

No. 742,789.

PATENTED OCT. 27, 1903.

W. W. HODGSON.
CARD PUNCHING OR STAMPING MACHINE.

APPLICATION FILED MAR. 5, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

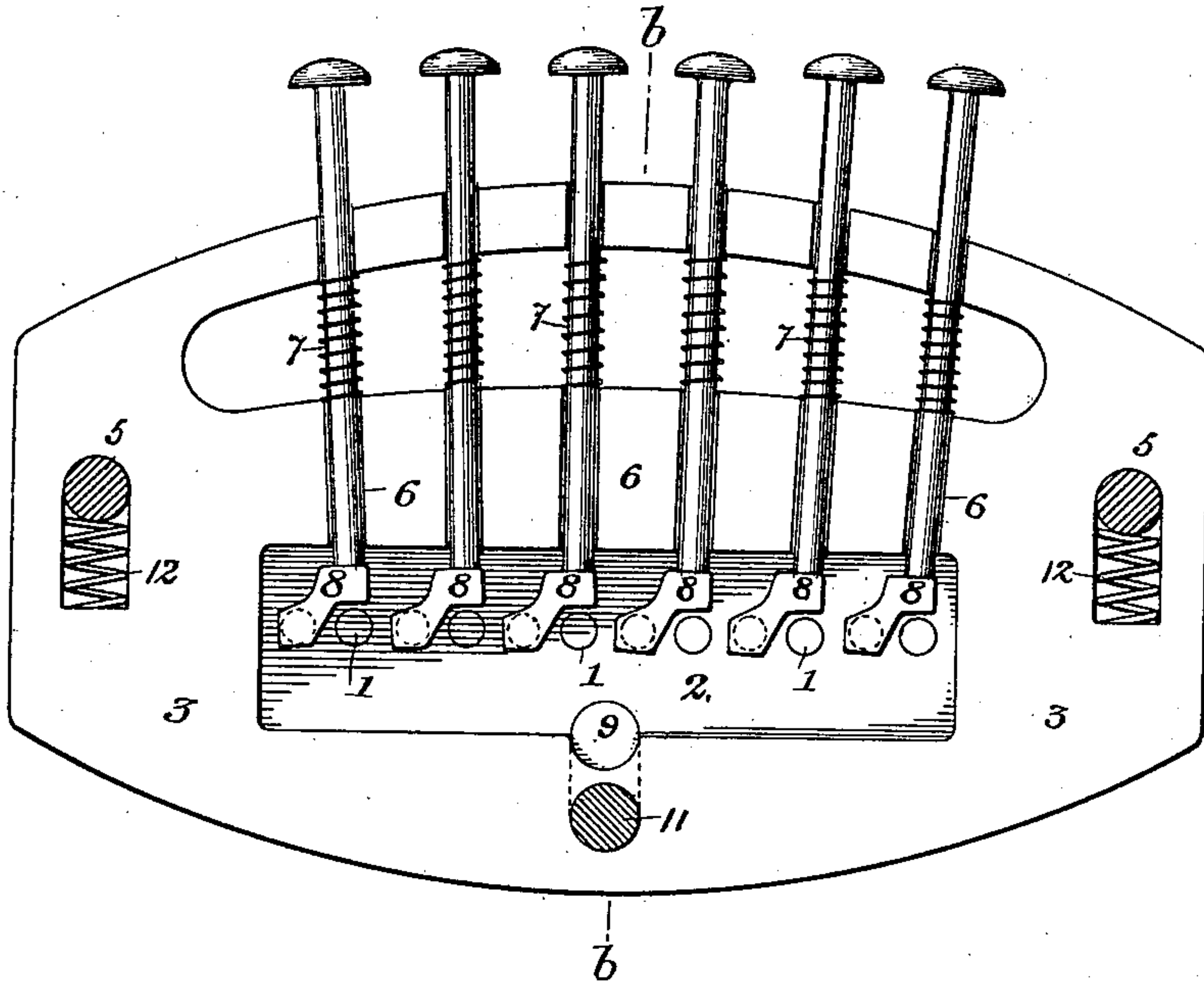


Fig. 2.

