

No. 747,918.

PATENTED DEC. 22, 1903.

W. W. HODGSON.
JACQUARD CARD STAMPING MACHINE.

APPLICATION FILED MAR. 19, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

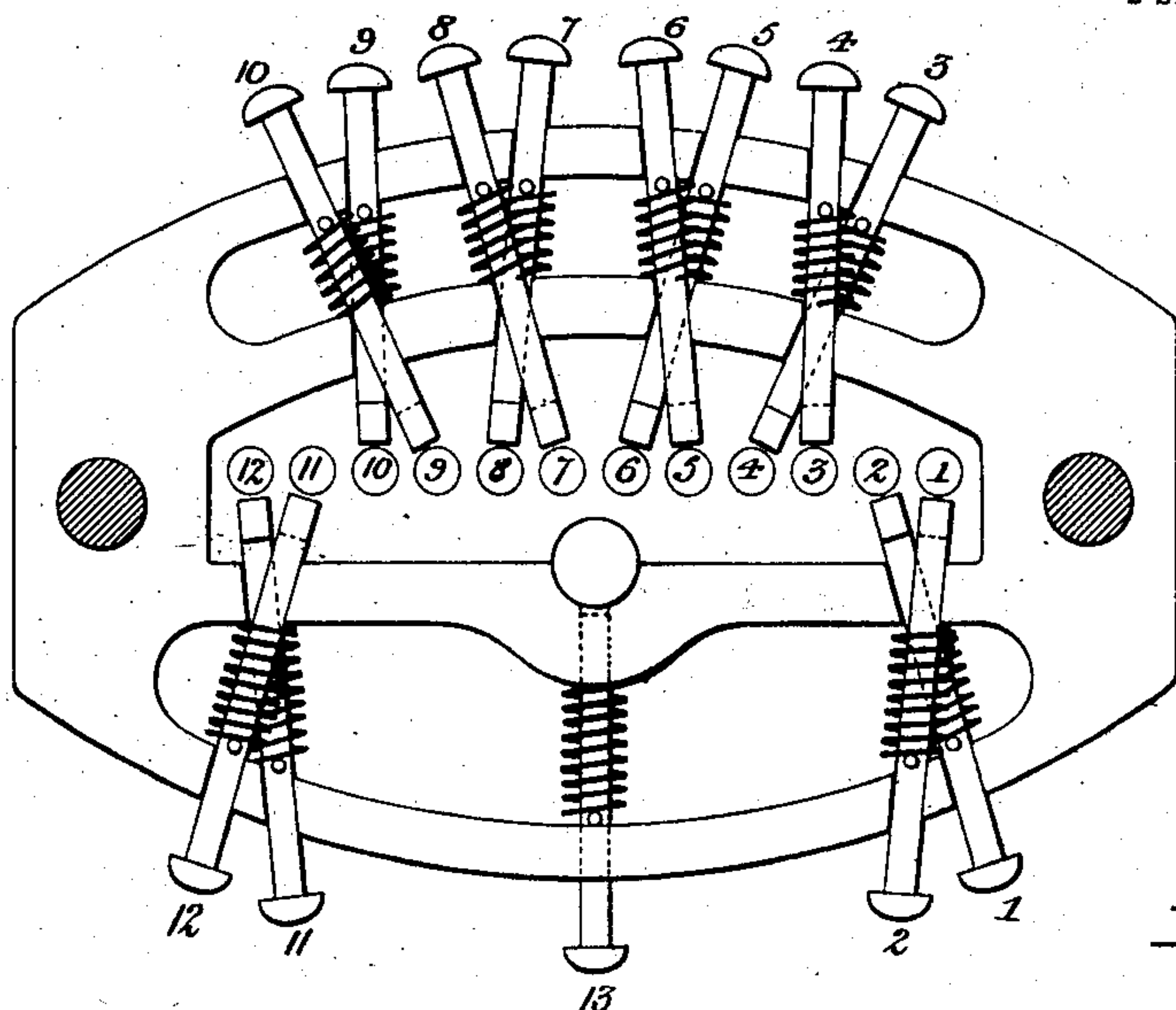


Fig. 7.

