No. 753,615. PATENTED MAR. 1, 1904.

A. A. NEWMAN.

MARKING WATCHMEN'S CLOCK DIALS.

APPLICATION FILED FEB. 24, 1903.

NO MODEL.

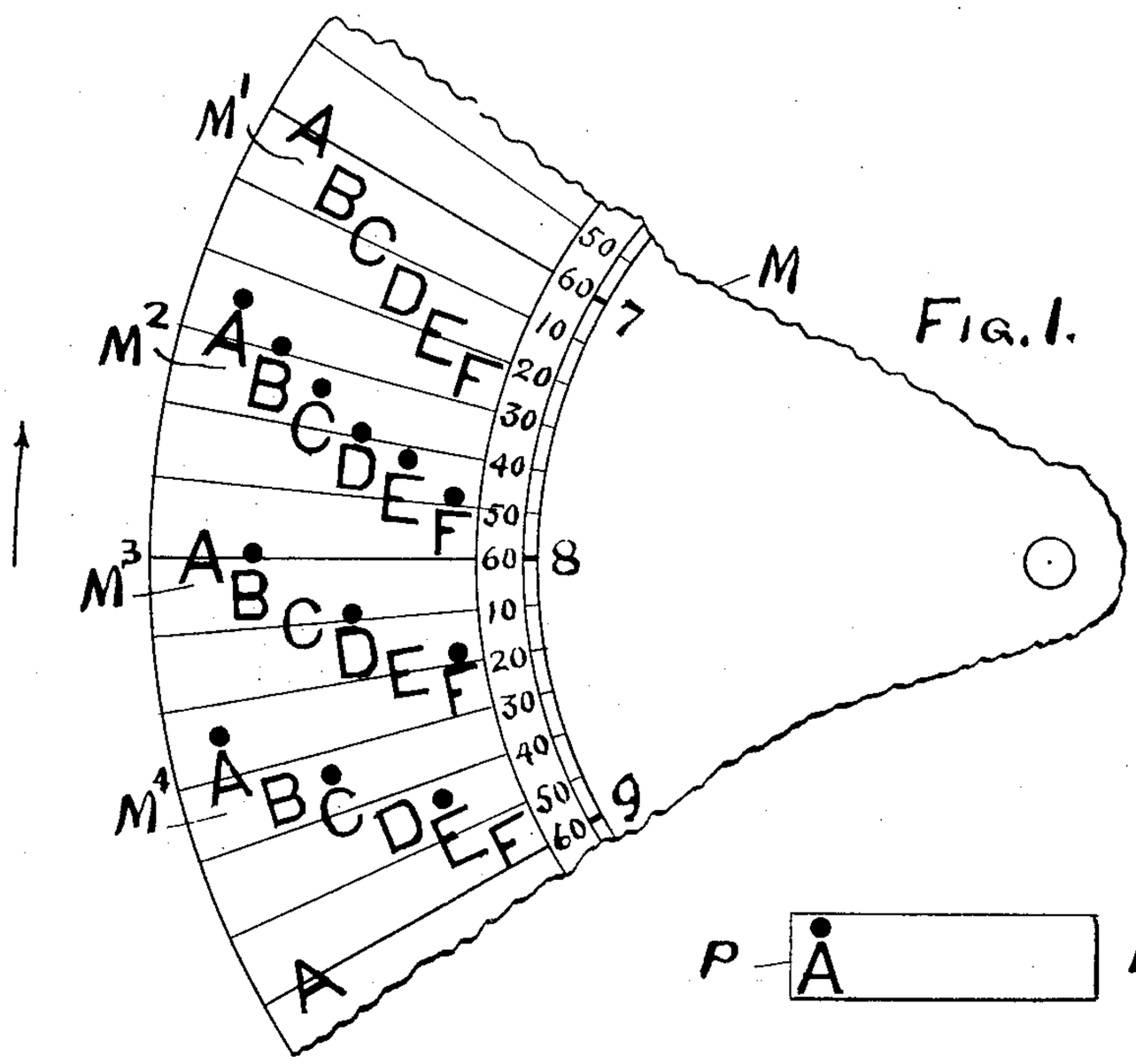

FIG. 1.

FIG. 2.

FIG. 4.

FIG. 3.

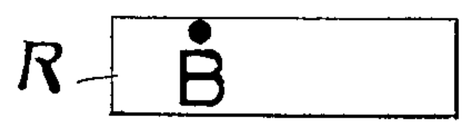

FIG. 6.

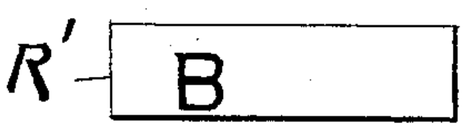

FIG. 5

Witnesses:-
Howard A. Radfield.
Peter Vicker

Inventor
Abraham A. Newman
By Casper L. Redfield
Attorney

No. 753,615. Patented March 1, 1904.

UNITED STATES PATENT OFFICE.

ABRAHAM A. NEWMAN, OF CHICAGO, ILLINOIS.

MARKING WATCHMEN'S-CLOCK DIALS.

SPECIFICATION forming part of Letters Patent No. 753,615, dated March 1, 1904.