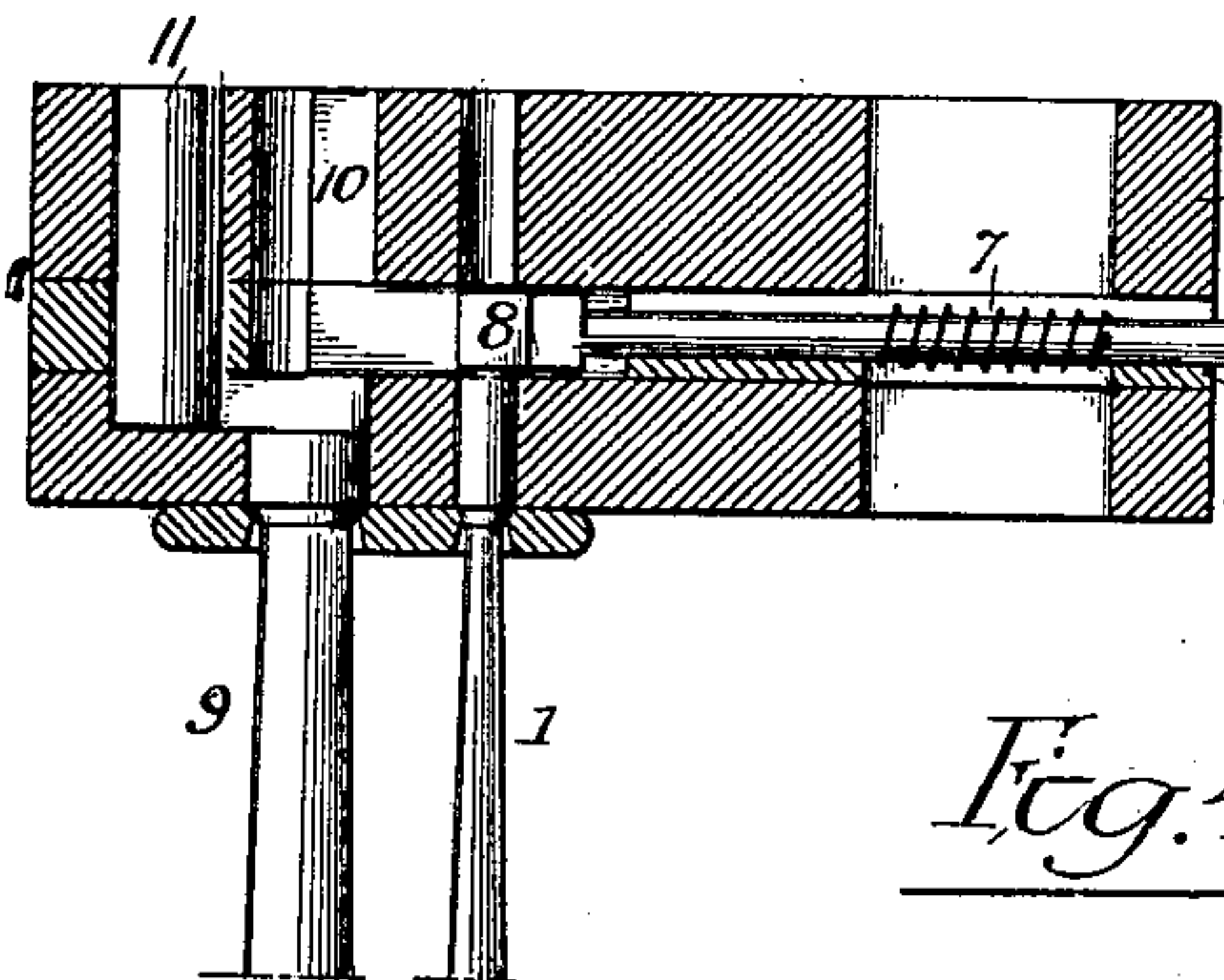


Fig. 3.