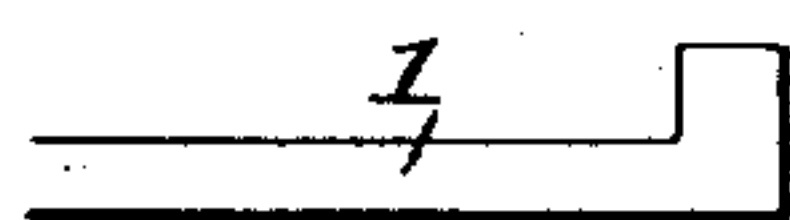


Fig. 8.

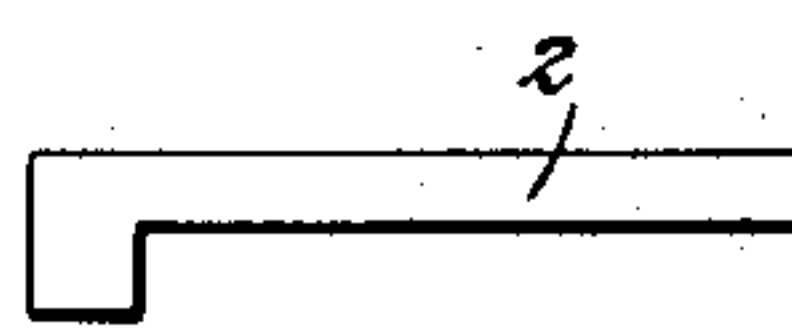
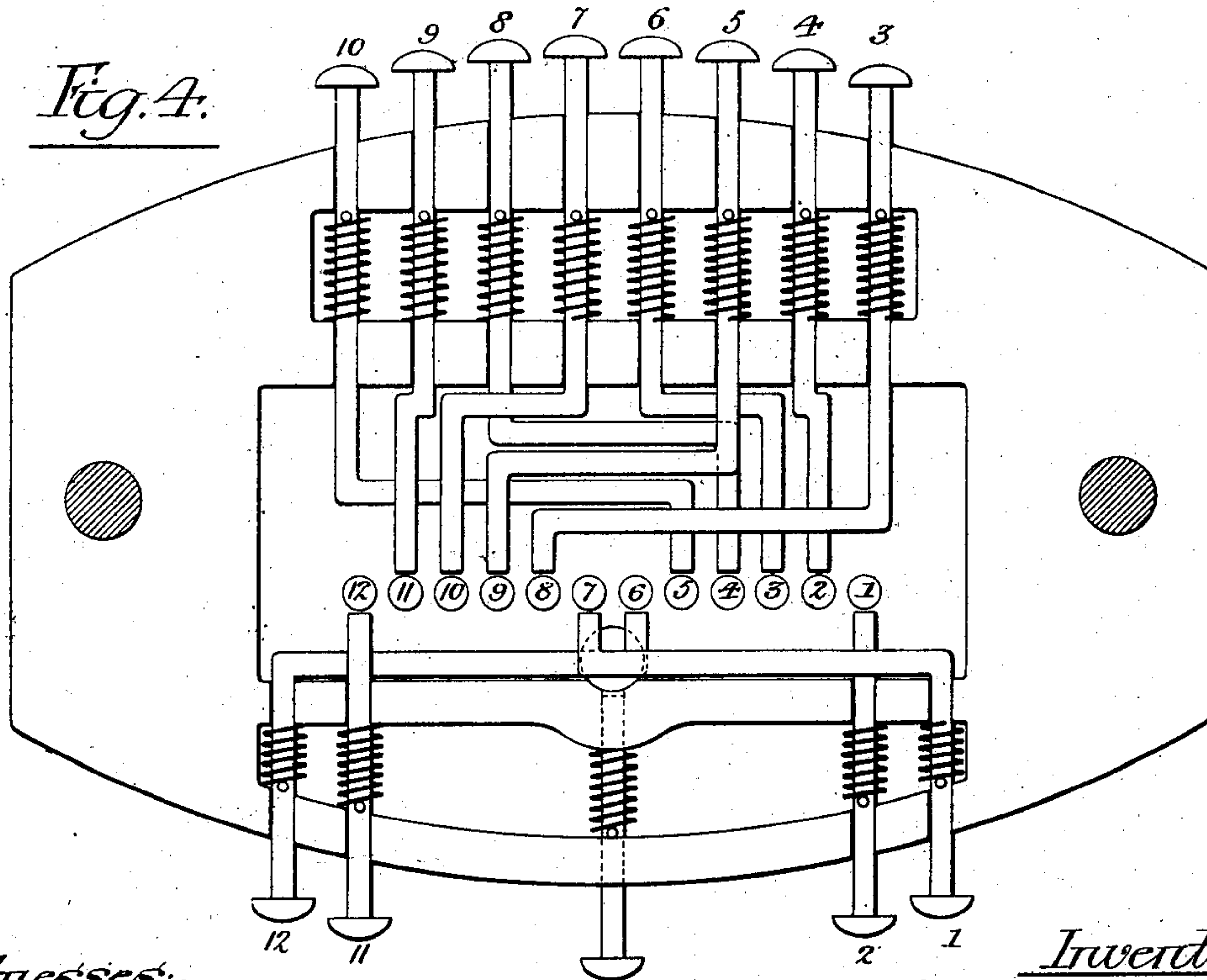


