

(No Model.)

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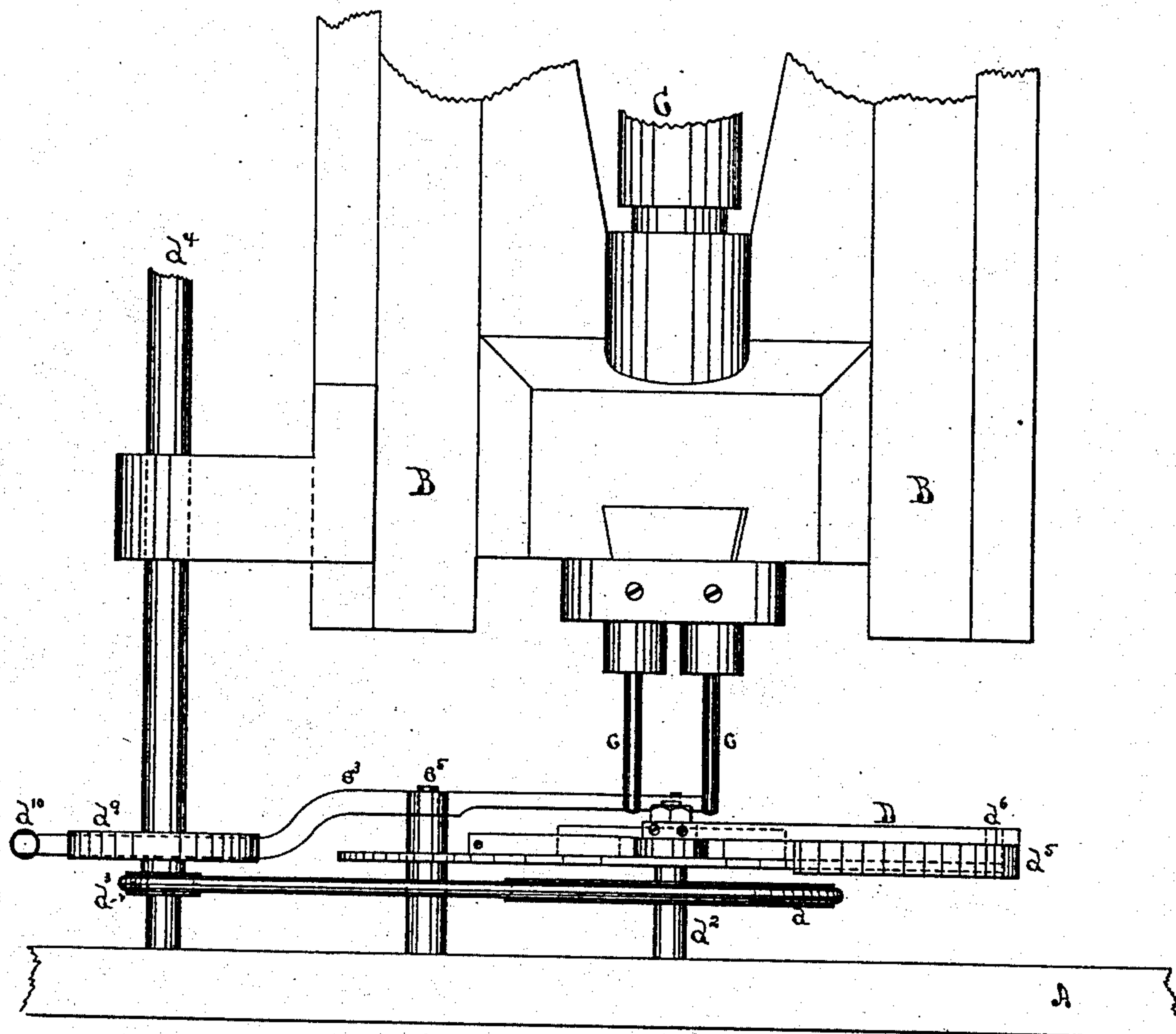
P. BUTLER.

MACHINE FOR DRAWING METALLIC CARTRIDGE SHELLS

No. 294,115.

Patented Feb. 26, 1884.

