

(No Model.)

3 Sheets—Sheet 1.

J. C. TAFT.
SWAGING MACHINE.

No. 573,051.

Patented Dec. 15, 1896.

Fig. 1.

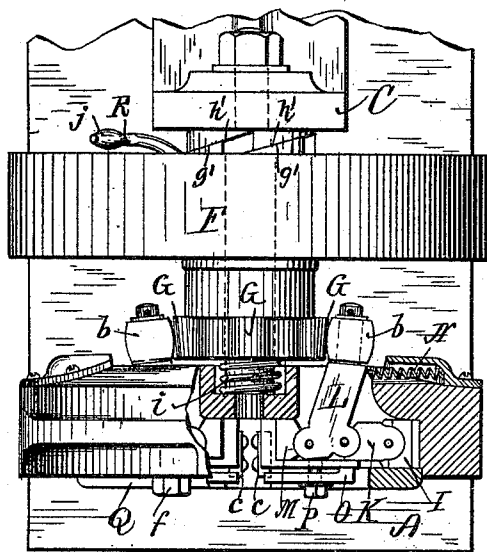
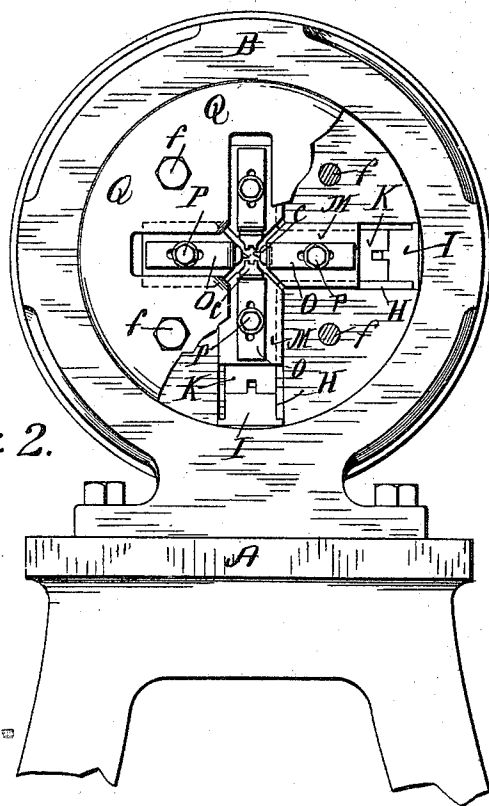


Fig. 2.



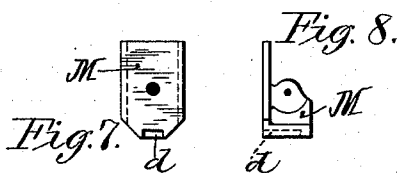
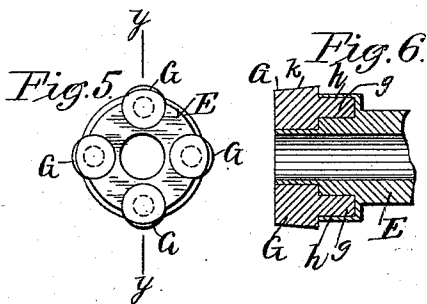
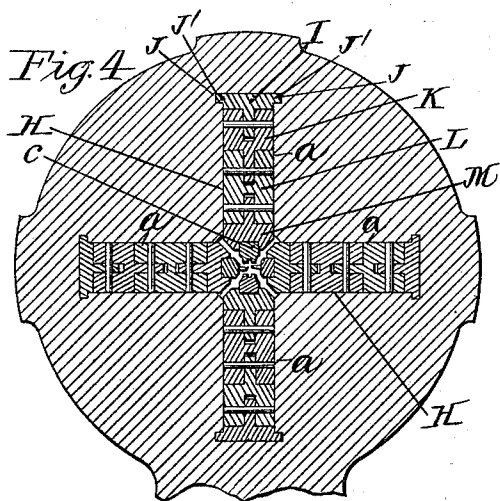
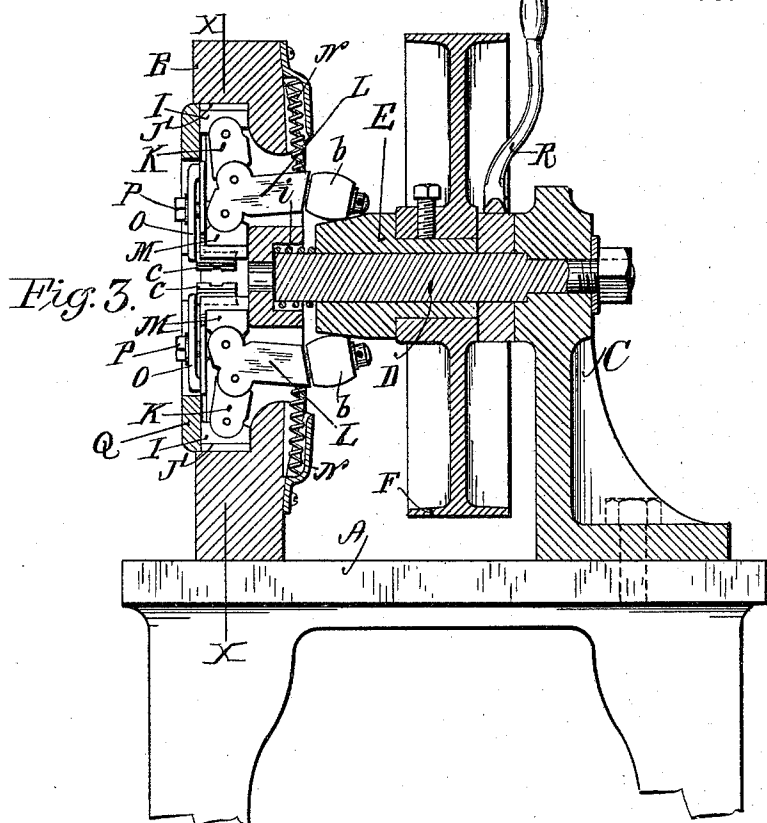
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George E. Long

