H. W. OSTER.

DIE STOCK.

APPLICATION FILED APR. 22, 1912.

1,044,810.

Patented Nov. 19, 1912.

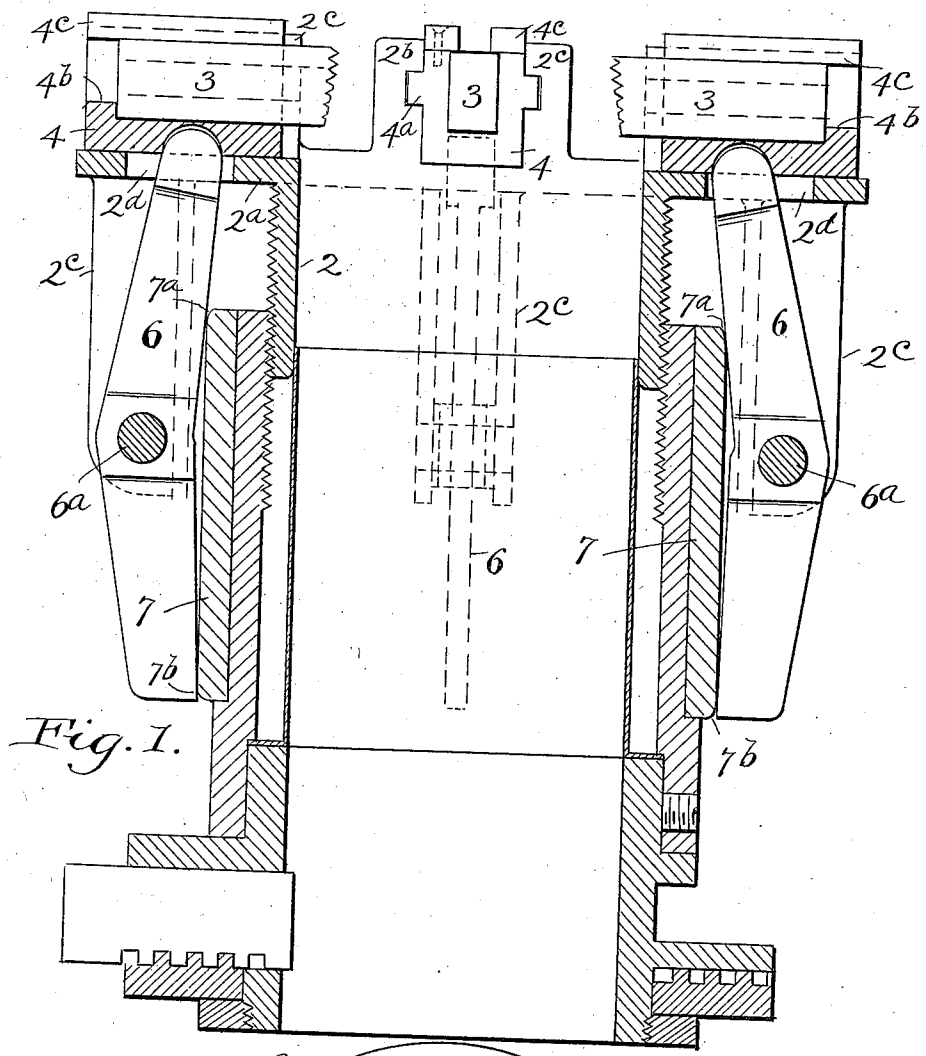

Fig. 1.

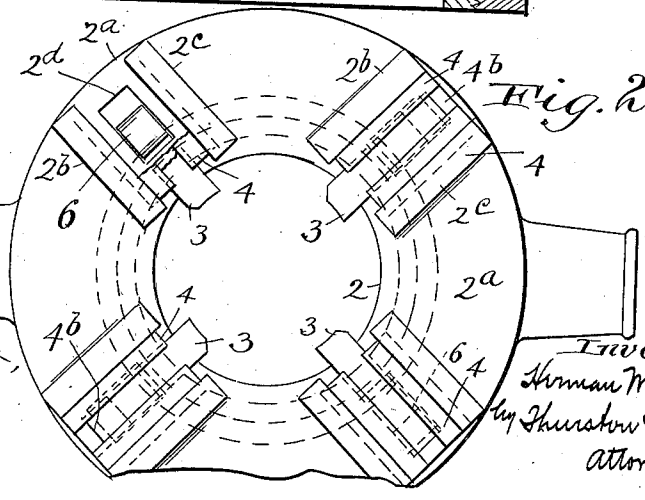

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

HERMAN W. OSTER, OF CLEVELAND, OHIO, ASSIGNOR TO THE OSTER MANUFACTURING COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DIE-STOCK.