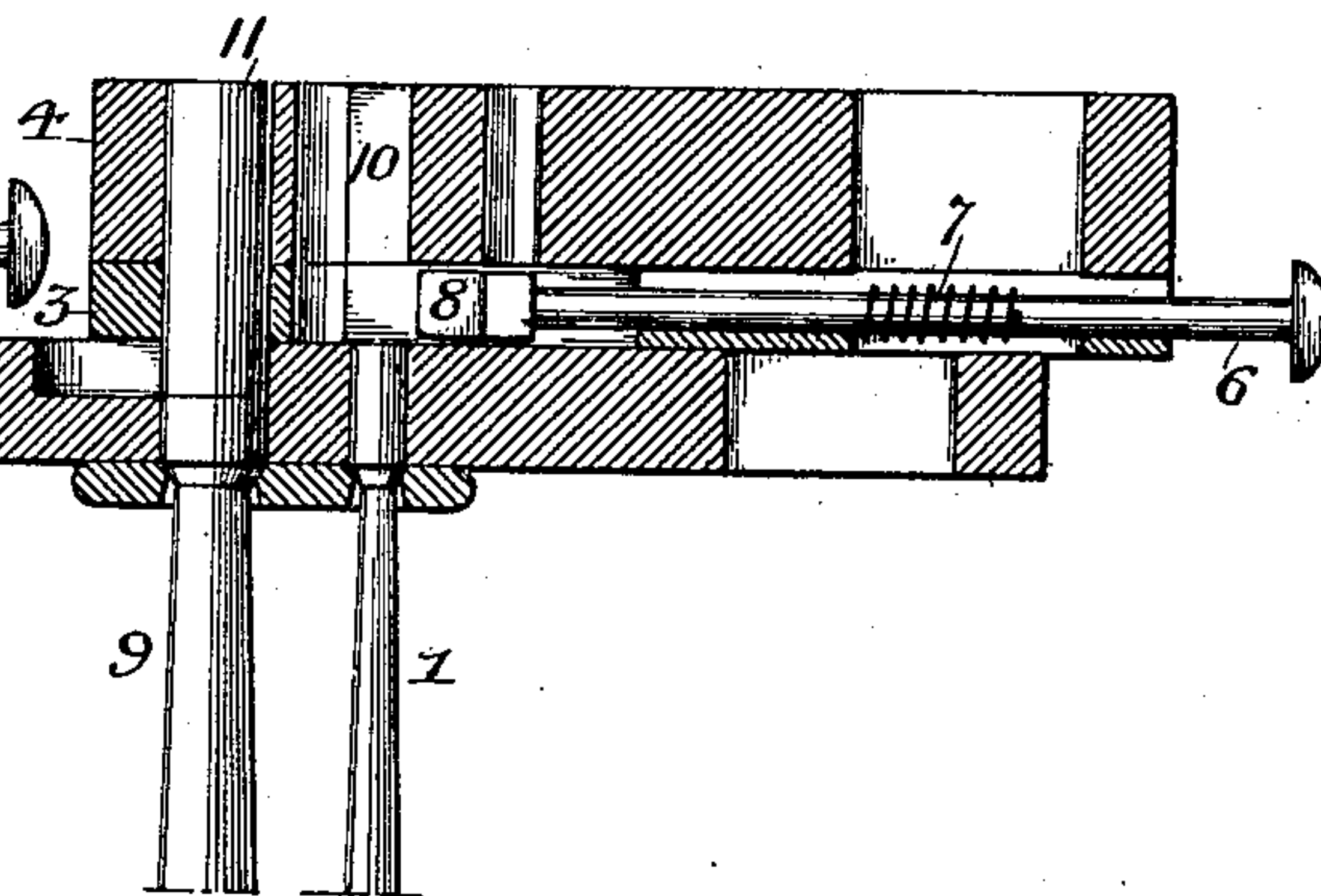