Inventor:
Jerome C. Taft
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3 Sheets—Sheet 3.

J. C. TAFT.
SWAGING MACHINE.

No. 573,051.

Patented Dec. 15, 1896.

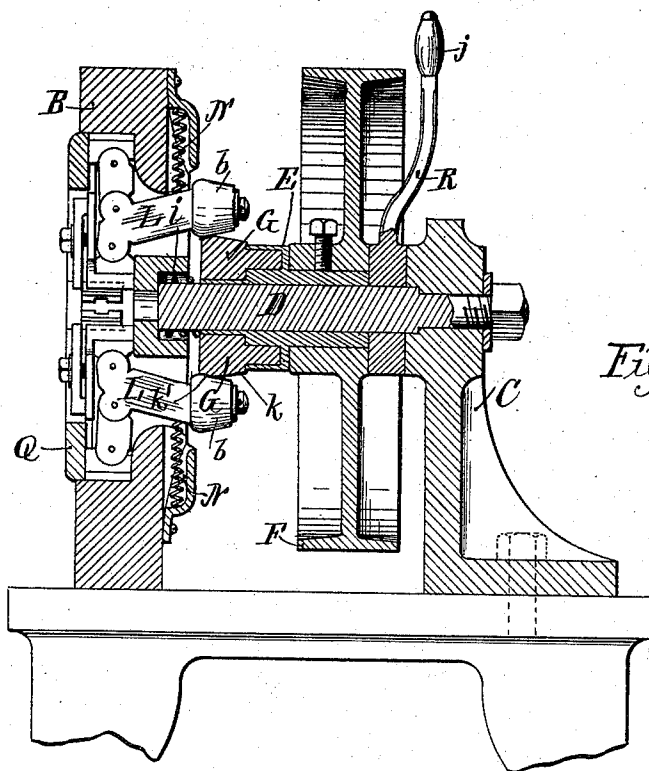


Fig. 9.

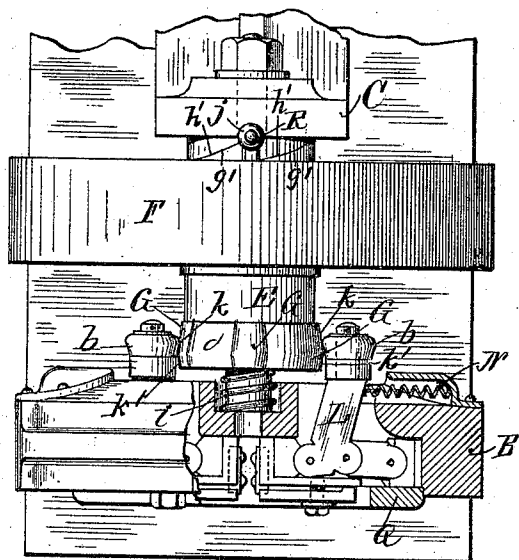


Fig. 10.

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UNITED STATES PATENT OFFICE.

JEROME C. TAFT, OF PROVIDENCE, RHODE ISLAND.

SWAGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 573,051, dated December 15, 1896.

Application filed September 17, 1894. Serial No. 523,304. (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.

My invention relates to swaging-machines in which the dies are held in a stationary head; and it consists in the employment of a toggle-jointed-lever connection between the dies and the beaters and in means for changing the closing movement of the sets of opposite dies independently of each other, as hereinafter fully set forth.

Figure 1 represents a top view of a swaging-machine embodying my invention, a portion of the die-holding head being broken away to show the concealed parts. Fig. 2 represents a front elevation with a portion of the front plate broken away. Fig. 3 represents a vertical section taken in the line of the axis of the machine. Fig. 4 represents a vertical section taken in the line *xx* of Fig. 3. Fig. 5 represents an end view of the sleeve which carries the beaters. Fig. 6 represents an axial section taken in the line *yy* of Fig. 5. Figs. 7 and 8 represent a front and a side view of the die-holder. Fig. 9 is an axial section, and Fig. 10 a top view showing a swaging-machine in which the opposite sets of dies may be operated to change their closing movement independently of each other.