1,044,810. Specification of Letters Patent. Patented Nov. 19, 1912.

Application filed April 22, 1912. Serial No. 692,294.

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.

The object of this invention is to produce a cheap, durable and efficient receding die stock.

The novel characteristic of the invention resides in the employment, as the means for moving and controlling the movement of the dies, of levers which are pivoted to the die carrier and engage directly or indirectly with the dies, and also engage, on opposite sides of their pivots, with two annular shoulders carried by the work holder, substantially as shown in the drawing, and hereinafter described and pointed out in the appended claim.

In the drawing, Figure 1 is a central longitudinal sectional view of a die stock in which the invention is embodied; and Fig. 2 is a front end view thereof.

The work holder 1 is of familiar construction, being a built up member of tubular form, so that the pipe or other cylindrical piece of work to be threaded may be passed through it, and being provided with suitable means whereby it may be clamped to said work. The die carrier 2 is likewise tubular, and is capable of moving rotatively and longitudinally relative to the work holder. In the construction shown the die carrier has its rear end externally threaded so that it may be screwed into the internally threaded work holder, wherefore as the die carrier is turned relatively to the work holder, it will move longitudinally relative thereto at such a rate as is determined by the pitch of the engaging threads upon these two parts.

At the front end of the die carrier is an outwardly extended flange 2^a which is provided with a plurality of pairs of forwardly projecting lugs 2^b, 2^c between which are guideways for the die cases 4, which lie between them. These die cases have ribs 4^a on their sides which go into grooves in the inner faces of the lugs. The dies 3 are fixedly held in these die cases. The rear end of each abuts a shoulder 4^b on the associated die case; and the die is held down by gibs 4^c which are fixed to the top edges of the die case so as to overhang and engage the die therein.

Fixed to the flange 2^a and projecting rearward therefrom are a plurality of arms 2^e. Levers 6 are pivoted to said arms by means of pivots 6^a. From the pivotal point thereof the two arms of each lever are extended at a slight inclination to each other and toward the axis of the tool. The upper end of each lever passes through a slot 2^d in the flange 2^a and into a recess in the rear face of the associated die case,—this recess and engaging end of the lever being curved to fit one another under all conditions of use.

On the work holder, and they may be fixed thereto or rotatably thereon, but must not be longitudinally movable thereon, are two annular bearing shoulders 7^a, 7^b. These may be, and preferably are, the upper and lower outer edges of a ring 7. Now the arms of levers 6 are so disposed with respect to each other and these bearing shoulders, that the upper arm will always engage the shoulders 7^a and the lower arm will always engage the shoulder 7^b, whatever may be the position of the die carrier relative to the work holder. But as the die carrier is screwed into the work holder, the upper inclined arm of the lever 6 moving in contact with the shoulder 7^a will cause said lever to be rocked, moving said front arm away from the axis of the tool, and this will, of course, cause a corresponding movement of the die case and die carried thereby. At the same time the rear arm of the lever 6 will always engage with the shoulders 7^b, but, as these two parts move longitudinally relative to each other, and since the rear end of the lever is inclined as shown, said rear end of the lever will be permitted to swing toward the axis of the tool. In other words the shoulder 7^b, by engagement with the rear lever arm will serve to limit such receding movement of the dies and die cases as is produced by the out-thrust of the dies upon the work. Practical conditions, however, arise in which it is not safe to rely upon the out-thrust of the work to produce the required outward or receding movement of the dies. The shoulder 7^a, however, by its engagement with the front arm of lever 6 compels the dies to move, and therefore an absolutely regular and controlled movement of the dies is produced under all conditions. Moreover, when the die

carrier is screwed out of the work holder toward the normal relative starting position the engagement of these two shoulders 7^a and 7^b with the two arms of the lever will compel the dies to travel inward and to assume eventually the proper position which they should occupy to begin to start to cut a thread. In other words one of these shoulders compels the required movement of the dies, and the other prevents excessive movement.

Having described my invention, I claim:

In a die stock, the combination of a work holder, a die carrier rotatable and movable longitudinally relative to said work holder, radially movable dies carried by the die carrier, arms fixed to the die carrier and extending from the front end thereof rearward alongside of the work holder, levers which are pivoted to said arms, each lever being extended on both sides of its pivot at a small angle toward the axis of the die carrier, and two shoulders on the work holder which respectively engage the inner faces of both lever arms of each lever, and means transmitting motion from the front ends of said levers to the dies.

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

HERMAN W. OSTER.

Witnesses:
H. R. SULLIVAN,
E. L. THURSTON.