

No. 819,868.

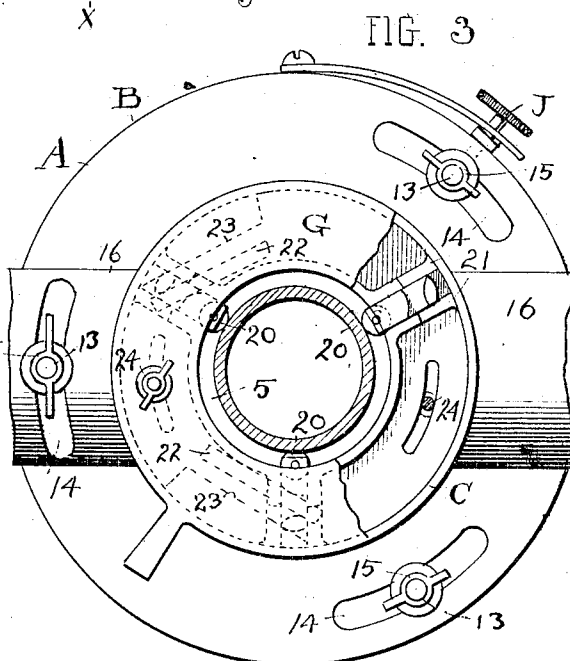
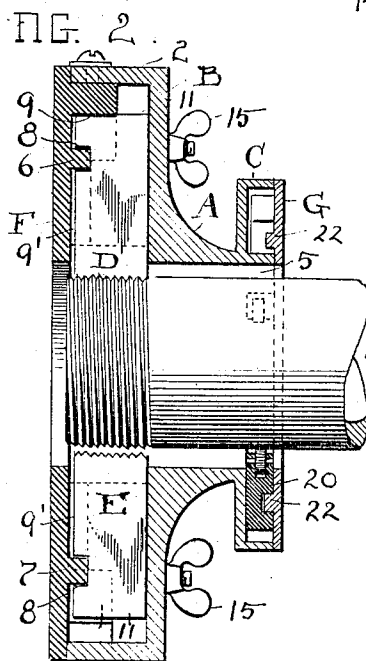
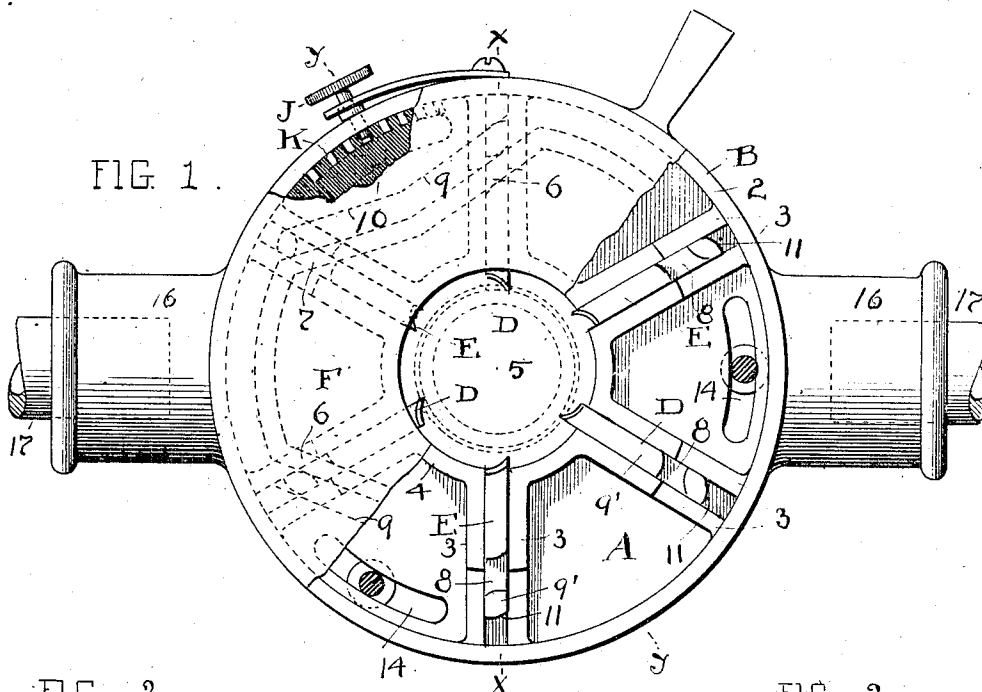
PATENTED MAY 8, 1906.