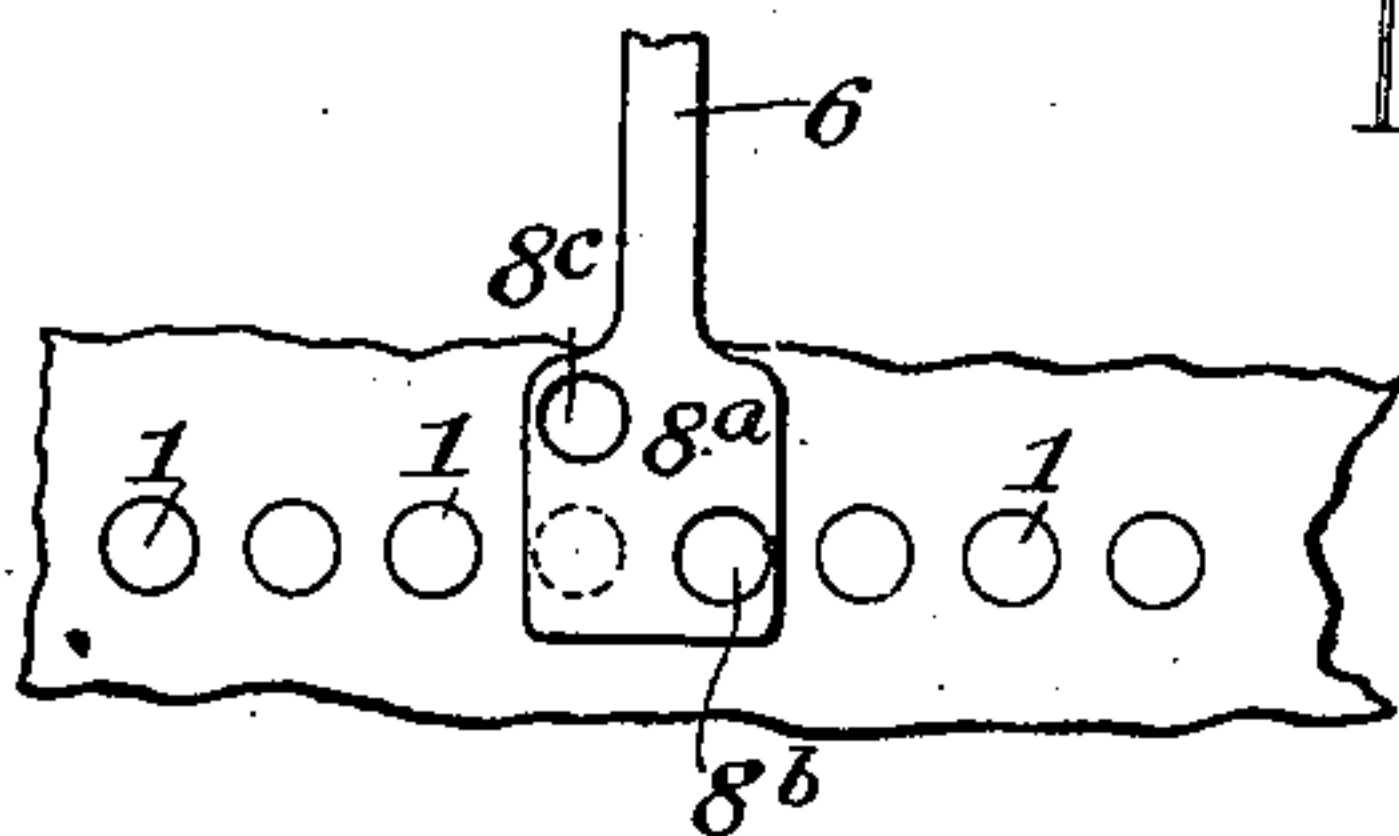


