

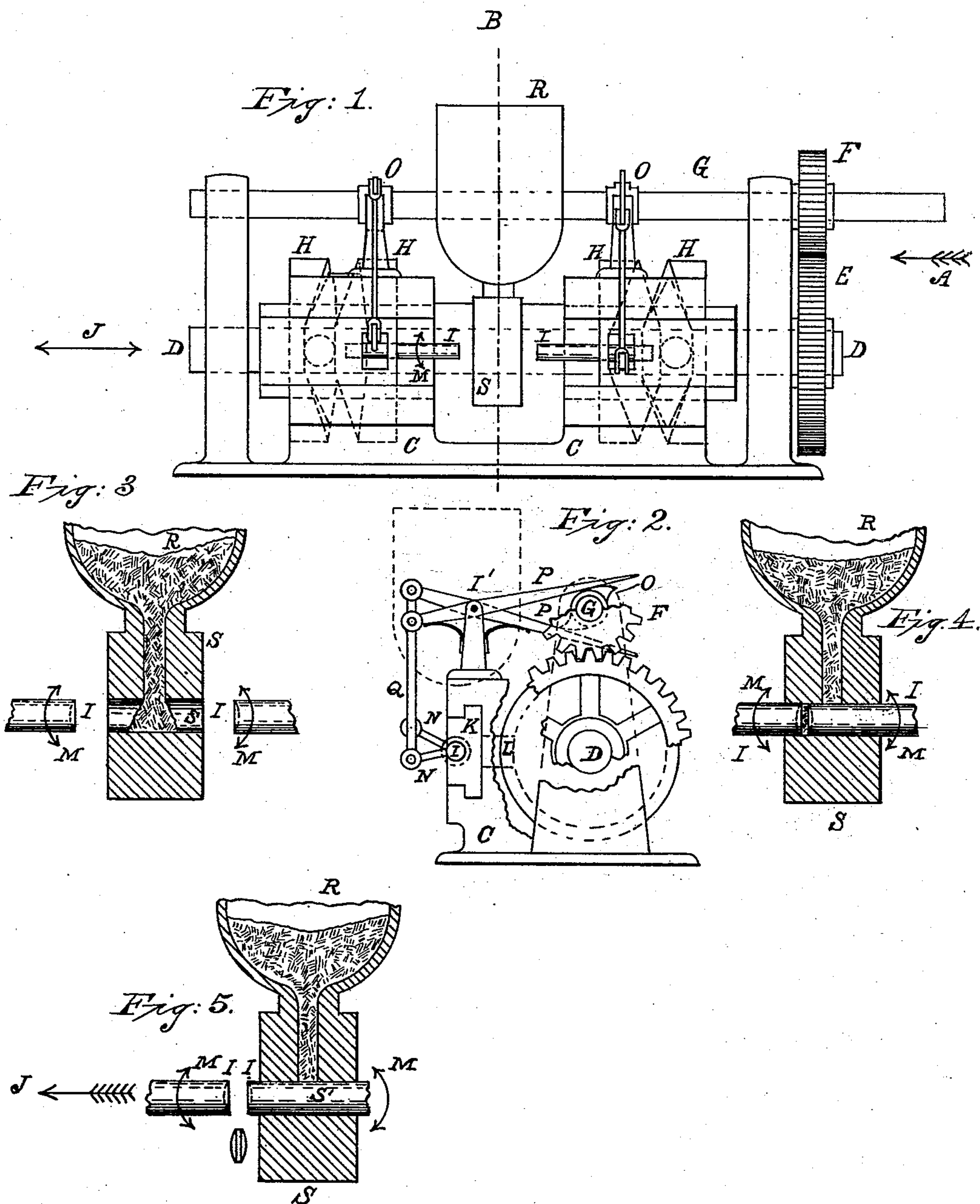
(No Model.)

2 Sheets—Sheet 1.

C. E. BEARDSLEY.
TABLET MOLDING MACHINE.

No. 506,807.

Patented Oct. 17, 1893.



WITNESSES.

Allen De Vilbiss
Charles H. Louthard.