Fig. 4.



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2 SHEETS—SHEET 2.

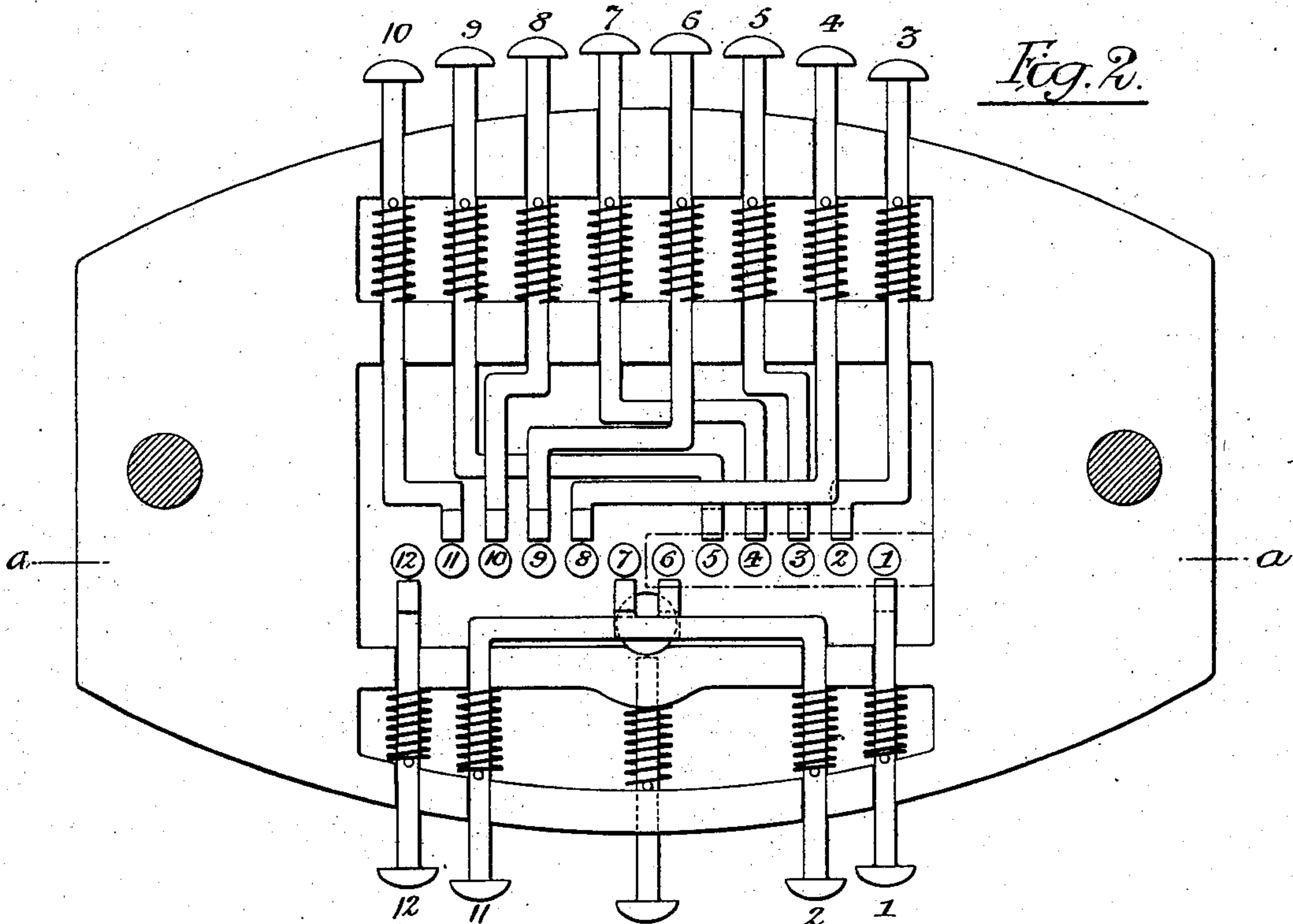


Fig. 2.

Fig. 3.