Fig. 4.



Witnesses:

Titus H. Linn

Augustus B. Loppes

Inventor:

Walter W. Hodgson,

by his Attorneys;

Howell & Howson

No. 742,789.

PATENTED OCT. 27, 1903.

W. W. HODGSON.
CARD PUNCHING OR STAMPING MACHINE.

APPLICATION FILED MAR. 5, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 5.

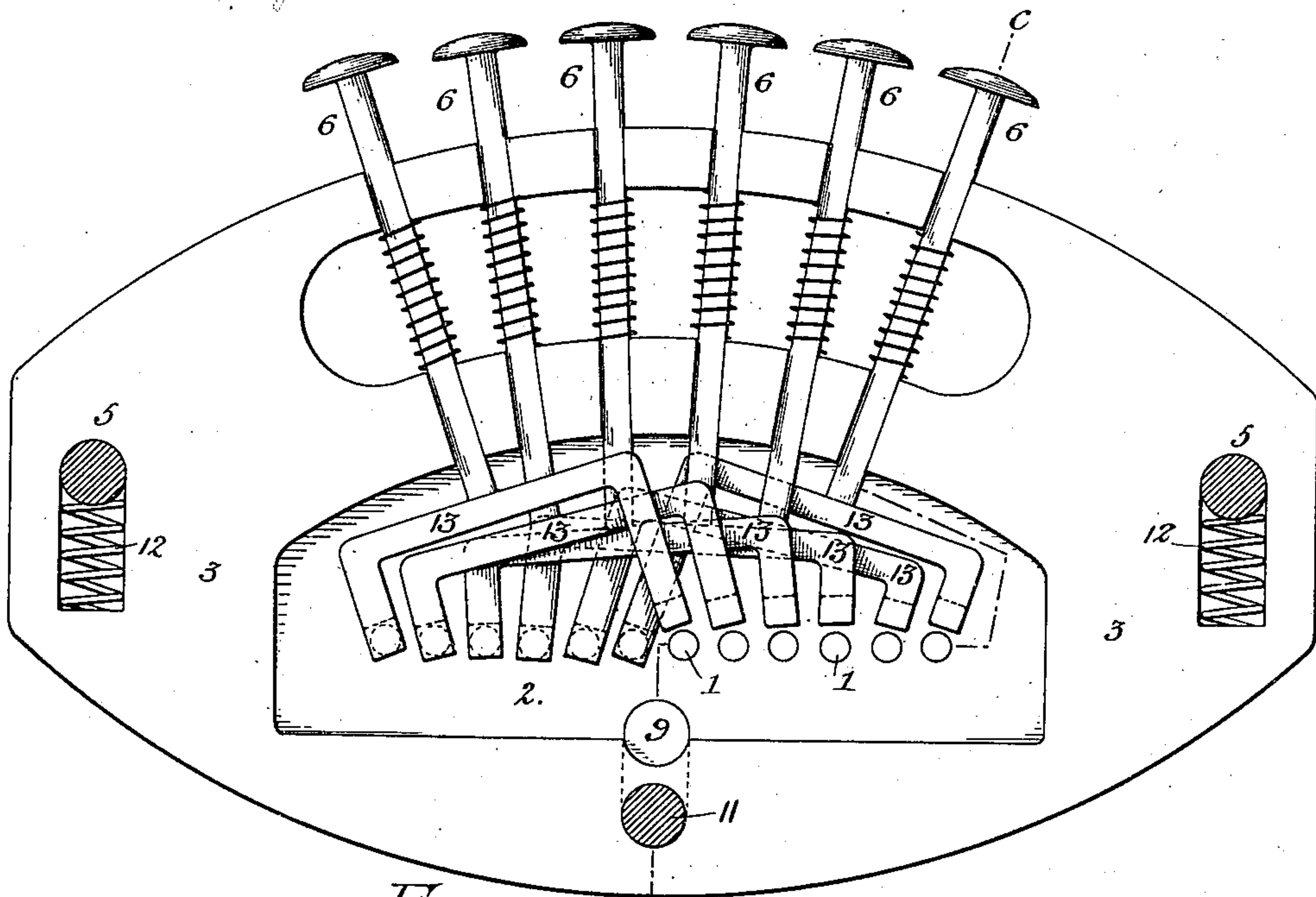


Fig. 6.