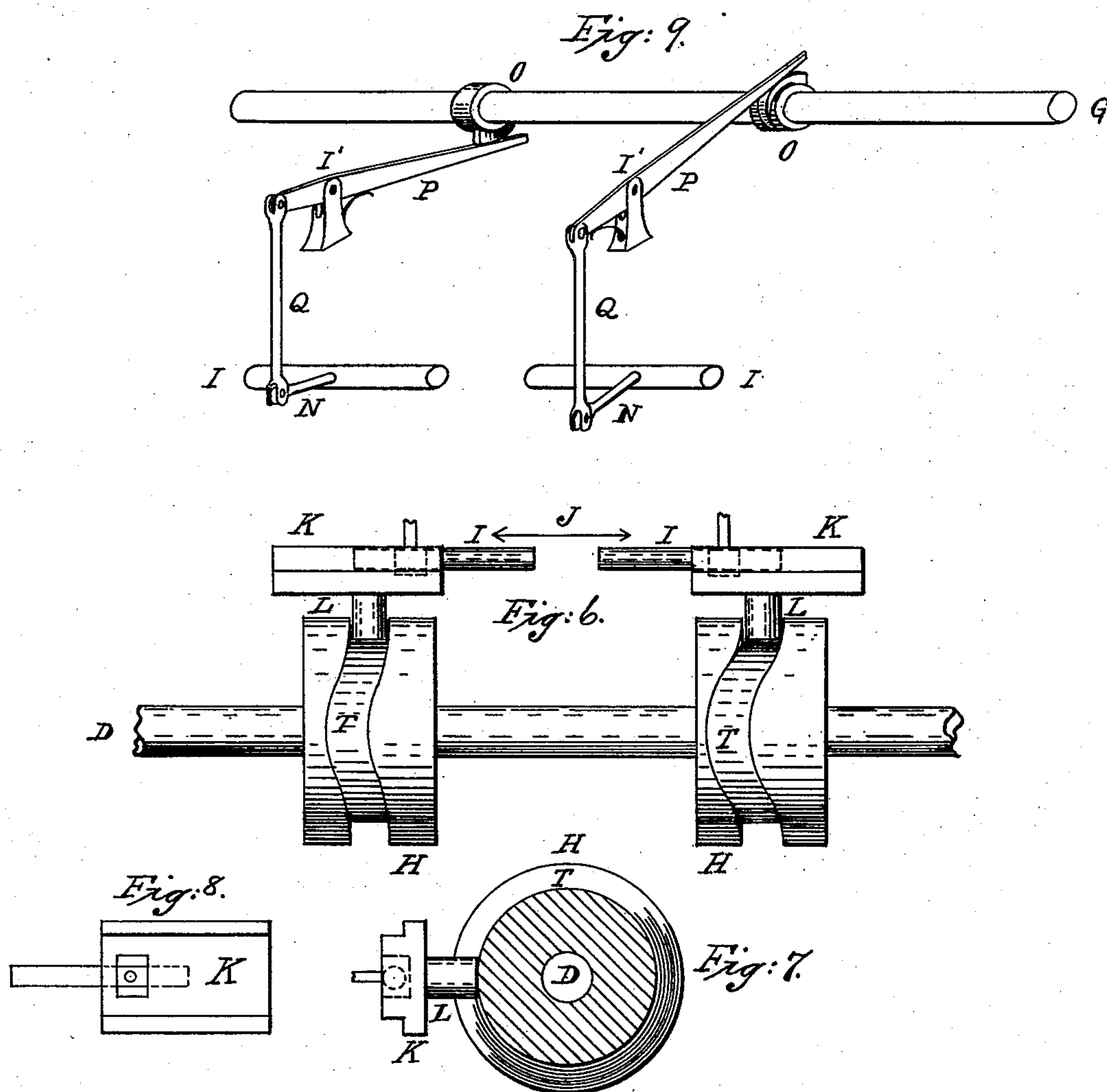
INVENTOR.

Charles E. Beardsley

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WITNESSES.

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UNITED STATES PATENT OFFICE.

CHARLES E. BEARDSLEY, OF OTTAWA, OHIO.

TABLET-MOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 506,807, dated October 17, 1893.

