(No Model.)

2 Sheets—Sheet 1.

J. C. TAFT.

MACHINE FOR SWAGING DRILL BLANKS.

No. 431,925. Patented July 8, 1890.

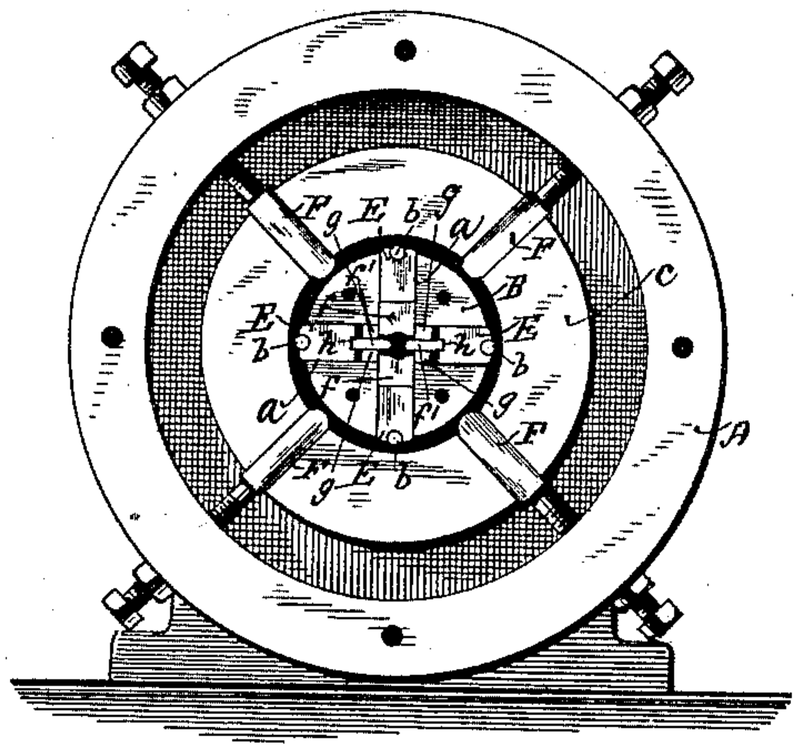

Fig. 1.

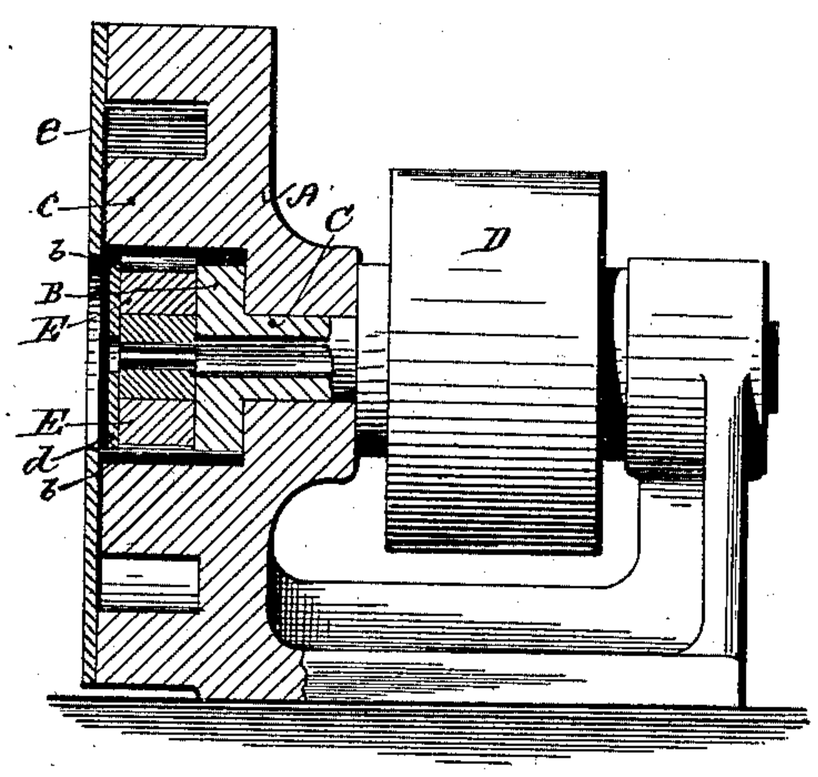

Fig. 2.

