30 opposite ends screw-threaded recesses a , by which handles are secured to the stock to turn it. Extending rigidly from the plate which constitutes the main portion of the frame is a tubular member a' , which forms a 35 guide for the stock. The bore of this tubular member may be reduced by an inserted bushing held by a set-screw I or in any other manner, as is well understood.

40 Formed on the upper side of the plate A are a pair of bosses a^2 , providing a parallel-sided recess between them, which is occupied by the dies B. Extending upward from each boss a^2 is an arc-shaped flange a^3 , and between these flanges rests a circular cam-plate C. The two dies are thus slidably 45 guided between the bosses a^2 and between the frame-plate and the cam-plate. The plate C receives its cam characteristic by reason of a pair of eccentrically-placed slots c . Passing through these slots and through the dies 50 are a pair of bolts D. The bolts extend through slots a^4 in the frame-plate and screw into nuts G, which are slidable longitudinally in grooves a^5 , formed in blocks a^6 , which are

rigid with the frame A on its end side. The 55 shanks of the bolts D occupying the eccentrically-placed slots c , it follows that if the cam-plate be turned on its axis these bolts will be brought toward each other or separated, and the dies will be accordingly 60 caused to approach or recede. A handle C' forms convenient means for thus turning the cam-plate.

To double the capacity of the tool, the dies are formed with cutting-teeth at each end, as 65 shown at b and b' , and thus by reversing them the stock is adapted to cut two sizes of threads. To allow their reversal, it is necessary to remove the cam-plate, and to enable this to be done conveniently I form at the 70 end of each slot c an enlargement c^2 of the size sufficient to allow the cam-plate to be removed over the washers E on the bolts D. The opening b^2 in the die surrounding the bolt is at least as large as this washer, the space 75 between the bolt and such opening being taken up by the bushing F. Thus after the cam-plate is removed the dies may be easily removed over the washers E and may then be turned around to present their other ends 80 to each other.

In use when the cam-plate has adjusted the dies to proper position a wrench is applied to the angular heads d of the bolts D, screwing them into the nuts G. This clamps 85 the cam-plate against turning and holds the dies in position for cutting.

To prevent the cam-plate being worn adjacent to the slot by reason of the continual tightening and loosening of the bolts, I provide the loose washers E; but in order that 90 these washers may not drop down on the shank of the bolts when the cam-plate is removed I secure them against longitudinal movement on the bolt. This I accomplish 95 very cheaply and easily by reducing the shank of the bolt immediately beneath its head and forcing a snug washer over the shank of the bolt. I can force along the bolt-shank a washer fitted so tight that it will not 100 drop down when released by the cam-plate, while by making the shank reduced within the washer the bolt may conveniently be turned independent of the washer. This is illustrated by Fig. 5. The cam-plate bears 105 against the washer at a distance farther from the axis than the bearing of the head upon the washer, whereby when the bolt is tight-

ened the head rotates upon the washer in preference to the washer rotating upon the cam-plate.

In order to form a convenient stop, so that the cam-plate may be at once brought to position with the washers alining with the enlargements c^2 , I secure to the edge of the cam-plate a projecting screw H, which is adapted to abut against the end of one of the flanges in this extreme position of the cam-plate.

To limit the inward movement of the dies, I provide a bolt J, which screws laterally through one of the bosses a^2 and has a conical point bearing against one of the beveled ends b^3 of one of the dies. This bolt may be turned in or out as desired, adjusting the possible inward movement of the corresponding die, which, limiting the movement of the cam-plate, operates to limit correspondingly the inward position of the other die. This stop allows the dies to be at once set to size after they have been forced apart by the cam-plate.

Having thus described my invention, I claim—

1. In a die-stock, the combination of a frame having a parallel-sided recess and an opening through the frame at the base of the recess, a die slidably occupying said recess and having an opening through it, a cam-plate surmounting the die and extending across the recess and having an eccentrically-placed slot in it, a bolt passing through such slot through the die and through the opening in the frame, and a nut screwing onto said bolt.

2. In a die-stock, in combination, a frame, a pair of dies slidably mounted thereon, and having cutting-teeth on their opposite ends, a cam-plate extending across said dies and having eccentrically-placed slots through it, clamping-bolts passing through the slots and movable with the dies, said slots having enlarged extensions allowing the cam-plate to be removed over the heads of the bolts, whereby the dies may be raised and reversed.

3. In a die-stock, in combination, a frame, a pair of dies, slidably mounted thereon, a cam-plate extending across said dies and

having eccentric slots through it, clamping-bolts passing through the slots and dies, and slidable in the frame and adapted to bear against the frame and the cam-plate, said slots having enlarged extensions allowing the cam-plate to be removed over the heads of the bolts, the openings in the dies which said bolts occupy being large enough to allow the dies to be removed over the heads of the bolts, and there being bushings in such openings around the bolts.

4. In a die-stock, in combination, a frame, a pair of dies guided therein, bolts occupying openings in said dies, said bolts extending below the dies through slots in the frame into nuts which are slidably guided by the frame, a cam-plate above the dies, said bolts passing through the cam-plate and having shoulders thereabove, whereby the bolts form an operating connection between the dies and cam-plate and also serve to clamp the dies and cam-plate to the frame.

5. In a die-stock, in combination, a frame having a parallel-sided recess, dies occupying said recess, a cam-plate extending across such dies, a pair of arcual flanges carried by the frame and engaging the circular edge of the cam-plate, and a connection between the cam-plate and dies.

6. In a die-stock, the combination of a frame, an adjustable die having cutting-teeth and a beveled end adjacent thereto and a set-screw adapted to engage such beveled end to adjust the die.

7. In a die-stock, a combination of dies and a cam-plate with a clamping-bolt for the cam-plate, said bolt having a washer loosely surrounding its shank above a shoulder thereon whereby the washer is permanently retained adjacent to the head of the bolt and the cam-plate having an opening at one end of its slot large enough to allow it to pass over said washer.

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

HERMAN W. OSTER.

Witnesses:

ALBERT H. BATES,
J. M. WOODWARD.