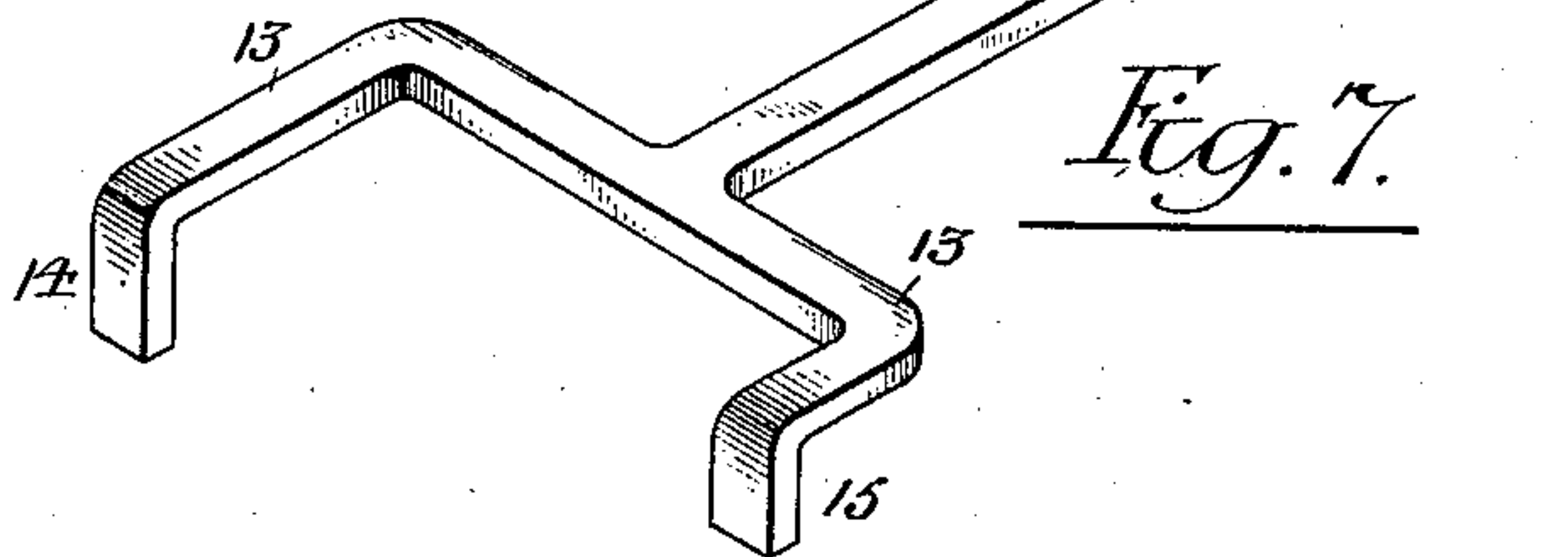
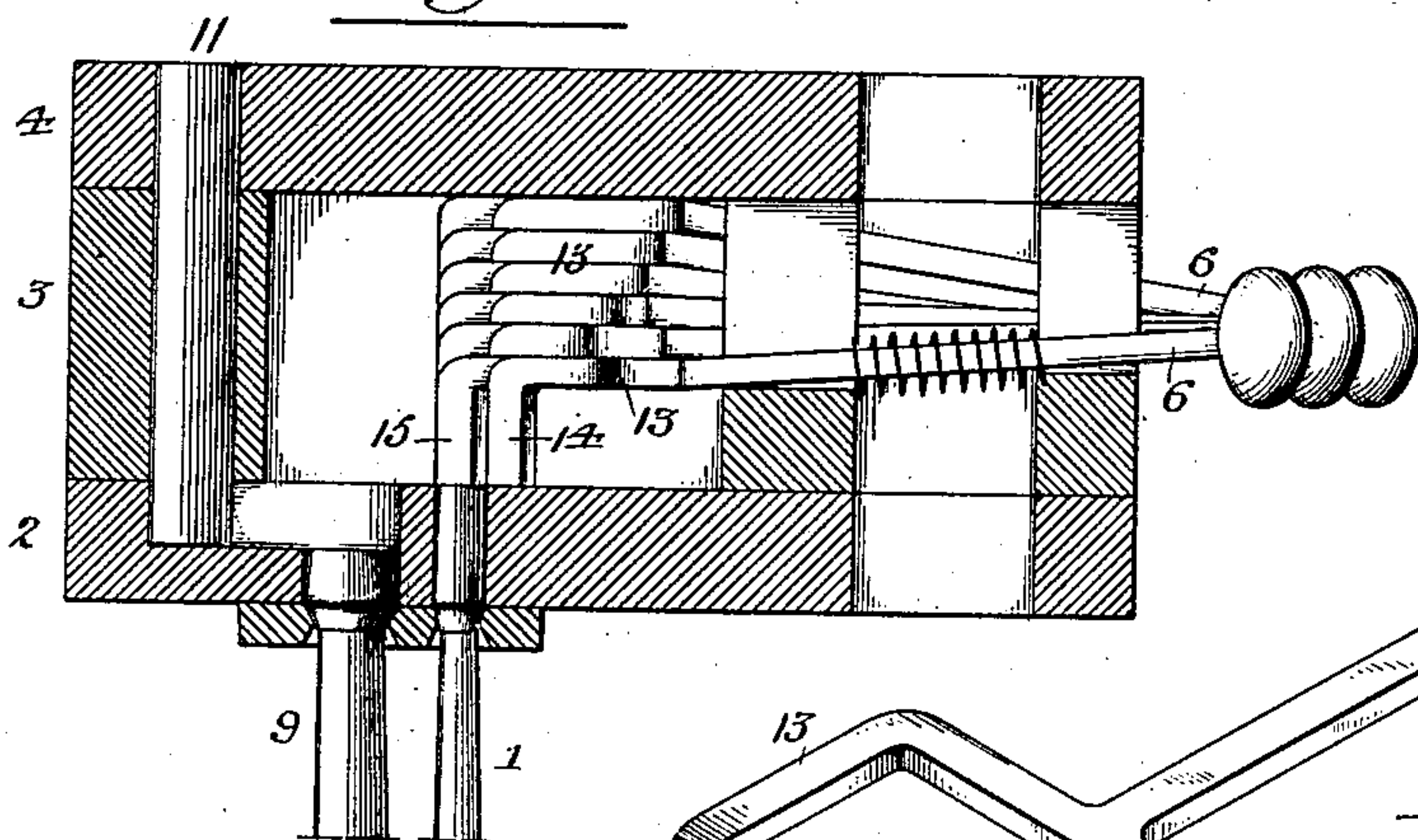


Fig. 7.

Witnesses:-

Titus H. Jones.

Cingustus B. Coppes.