In the accompanying drawings, A represents the supporting-table, upon which the machine is set, B the stationary head or holding case for the swaging-dies, secured to the table by means of screws, and C the standard for supporting the stud D, upon which is placed the loosely-revolving sleeve E, to which is attached the pulley F, the said sleeve being provided with the inclined beaters G G for actuating the swaging-dies upon the rotation of the said sleeve, the said beaters being provided with a reduced cylindrical portion *g*, which enters a socket *h* in the sleeve E, by means of which the beaters will be firmly attached to the sleeve.

The holding-case B is provided with the diametrical recesses H, adapted to contain the dies and their operating-levers, the said

dies being operated from bearing-pieces I, which are held in position by means of the grooves J J and the flanges J' J', and to the said bearing-pieces I are pivoted the toggle-joint links K, the said links being jointed to the levers L, to which are pivoted the die-holders M, the said connected parts being guided in the oppositely-arranged arms *a a* of the holding-recesses H. The outer ends of the toggle-jointed levers L are preferably provided with the antifriction-rollers *b*, adapted for engagement with the beaters, the said rollers being held against the revolving sleeve E and the beaters attached thereto by means of the springs N. The die *c* is held in the groove *d* of the die-holder M by means of the clamping-piece O, which is attached to the die-holder M by means of the clamping-screw P, the die-holder being held in position within the arm *a* of the holding-recess H by means of the covering-plate Q, which is secured to the holding-case B by means of the screws *f f*.

Between the rear end of the sleeve E and the inner face of the standard C is loosely placed the hand-operated cam-lever R, provided with the inclined surfaces *g' g'*, which rest against the correspondingly-inclined surfaces *h' h'* at the inner face of the standard, and upon the bearing-stud D at the forward end of the sleeve E is placed the spiral spring *i*, the said spiral spring being adapted to force the sleeve E back toward the standard C, so that the inclined surfaces *g'* and *h'* will be kept in close contact with each other, and at any time when the machine is in operation the handle *j* of the cam-lever R may be moved upon the stud D, so as to carry the rotating sleeve E farther forward against the resilience of the spring *i*, thus bringing a higher portion of the inclined beaters G under the rollers *b* to cause an increased closing movement of the dies *c*, and upon the reverse movement of the handle *j* the inclined beaters G will be brought back to their original position by means of the spring *i*, so that the closing movement of the dies will be as before. The rollers *b* are preferably made rounding upon their faces, in order to accommodate themselves to the varying inclination of the levers L when subjected to the action of the beaters. Other means than the lever R may be

conveniently employed to move the beaters forward to cause the required change in the closing movement of the dies, but the device shown and described is well adapted for the purpose.

When the revolving beaters are provided with a single incline k , as shown in Fig. 6, the forward movement of the beaters will cause the equally-changed movement of both sets of opposite dies, but in the machine shown in Figs. 9 and 10 the forward movement of the beaters will cause a reverse change in the opposite sets of dies, so that while one set of dies will be closed down upon the work the other set of dies will be caused to recede, and in this case the beaters are formed with the opposite inclines k k' , the rollers b of the levers L of one set of dies being adapted for impulsion from one of the inclined surfaces of the beaters and the rollers b of the levers L of the opposite set of dies from the oppositely-inclined surface, and by the employment of the toggle-jointed levers L between the beaters and the dies a very powerful closing movement may be imparted to the said dies.

In the accompanying drawings the head B is represented as provided with a recess H , adapted for two sets of oppositely-acting swaging-dies arranged at right angles to each other, but a machine having a single set of opposite dies may be employed for many purposes, or a machine having three sets of oppositely-acting dies may be used, if desired.

I claim as my invention—

1. In a swaging-machine, the combination of the opposite swaging-dies, and the revolving beaters adapted for forward and backward movement, with the toggle-jointed levers having a projecting arm adapted for engagement with the beaters, and means for moving the beaters forward and backward while the machine is in operation, substantially as described.

2. In a swaging-machine, the combination of the opposite swaging-dies, and the inclined revolving beaters, with the toggle-jointed levers, provided with rollers arranged on the long arms of the levers, to receive the action of the beaters, substantially as described.

3. In a swaging-machine, the combination of the opposite swaging-dies, and the inclined revolving beaters, with the toggle-jointed levers, provided with tapering rollers, arranged on the long arms of the levers to receive the action of the beaters, substantially as described.

4. In a swaging-machine, the combination of the sets of opposite dies with the revolving beaters provided with opposite inclined surfaces, and connections between the beaters and dies, whereby the sets of opposite dies may have an independent closing movement, substantially as described.

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Witnesses:

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