Application filed May 26, 1893. Serial No. 475,545. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. BEARDSLEY, a citizen of the United States, residing at Ottawa, in the county of Putnam and State of Ohio, have invented certain new and useful Improvements in Tablet-Molding Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in tablet molding machines of the variety wherein the tablets are formed and compressed into a dense and compact form. And the nature of my improvements consists in effectively detaching the tablets from the forming and compressing plungers by means of a reciprocally rotary movement of said plungers, which movement also imparts to the said tablets, polished surfaces. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical side elevation of the machine. Fig. 2 is a vertical end elevation, viewed in the direction of the arrow A. Fig. 3 is a vertical section on line B. Fig. 1, showing the position of the plungers, while the forming die is being supplied with material. Fig. 4 is also a vertical section on line B Fig. 1, showing the position of the plungers while the tablet is being compressed. Fig. 5 is also a vertical section on line B Fig. 1 showing the position of the plungers while the tablet is being discharged. Fig. 6 is a top view of a portion of shaft D. showing the connection of cams H with slides K. and plungers I. Fig. 7 is an end view of the slide K and a vertical cross section of cams H. Fig. 8 is a vertical side view of one of the slides K. Fig. 9 is a perspective view of the parts—P. Q. N. O and I—and a portion of shaft G.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings C is the base or frame of the machine in which is journaled a powershaft D carrying a spur gear E. which meshes into a second spur gear F. of suitable size to correspond with the power and speed required. The gear F. actuates a shaft G lying parallel with shaft D. and extending substantially the length of the machine frame

C. By means of cams H. longitudinal movements are given to plungers I in the direction of the double headed arrow J. The connections between the cams H and plungers I. are, in the form, of horizontally moving slides, K. in which said plungers, are journaled, and the said slides are operatively connected with the said cams, by means of lugs L extending outwardly from said slides, toward, and connecting with said cams H. The die is bored at S', to correspond with the sizes of plungers employed and these plungers, and dies, may be varied in form and size to adapt them to the forms and sizes of the tablets to be made.

Reciprocal circular movements, in both directions, (as indicated by the double headed arrows M,) are given to the plungers I. I. as follows: Attached to the plungers I. I. are radiating arms N. N. and to the shaft G. are secured cams O. O. adapted to actuate the levers P in a swinging or partially circular direction about the centers of the pivot I' and to transmit the same movement to the plungers I by means of connecting rods Q and arms N.

The longitudinal movements of the plungers I I are very limited in extent, and any suitable means, such as shown in Figs. 6, 7, 8, and 9, and hereinafter explained, may be employed for this purpose—which any one skilled in the construction of mechanism involving the construction of cams, might devise. For instance, in the present case, in Fig. 6, two rotary cams H. H. located upon shaft D. are adapted by means of curved grooves T and through lugs L. and slides K. to accomplish these movements. In the present instance the gears E and F. are proportioned so that the latter makes two revolutions while the former makes one—and the cams H. each, have curves T on opposite sides adapting the plungers I to make, each, two forward and back movements, in the direction J. to one revolution of the power shaft D.

It will thus be seen, that the primary features of this invention are the combined reciprocal rotary and longitudinal movements of the plungers I. I. and the operation of this described machine, is as follows: A quantity of prepared materials adapted to the formation of such tablets as are wanted is placed within the feeder R. and falls into the dies as

shown in Fig. 3, when horizontal movements of the plungers I I toward each other, and within the dies S, gather and compress into the required form the said materials as shown in Fig. 4, and at this instant opposite reciprocal rolling motions are imparted to the said plungers, as hereinbefore explained—
10 friction resulting from said reciprocal rolling motions, polishes the surfaces of the tablet which contact with the said plungers. A further combined movement of the plungers I. in the direction of the arrow J (the said movement being so adjusted in the construction
15 of the grooves T. in cams H. as that the said plungers will separate more widely apart) discharges the tablet from the die and plungers, as shown in Fig. 5. It is obvious that one or
20 both of the plungers I may be reciprocally rotated, with partially corresponding results, as if both reciprocally rotated.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a tablet molding machine of the character shown, a perforated die opening upon opposite sides, plungers adapted to enter both extremities of said die one of which plungers is adapted to be reciprocally rolled therein, substantially as shown. 25

2. In a tablet molding machine of the character shown, a perforated die opening upon opposite sides plungers adapted to enter both extremities of said die and to be reciprocally rolled therein, in opposite directions, substantially as shown. 35

In testimony whereof I have affixed my signature in presence of three witnesses.

CHARLES E. BEARDSLEY.

Witnesses:

ALLEN DE VILBIR,
CAMS K. SOUTHARD,
ELISHA B. SOUTHARD.