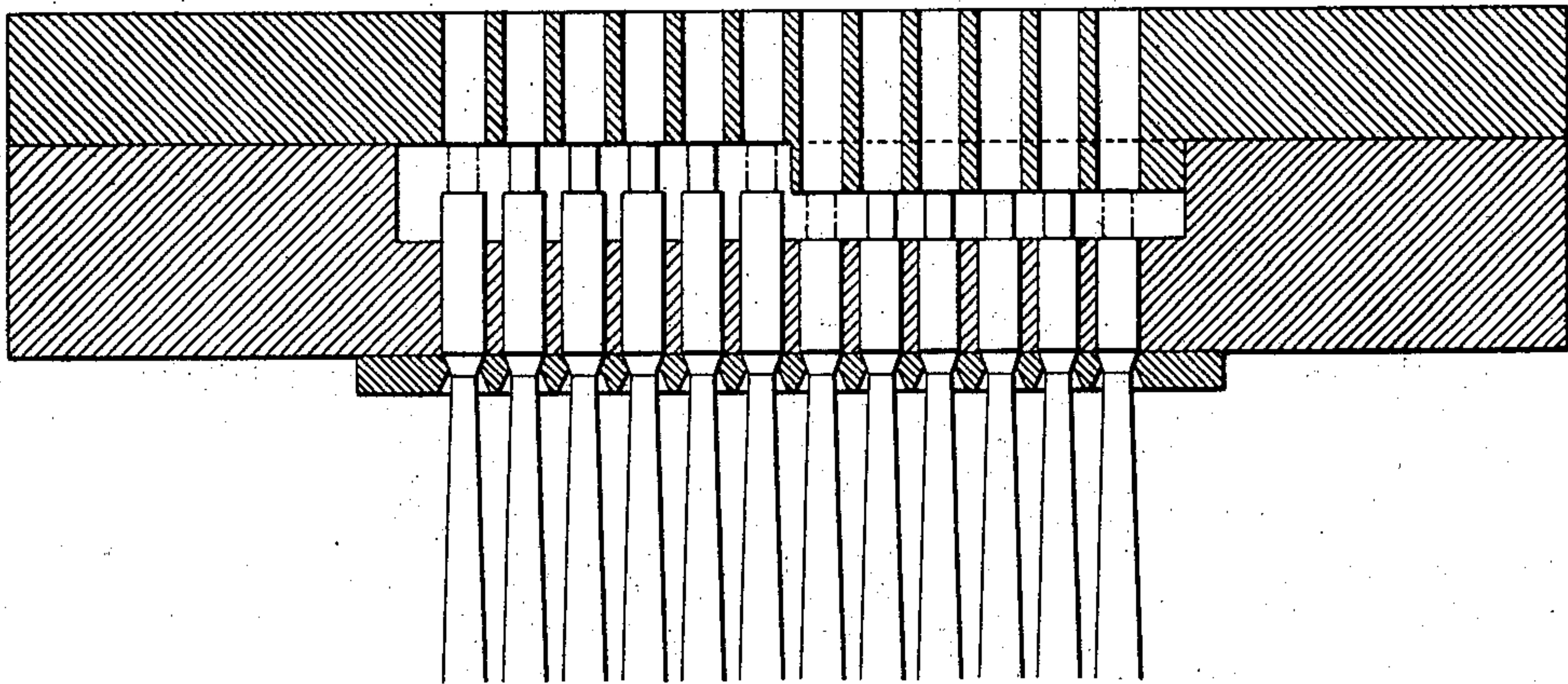


Fig. 3.



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Fig. 6.

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UNITED STATES PATENT OFFICE.

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

JACQUARD-CARD-STAMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 747,918, dated December 22, 1903.

Application filed March 19, 1903. Serial No. 148,604. (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 Jacquard-Card-Stamping Machines, of which the following is a specification.

My invention relates to a machine for punching or stamping cards to be used in connection with a jacquard-machine of the character set forth in an application for patent filed by me of even date herewith, as a division of my application for patent, Serial No. 137,815, filed January 5, 1903, the object of the present invention being to permit of the ready production of cards to be used in connection with said jacquard-machine in the ordinary way—that is to say, with the presentation of a card for each pick of the loom instead of presenting the same card for two successive picks.

In the accompanying drawings, Figure 1 is a sectional plan view of sufficient of a card-stamping machine to illustrate one embodiment of my invention. Fig. 2 is a similar view illustrating another embodiment of the same. Fig. 3 is a transverse section on the line *a a*, Fig. 2. Fig. 4 is a view illustrating a still different embodiment of the invention. Figs. 5 and 6 are views showing the variation in the punching required in cards intended, respectively, for the first and second lifts of the machine; and Figs. 7 and 8 are views illustrating certain keys employed in connection with the machine shown in Fig. 1.

The jacquard-machine forming the subject of my above-noted application for patent was what is known as a "double-lift" machine, in which by a peculiar combination of griff-bars, hooks, needles, and harness-cords either a like or a different shedding of the warps could be effected on successive lifts of the machine and without intermediate change of card, like shedding being effected on splits, and a reverse shedding on pairs.