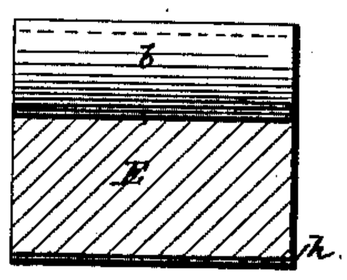

Fig. 3

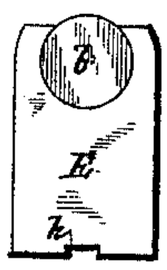

Fig. 4.

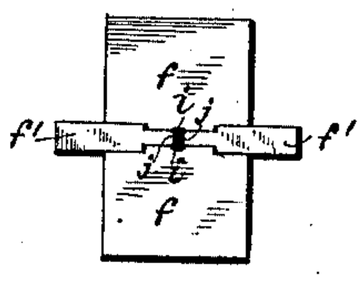

Fig. 5.

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(No Model.) 2 Sheets—Sheet 2.

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MACHINE FOR SWAGING DRILL BLANKS.

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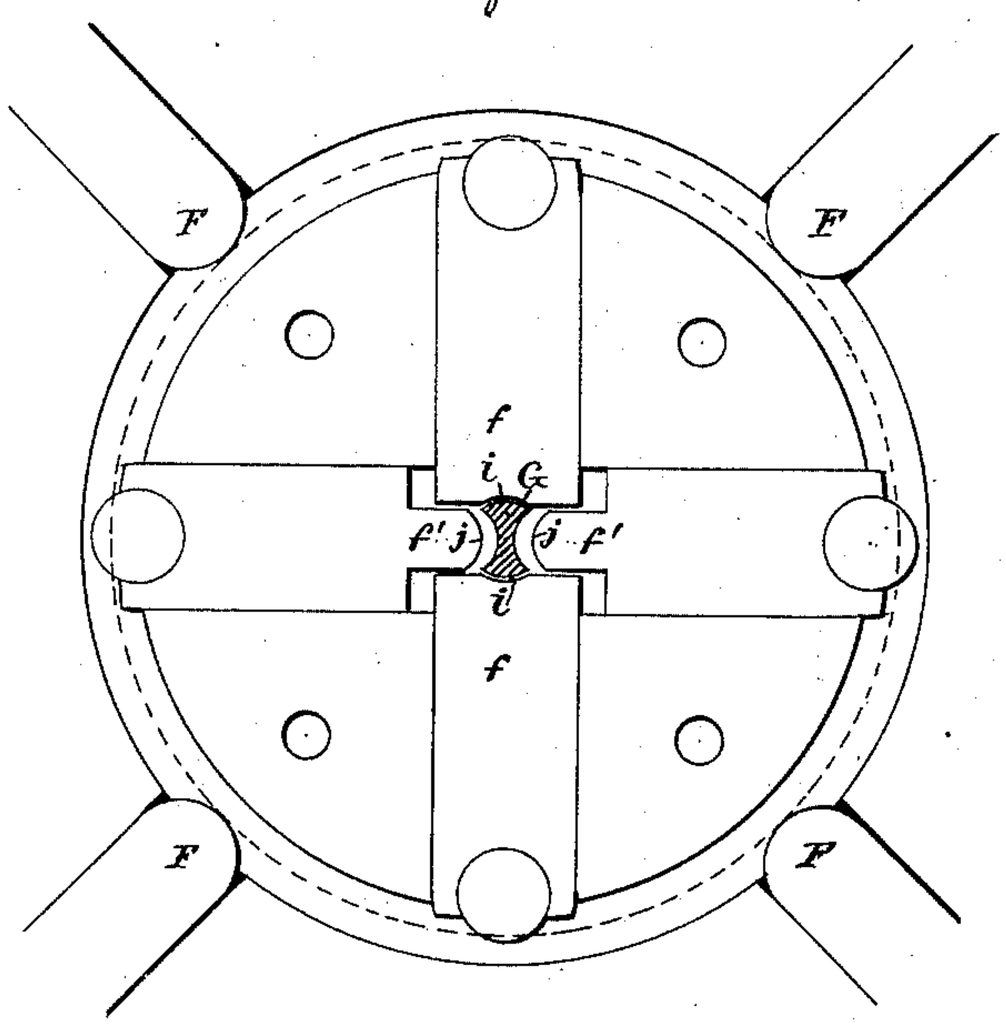
Fig. 6.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR SWAGING DRILL-BLANKS.

SPECIFICATION forming part of Letters Patent No. 431,925, dated July 8, 1890.

Application filed April 22, 1890. Serial No. 349,007. (No model.)

To all whom it may concern:

Be it known that I, JEROME C. TAFT, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Swaging-Machines, of which the following is a specification.