Inventor:-

Walter W. Hodgson,

by his Attorneys;

Howson & Howson

UNITED STATES PATENT OFFICE.

WALTER W. HODGSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO WILLIAM E. BEATTY AND FRED SUTCLIFFE, OF PHILADELPHIA, PENNSYLVANIA.

CARD PUNCHING OR STAMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 742,789, dated October 27, 1903.

Application filed March 5, 1903. Serial No. 146,320. (No model.)

To all whom it may concern:

Be it known that I, WALTER W. HODGSON, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Card Punching or Stamping Machines, of which the following is a specification.

The object of my invention is to so construct a jacquard-card punching or stamping machine that each key of the same may be caused to control either of two punches of the row with which the machine is provided, whereby said key may be caused to effect the punching of either an odd or an even hole in the row of holes formed in the card by said row of punches, thereby lessening the number of keys required and materially simplifying and facilitating the operation of said keys.

In the accompanying drawings, Figure 1 is a sectional plan view on the line *a a*, Fig. 2, of sufficient of a jacquard-card punching or stamping machine to illustrate my invention. Fig. 2 is a transverse section of the stamping-head on the line *b b*, Fig. 1. Fig. 3 is a similar view illustrating some of the parts adjusted to a different position from that represented in Fig. 2. Fig. 4 is a plan view of part of a modified form of key for use in said machine. Fig. 5 is a view similar to Fig. 1, but illustrating another embodiment of my invention. Fig. 6 is a transverse section of the stamping-head on the line *c c*, Fig. 5; and Fig. 7 is a perspective view of one of the keys employed in said machine.

In preparing jacquard-cards for certain classes of work it is necessary to alternate the punched and blank portions of the card in a certain way. For instance, if an odd-numbered space in the row is punched the adjoining even-numbered space is permitted to remain blank, or vice versa, or if a space of the row on one half of the longitudinal center of the card is punched the corresponding space on the other half of the card is permitted to remain blank, or vice versa. Usually the card punching or stamping machine has as many keys as there are punches in a row, and the necessity of keeping in mind this peculiarity of cutting renders the opera-

tion of stamping the cards a very difficult one, requiring the closest and most careful attention on the part of the operator and correspondingly limiting the output of the machine.

The object of my invention, therefore, is to so construct the machine that it will automatically take care of the alternation of punched and blank spaces before referred to, each key controlling two punches and the operator manipulating these keys in the same manner as though punching a simple design involving only the use of six punches.

The punches 1 are arranged in a row, as usual, and are vertically supported in the stamping-head in the usual manner. Said stamping-head consists in the present instance of a lower section 2, an intermediate section 3, and an upper section 4, the section 2 being mounted immovably upon the vertical posts or studs 5 at the ends of the stamping-head, but the intermediate section 3 and the upper section 4 being movable transversely in respect to said lower section for a purpose described hereinafter.

The stems of the keys 6 are guided in slots in the intermediate section 3 of the stamping-head and are acted upon by springs 7, tending to project them; but the head 8 at the inner end of each key 6 is peculiarly formed, having a lateral bend or offset to the extent of the distance between adjoining punches of the row, which bend is projected to a like extent, so that while one portion of the head is in line with one punch, other portions of the head will be in line with the punch alongside of the same.

There are only half as many keys as there are punches, and when the keys are projected, as shown in Fig. 1, the offset and projecting portion of the heads 8 of the same overlap the tops of one-half of the punches—say the odd punches of the row—while the other portions of said heads 8 are in line with, but do not overlap, the even-numbered punches of the row. If, however, the key is depressed, the offset portion of its head is moved away from the punch which it normally overlaps, and the other portion of the head is caused to overlap the adjoining punch.

Hence if in the operation of the machine a key is permitted to remain in the projected position it will lock or prevent from moving upward a corresponding odd-numbered punch of the row, but will have no effect upon the adjoining even-numbered punch, and said odd-numbered punch will therefore form a hole in the card, while the even-numbered punch, being permitted to yield freely in a vertical direction, will permit its portion of the card to remain unpunched or blank. If, however, the key is depressed, a reverse action will take place, the even-numbered punch being locked in position vertically, so as to cause it to perforate its corresponding portion of the card, and the odd-numbered punch being free from vertical confinement, so as to permit its portion of the card to remain blank.

Other methods of forming the key-head so as to present two acting portions in different lateral and longitudinal planes may be adopted. For instance, in Fig. 4 I have shown a key having a head 8^a wide enough to cover two punches, this head having a forward opening 8^b in line with one punch and a rear opening 8^c in line with the adjoining punch.