"Splits," as that term is here used, refers to a combined blank and punched space comprising a pair in a row on the card, and

"pairs" is a term referring to two blank spaces or two punched spaces together.

In order to adapt this machine for the use of cards operated in the ordinary way—that is to say, with a different card for each operation of the machine—the punching of the cards for the second lift will have to be different from the punching of the cards for the first lift, said second-lift cards being similar to the first on splits, but the reverse of the first on pairs. In order that these cards can be punched without the necessity of the operator bearing this distinction in mind, and therefore without the close attention which would otherwise be necessary, I have devised the card-punching machine shown in the drawings. This machine is similar to the ordinary card-punching machine, except in the relation to each other of the punches and the keys which control the operation of the same. Hence no general description of the card-punching machine and its operation will be necessary, and I will therefore confine my description to the specific novel relation of punches and keys.

The machine has in front keys 1, 2, 11, 12, and 13 to be operated by the thumbs and at the rear keys 3 to 10, inclusive, to be operated by the fingers, the keys 1 to 12, inclusive, being those which control the punches whereby the rows of openings are formed in the card for coöperation with the needles of the jacquard-machine and the key 13 controlling a special punch which forms the peg-hole at each end of the card in the usual manner. The keys of both the front and rear portions of the machine are arranged in lineal series and cross each other. Thus in the machine shown in Fig. 1 the keys are arranged in pairs, one key crossing the other, the odd-numbered keys controlling the even-numbered punches and the even-numbered keys controlling the odd-numbered punches. This machine is intended for producing a card for the second lift in a machine of the type shown in Fig. 1 of the drawings of my above-entitled application, the cards for the first lift being cut in the ordinary way.