Fig. 1



Witnesses

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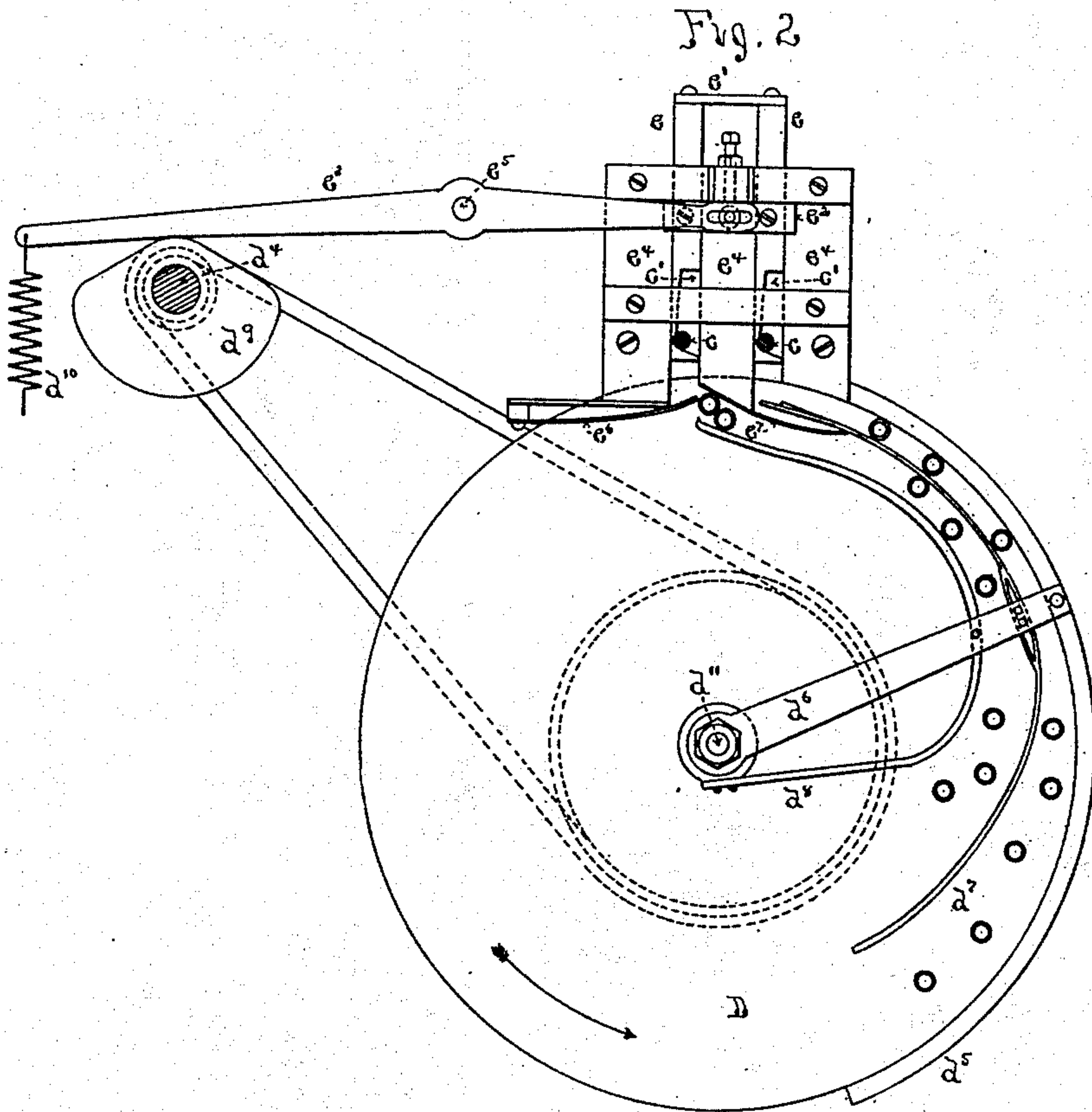
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UNITED STATES PATENT OFFICE.

PAUL BUTLER, OF LOWELL, MASSACHUSETTS.

MACHINE FOR DRAWING METALLIC CARTRIDGE-SHELLS.

SPECIFICATION forming part of Letters Patent No. 294,115, dated February 26, 1884.

Application filed October 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, PAUL BUTLER, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful
5 Improvement in Machines for Drawing Metallic Cartridge-Shells, of which the following is a specification.

My invention relates to machines for drawing metallic cartridge-shells; and it consists
10 in so constructing the machines by duplicating and rearranging their operative parts that each machine is enabled to draw out twice as many shells in the same time and with the same attendance of the operator, thus increasing the production, while saving in the labor
15 and space required for it, all substantially as hereinafter described.

In the drawings, Figure 1 is a front elevation of the drawing-machine provided with
20 my improvements. Fig. 2 is a top view of the feed-table and other working parts, with the drawing punches removed to show their mode of operation more clearly.

A is the bed-plate, and B the frame-work
25 which supports the working parts.