In addition to the punches 1 an ordinary card-stamping machine is also provided with a special punch 9 for forming at the opposite ends of the card the openings for the reception of the pegs on the card-cylinder. This punch is normally inoperative and can be projected vertically into an opening 10 in the intermediate section 3 and upper section 4 of the stamping-head, as shown in Fig. 2; but when it is desired to render the punch 9 operative said intermediate and upper sections are pushed rearwardly, so as to carry the opening 10 out of line with said punch 9 and bring a plug 11 above it. The peg-hole is punched in the card before the formation of the first row of holes and after the formation of the last row of holes by the punches 1, and when it is being formed the opening 10 in the sections 3 and 4 of the stamping-head is above the row of punches 1, so as to permit of the rise into said opening of the upper ends of said punches, the key-heads 8 having been carried away from the punches 1 by the rearward movement of the section 3, as shown in Fig. 3.

The sections 3 and 4 of the stamping-head may be normally retained in the position shown in Fig. 2 by any suitable means—such, for instance, as springs 12, contained in the slots which are formed at the opposite ends of the sections 3 and 4 for the reception of the vertical studs 5 of the stamping-head.

The machine so far described provides for control of alternate and adjacent punches by a single key; but in some classes of work the punches which it is desired to subject to such joint control are more widely separated. For instance, each key may be called upon to control one of a series of six punches on one side of the longitudinal center of the card and a corresponding one of another set of six

punches on the opposite side of said central line. In adapting the machine for this class of work I can adopt the construction shown in Figs. 5 and 6, on reference to which it will be observed that each key 6 has a forked inner end 13 with downwardly-bent ends 14 and 15, the end 14 normally overlapping one of the punches of the row when the key is projected and the other end 15 being then normally free from engagement with a corresponding punch of the other set, the ends of the fork being so disposed, however, that depression of the key will carry the normally overlapping end 14 of the same away from its respective punch and will bring the normally non-overlapping end 15 over its respective punch, the action being, therefore, precisely the same as in the structure shown in Figs. 1, 2, and 3, with the exception of the difference of the location of the punches under control of the key.

The stamping-head is made in sections in order to permit of the insertion of the keys with their enlarged heads; but while it is preferred to form it in three sections, as shown, it may in some cases consist of but two sections, the sections 3 and 4 being combined.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A card punching or stamping machine having a row of punches and a series of keys, each with two punch-controlling portions so disposed that, when the key is projected, it will control one punch, and, when it is depressed, will control another and a different punch, substantially as specified.

2. A card punching or stamping machine having a row of punches and a series of keys each with acting member or head having two portions, one laterally offset and longitudinally projected in respect to the other, whereby each key may be caused to control either one of a pair of punches, substantially as specified.

3. The combination in a card punching or stamping machine, of a row of punches and a series of keys, each of said keys having punch-controlling portions which are out of line with each other both laterally and longitudinally, whereby, when projected it will control one punch of the set, and, when depressed, will control another and a different punch of the set, substantially as specified.

4. The combination in a card punching or stamping machine, of a row of punches, and a series of keys each having a forked inner end with terminations adapted, in one position of the key, to control one punch of the set, and in another position of the key, to control another punch of the set, substantially as specified.

5. The combination in a card punching or stamping machine, of a stamping-head composed of sections, one above another, punches carried by the lower section, and punch-controlling keys carried by a section above the

same, said upper section being movable back and forth over said lower section, substantially as specified.

6. The combination in a card punching or stamping machine, of a stamping-head having a lower section carrying a peg-hole punch, and a section above the same which is movable rearwardly over said lower section and has an opening which, in one position of said overlying section is in line with said peg-hole punch, and, in another position of said overlying section, is out of line therewith, substantially as specified.

7. The combination in a card punching or stamping machine, of a stamping-head having a lower section carrying a series of punches and also a peg-hole punch, and a section above the same which is movable rearwardly in respect to said lower section and has an

opening, which, in one position of said overlying section is in line with the peg-hole punch, and in the other position of said overlying section is in line with the other punches, substantially as specified.

8. The combination in a card punching or stamping machine, of a stamping-head having upper, lower, and intermediate sections, the lower section carrying a series of punches, and the intermediate section carrying a series of punch-controlling keys, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER W. HODGSON.

Witnesses:

F. E. BECHTOLD,
JOS. H. KLEIN.