F. B. DOWNS.

DIE STOCK.

APPLICATION FILED JAN. 26, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 4.

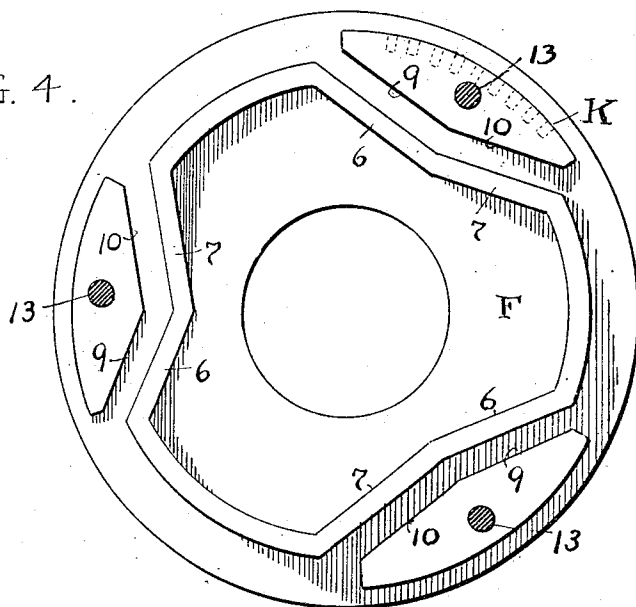
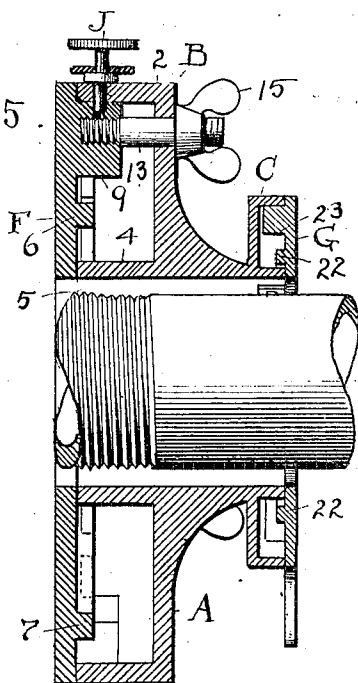


FIG. 5.



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# UNITED STATES PATENT OFFICE.

FRED B. DOWNS, OF WARREN, OHIO.

## DIE-STOCK.

No. 819,868.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed January 26, 1905. Serial No. 242,731.

*To all whom it may concern:*

Be it known that I, FRED B. DOWNS, a citizen of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Die-Stocks; and I do 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.

My invention relates to improvements in die-stocks; and the improvement consists in the construction and combination of parts substantially as shown and described, and more particularly pointed out in the claims.

My object is to provide a die-stock to cut either right or left hand threads by a simple adjustment of the parts and also to provide an adjustable supporting bushing or bearing for engaging the article being threaded.

I am aware that various devices have been made wherein the dies are adjustable and adapted to be set by a cam-plate; but to the best of my knowledge and belief my construction providing for adjustment of two sets of dies by a single cam-plate is novel with me.

In the accompanying drawings, Figure 1 is a face view of my improved die-stock with the cam-plate partly broken away to disclose the inner construction. Fig. 2 is a cross-section on line *x x*, Fig. 1, with a pipe in position and threaded. Fig. 3 is a face view of the opposite side of the die-stock from that seen in Fig. 1 with the cam-plate for the bushing or bearing members partly broken away. Fig. 4 is an inner face view of the die-operating cam-plate; and Fig. 5 is a cross-section of the die-stock on line *y y*, Fig. 1.