In a jacquard-machine of the character re-

ferred to the warp-threads corresponding to the twelve spaces in a row on the card are drawn in through the reed in this order: 12 6, 11 5, 10 4, 9 3, 8 2, 7 1.

Fig. 5 represents the punching of the card for the first lift, and Fig. 6 the punching of the card for the second lift.

Reading from the right to the left in Fig. 5 it will be noted that the first of the spaces separated by the dotted lines is a split, the second a punched pair, the third and fourth splits, the fifth a punched pair, and the sixth a split and that in the card for the second lift the splits are similar to those for the first-lift card, and the pairs are reversed—that is to say, blank instead of punched.

In using the machine shown in Fig. 1 for the production of second-lift cards, Fig. 6, the pattern is read reversed. Hence key No. 1 would be read blank, thereby blanking space No. 2 on the card, and key No. 2 would be read punched, thereby punching space No. 1 on the card, while keys 3 and 4 would both be read blank, thereby blanking spaces 3 and 4 on the second-lift card or reversing the cutting for the first lift, these operations being repeated throughout the entire row, so as to reproduce in the second-lift card all of the splits of the first-lift card and reverse all of the pairs of said first-lift card.

In preparing cards for use in connection with a machine of the character shown in Fig. 2 of my former application, in which the pattern is repeated, I use a machine such as shown in Fig. 2 for producing the first-lift card and a machine such as shown in Fig. 4 for producing the second-lift card. In the machines shown in Figs. 2 and 4 all of the odd-numbered keys act upon punches on one side of the center of the head and all of the even-numbered keys act upon punches on the other side of said center. Thus, as shown in Fig. 2, all of the odd-numbered keys act upon punches on the right-hand side of the center and all of the even-numbered keys act upon punches on the left-hand side of the center, and in the machine shown in Fig. 4 this arrangement is reversed, the odd-numbered keys acting upon punches on the left-hand side of the center and the even-numbered keys acting upon punches on the right-hand side of the center.

In cutting the first-lift card, Fig. 5, with the machine of Fig. 2 the pattern will be read straight, and in cutting the second-lift card

with the machine of Fig. 4 the pattern will be read reversed, the result being the same as in the operation of the machine shown in Fig. 1—that is to say, reproducing in the second-lift card all of the splits of the first-lift card and reversing all of the pairs of said first-lift card.

In order to permit the keys to cross one another, as is necessary when they are disposed in the manner described, I locate said keys in two planes one above the other and lengthen those punches which are acted upon by the keys of the upper plane correspondingly in respect to those which are acted upon by the keys of the lower plane, as shown in Fig. 3, the upper section of the stamping-head likewise having its bearing-face disposed in two planes, as illustrated, or in a machine of the character shown in Fig. 1 I can use a stamping-head having its upper bearing-face in the same horizontal plane and enlarge the ends of the keys which act upon the punches, the keys of the lower plane having lugs projecting upwardly, as shown in Fig. 7, and the keys of the upper plane having lugs projecting downwardly, as shown in Fig. 8.

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

1. A jacquard-card-stamping machine having the keys on the front of the head arranged in lineal series and crossed so as to act upon the punches in an order differing from the order of arrangement of the keys.

2. A jacquard-card-stamping machine having the keys on both the front and rear faces of the head arranged in lineal series and crossed so as to act upon the punches in an order differing from the order of arrangement of the keys.

3. A jacquard card-stamping machine having the keys disposed in pairs whose keys cross each other whereby each odd-numbered key will act upon an even-numbered punch and each even-numbered key will act upon an odd-numbered punch, 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.