C is the plunger, which carries the drawing-punches. The ordinary drawing-machine has heretofore had but one punch; but I provide the plunger with two punches, *c c*, set side by
30 side in it, as shown in Fig. 2. I also provide two dies, *c' c'*, placed and supported upon the bed A in the usual manner, and in proper position to act with the punches in drawing the shells.

D is the feed-table, which feeds the shells to the dies and punches. It is made to revolve in the usual manner by a band-wheel, *d*, on its vertical shaft *d'*, which is driven from the band-wheel *d'* upon the cam-shaft *d'*. On
40 this table is the usual fixed circular outer guiding-rim, *d'*, for the shells. This guide-rim is supported by the arm *d'*, which is attached to a stationary stud, *d'*, which is fixed to the bed-piece and projects upward through the center of the shaft *d'*, which is made hollow and tubular for the purpose. Of course the shaft *d'*, band-wheel *d*, and feed-table D revolve around this stud. I also attach to the arm *d'* an intermediate guide for the shells *d'*,
45 between which and the outer guide, *d'*, they are conducted to the first or right-hand draw-

ing-punch and die, and nearer the center of the table D. I attach to said arm another guide, *d'*, between which and the guide *d'* the shells are conducted to the second or left-hand
55 drawing-punch and die. The guide *d'* is made in the usual manner, with elastic or spring ends nearest to the dies and punches. Heretofore it has been customary to have but a single pair of these guides to conduct the
60 shells to a single punch and die. The table D is rotated in the direction of the arrow, and carries the shells constantly forward to the dies and punches as they are placed in position upon it by an attendant. 65

For delivering the shells to the dies and punches I employ a double carrier composed of two hook-ended slides, *e e*, attached together by the cross-bars *e' e'*, and reciprocated toward and from the feed-table over the dies
70 in the ordinary manner in guides *e' e'* by the lever-arm *e'*, attached to bar *e'*, which is pivoted at *e'*, and bears against the cam *d'* upon cam-shaft *d'* by the aid of the spiral spring *d'*. At the delivery ends of the guides *d' d'*
75 *d'* are placed springs *e' e'*, attached to the slide-guides *e'*, as shown. The office of these springs is to keep the delivery end of the shell-guides closed, and prevent the improper escape of the shells as they are crowded forward by the rotation of table D. As the
80 hooked ends of the slides are reciprocated toward the table D, and just before they reach the end of this forward movement, they press respectively upon spring *e'* and spring end of
85 guide *d'* and open them sufficiently to allow a single shell to pass through each aperture and be caught behind the hooks of slides *e e*, when the reverse motion of the slides draws the shells forward over the die-holes in the position shown in Fig. 1, when the punches descend, and, forcing the shells through the dies, draw them out. 90

It will be observed that in order to carry out my invention I make the outer and inner
95 shell-guides, *d' d'*, rigid, and employ the spring *e'* to hold back the shells directly, instead of pressing upon the elastic end of the guide, as in the case of guide *d'*. It will also be observed that I slope or bevel off the end of the
100 central slide-guide, *e'*, where the spring *e'* is attached to it, so as to allow the entrance of

the shells to the second or left-hand hooked slide, as described.

By this combination of double-drawing punches and dies, double-hooked slides, and
5 double-acting shell-guides, I am enabled to make the drawing-machine draw two shells at once, instead of one, as heretofore, and thus double the production of the machine. As
10 one attendant can as easily attend to the machine with my improvements as before, this is a great advantage.

What I claim as new and of my invention is—

1. In combination with the feed-table D,
15 three or more shell-guides, $\bar{d}^5 \bar{d}^7 \bar{d}^8$, substantially as described.

2. In combination with the revolving table D, the two sets of punches and dies $c' c'$ and two reciprocating feeding-slides, $e e$, substan-
20 tially as described.

3. In combination with the rigid outer and inner shell-guides, $\bar{d}^5 \bar{d}^8$, the intermediate shell-guide, \bar{d}^7 , having an elastic delivery end, substantially as described.

4. In combination with the revolving feed- 25 table D, three shell-guides, $\bar{d}^5 \bar{d}^7 \bar{d}^8$, two reciprocating carrier-slides, $e e$, and two sets of dies and punches, $c' c$, substantially as described.

5. In combination with the feed-table D, the shell-guides $\bar{d}^5 \bar{d}^7 \bar{d}^8$, the springs $e^6 e^7$, and the 30 two reciprocating carriers $e e$, substantially as described.

6. The combination of the feed-table D, three shell-guides, $\bar{d}^5 \bar{d}^7 \bar{d}^8$, and two punches, $c c$, substantially as described.

PAUL BUTLER.

Witnesses:

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