The body or casing A of my improved die-stock has two oppositely-disposed recessed portions or heads B and C, respectively, of varying diameter, the larger of the two serving as a die-support and the smaller one as a bushing or bearing support to hold the die-stock centrally to its work as said stock is rotated. Portion B has an outer circular flange 2, with radially-disposed walls 3, arranged in pairs and extending therefrom to the inner annular flange 4, forming the wall for central opening 5 of body A. In the present instance I employ six threading-dies adapted to slide between radial walls 3, and said dies are divided into two sets of three dies each, D and E, respectively, one set of which is adapted to cut right-hand threads

and the other set left-hand threads. It is obvious that only one set of dies can be used at the same time. Therefore one set of dies is retired within casing A while the other set is at work.

The means for sliding the respective dies back and forth and for holding them rigidly in working position comprise the cam-plate F, rotatably supported upon the outer faces of body portion B, and said plate has a series of ribs 6 and 7, respectively, adapted to engage the individual dies of each set D and E, respectively. Ribs 6 and 7 are arranged at an angle to each other and form more or less of an obtuse angle, and said ribs are each adapted to engage in the groove or recess in the upper exposed edge of each die. Said ribs are mainly relied upon to withdraw each die from the work and to retire the same within casing A. Owing to the strain and pressure upon the dies when at work, it is essential that a firm backing be provided for each die, and therefore I provide inclined shoulders 9 and 10 for the respective dies, which shoulders and the outer rounded ends 11 of each die engage to force said dies inward and to positively hold them against a return movement unless plate F is rotated. Said shoulders are inclined on parallel lines with the ribs for the dies, and as both are tangentially arranged upon plate F it will be seen that as said plate is rotated one set of dies is moved inward and the other set of dies is moved outward, this occurring by reason of the oppositely-inclined shoulders and ribs as above described. Plate F is provided with bolts 13, which project through slots 14 in body A and has thumb-nuts 15 to secure the plate in place after it has once been set. Side bosses 16 are provided for body A, into which the usual pipe-arms 17 are screwed and wherewith the stock is rotated as usual.

An equivalent construction to that shown for operating the dies and body portion B is further provided within body portion C for radially-disposed bushing members 20, having rollers at their inner ends adapted to bear at equal points from the center upon the pipe being threaded, and thereby furnishing a central guide and support for body A as it is rotated about the pipe. Only three members 20 are provided in this instance, and said members are each adapted to slide in channels between radial ribs 21 within portion C. A plate G, similar to plate F, is used to carry

the members in and out; but said plate has its tangentially-disposed ribs 22 and shoulder 23 all arranged at the same angle in respect to each member 20. Plate G also has means, such as bolts and thumb-nuts 24, to secure the plate against movement after it has been rotated to fix the members 20 in any position.

In order that definite degrees of rotation for plate F and a predetermined movement of the dies for setting them to thread standard sizes of pipes may be obtained, I provide a spring and pin-latch J, mounted upon flange 2 of body A, and which is adapted to enter any one of several openings K in the periphery of lug 15 on plate F.

What I claim is—

1. In a die-stock, a casing and separate sets of radially-movable right and left threading dies therein, a single rotatable member engaged with all the dies and constructed to move said separate sets of dies in opposite

directions when said member is rotated in either direction.

2. In a die-stock, a casing and separate sets of radially-movable dies therein, a rotatable plate having oppositely-inclined ribs and shoulders adapted to move the respective sets of dies in opposite directions, and means on said casing adapted to set said plate for predetermined degrees of rotation in either direction.

3. In a die-stock, the casing and radially-movable dies mounted therein, a rotatable plate having oppositely-inclined engaging portions for separate dies adapted to move the same in opposite directions, and means to lock said plate upon said casing.

In testimony whereof I sign this specification in the presence of two witnesses.

FRED B. DOWNS

Witnesses:

C. A. SELL,  
R. B. MOSER.