Heretofore in swaging-machines it has been customary to employ a single set of oppositely-reciprocated dies, thus materially restricting the range of work to which the said machines were applicable; and it is the object of my invention to provide for the employment of another set of oppositely-reciprocated dies at right angles to the former set, whereby the efficiency of the machine can be greatly extended; and my invention consists in the improved construction and arrangement of the sets of swaging-dies, as hereinafter fully set forth.

Figure 1 represents a front view of the machine, showing the arrangement of the dies, the front covering-plates, which serve to hold the dies in position, being removed. Fig. 2 represents a vertical axial section of the machine. Fig. 3 represents a longitudinal section of one of the forcers, by means of which the dies are operated. Fig. 4 represents an end view of the same. Fig. 5 represents an end view of the sets of dies separate from the machine. Fig. 6 represents an enlarged front view of the die-holding head.

In the accompanying drawings, A represents the frame of a rotary swaging-machine of ordinary construction; B, the die-holding head, which is provided with a hollow shaft or shank C, upon which is placed the driving-pulley D. The rotary die-holding head B is provided with the cross-grooves *a a*, arranged at right angles to each other, and within the said grooves are placed the sliding forcers E, which are provided at their outer ends with the bearing-rollers *b*, the said rollers being adapted to engage with the adjustable beaters F, held in suitable grooves made in the annular flange *c*, the forcers E and beaters F being retained in proper position within their holding-grooves by means of the retaining-plates *d* and *e*, respectively, which plates are fastened to the die-holding head B and frame A by means of suitable screws.

The dies *f f f' f'* are arranged loosely within the inner portion of the grooves *a a* in advance of the sliding forcers E, the dies *f f*, which form one oppositely-reciprocated set, serving to form a lateral guide for the dies *f' f'* of the other set, one set being arranged at right angles to the other, and both sets being adapted for simultaneous operation by the beaters. The loose blocks *g g* may also be placed in the groove *a*, at opposite sides of the thinner dies *f' f'*, to serve as a directing-guide for the same, and the outer end of the thinner dies can also be guided by resting within a guiding-groove *h*, made in the face of the forcers E, by means of which the loose dies are operated.

Instead of employing the sets of forcers and detached dies, as hereinbefore described, the dies and forcers can be made in one piece; but in most cases I prefer to use the separate forcers and dies.

The dies shown in the drawings are especially adapted for swaging the clearing-grooves of drill-blanks, the dies *f f* being provided with a longitudinal groove *i*, adapted to swage the edge of the drill, while the dies *f f* are provided with a rounded edge *j*, which is adapted to swage the grooves, and by changing the dies in the machine for others of varying size or shape the grooves of the drill-blank can be carried to the required depth.

In swaging the drill-blank G (shown in section in Fig. 6) the grooved guiding-dies *f f*, which operate upon the edge of the blank, are arranged to have a very slight movement, while the rounded dies *f' f'*, which form the grooves, have a much greater movement, the engagement of the beaters F with the former set of dies being made less than that of the latter, and by reason of this inequality of movement of the two sets of dies I am enabled to practically employ the dies of one set as a guide for the dies of the other set, and this guiding arrangement of the dies and the unequal movement are especially adapted for the manufacture of grooved drill-blanks.

As shown in the drawings, the die-holding head B is made to revolve, while the beaters are held stationary; but the die-head B may be held stationary, while the beaters are made to revolve, if preferred.

I claim as my invention—

1. In a swaging-machine, the combination, with the die-holding head, of the sets of dies arranged at right angles to each other, the inner faces of the dies of one set being adapted to form a guide for the dies of the other set, substantially as described.

2. In a swaging-machine, the combination, with the die-holding head, of the sets of combined forcers and swaging-dies arranged at right angles to each other, substantially as described.

3. In a swaging-machine, the combination, with the die-holding head, of the sets of swaging-dies arranged at right angles to each other, the dies of one set being provided with a longitudinal groove and the dies of the opposite set with a rounded edge, substantially as described.

4. In a swaging-machine, the combination, with the die-holding head, of the sets of combined forcers and swaging-dies arranged at right angles to each other, and the guiding-blocks at the opposite sides of the die, substantially as described.

5. In a swaging-machine, the combination, with the die-holding head, of the sets of swaging-dies arranged at right angles to each other, the inner faces of the dies of one set being adapted to form a guide for the dies of the other set, the said guided dies having a greater movement, substantially as described.

6. In a swaging-machine, the combination, with the die-holding head, of the sets of swaging-dies arranged at right angles to each other, the dies of one set being made to have a greater movement than the dies of the other set, substantially as described.

JEROME C. TAFT.

Witnesses:
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JOHN S. LYNCH.