Application filed February 24, 1903. Serial No. 144,835. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM A. NEWMAN, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Marking Watchmen's-Clock Dials, of which the following is a specification.

My invention relates to marking the dials of watchmen's clocks, and has for its object the production of a process or system by which the number of stations indicated may be increased without at the same time increasing the number of marks or the number of positions used on the dial.

The invention is particularly applicable to the marking of the dials of portable watchmen's clocks of the kind illustrated in my Patent No. 676,764, dated June 18, 1901. In clocks of this kind a properly-printed dial is rotated by the clock mechanism over a stationary matrix-plate in which are a series of female characters. At different stations along the route which a watchman is required to travel are located keys having male characters adapted to coöperate with the female characters of the matrix. For example, if the characters in the matrix are "A, B, C," &c., the key at the first station will have the character "A" so located on its body that it will coöperate with the character "A" of the matrix to emboss "A" at a predetermined radius on the rotating dial. At the second station the key will have the character "B" so located that it will coöperate with the character "B" of the matrix and correspondingly emboss that character on the dial at its proper radius. At the third station the key will have the character "C" and at other stations the keys will have characters corresponding to the characters in the matrix-plate which is attached to the clock and which is carried around from station to station.

It will be evident that by increasing the number of characters on the matrix-plate any number of stations may be indicated on the dial; but a time comes when a further increase of characters results in an unduly-long matrix-plate and a clock too large and cumbersome to be conveniently carried by a watchman. To meet this condition, I have recourse to the process of marking at a given place on the dial a complete or a partial character, the complete character indicating one station and the partial character indicating another station. By arranging the stations in a certain definite sequence I am able to use either a complete or a partial character for more than one station, the particular station indicated being determined by whether the immediately preceding or succeeding station is represented by a complete or a partial character.

In carrying out this invention I prefer to make a complete character a compound one and a partial or incomplete character one of the parts of the compound character.

In the accompanying drawings, Figure 1 is a portion of a dial adapted for use with a six-character matrix-plate and marked to represent twenty-four stations arranged so as to be five minutes apart on the route of the watchman. Fig. 2 is a face view of the matrix-plate used in connection with the dial; and Figs. 3 to 6 are face views of the keys used with the first and second characters of the matrix-plate, the other portions of the keys being omitted as immaterial to the present case.

In the said drawings, M represents a paper dial rotated by a clock mechanism in the direction of the arrow and lying closely adjacent to the face of the matrix-plate N. The keys P P′ R R′ engage the opposite side of the paper and emboss it by forcing it into the characters in the matrix-plate.

In the present case the characters of the matrix-plate are the first six characters of the alphabet, each of which is provided with a dot over it. The keys at the first six stations have the first six characters of the alphabet, but without the dots, and hence are partial or incomplete characters. The keys at the second six stations are the same letters with dots over them, and hence are complete characters. The keys at the third six stations are alternate partial and complete characters, beginning with a partial and ending with a complete character. The keys at the fourth six stations are also alternate partial and complete characters, but begin with a complete character and end

with a partial one. At five-minute intervals between stations this route would require two hours for the watchman to cover, at the end of which he would return to the beginning and repeat the series in going over the route again.

The marks produced by the first six keys are shown at M′, those for the second six keys at M^2, those for the third six keys at M^3, and those for the fourth six keys at M^4. An inspection of the marked dial, as shown in Fig. 1, indicates that all of the stations have been visited in their regular order and that the watchman did not repeat on the first or second six stations until after he had been to the third and fourth six stations. The character of the series shows at a glance that the regular order cannot be departed from by the watchman without the record indicating that fact. The printing on the dial also indicates the time at which the different stations were visited.

In Fig. 4 the complete character is shown on the face of the key P at a position on that face which corresponds to the position of the same character in the matrix-plate. In the clock suitable means is provided to cause the face of the key to register with the face of the matrix-plate, so that the character on P will properly coöperate with its mate in the matrix-plate N. The incomplete or partial character occupies the same relative position on the key P′ that the complete character does on the key P. Likewise the second complete and incomplete characters occupy corresponding positions, as shown in keys R and R′. Other keys have their complete and incomplete characters similarly placed.

The characters shown are letters with dots over them. They may, however, be figures in the form of fractions or characters of any other kind that are divisible into two or more parts. When a complete character consists of three parts, the part embossed may consist of any of those parts, any two of the parts taken together, or all three of the parts.

What I claim is—

1. The combination with a dial adapted to be rotated about its axis, of a series of dies arranged to mark said dial at different radii, the number of different dies being greater than the number of different radii at which they mark said dial, and the dies marking said dial at any particular radius being of a similar character but different from each other in that one die will mark the whole of the character while another die will mark only a part of the character.

2. The combination with a dial adapted to be rotated about its axis, of a series of dies arranged to mark said dial at different radii, each die having a distinct character so that the mark made at any one radius will differ from the marks made at other radii, a second series of dies each of which has a character of a kind similar to the character of the corresponding die of the first series and which is arranged to mark the dial at the same radius, and means by which each die of one series will mark on the dial at the proper radius the complete outline of the character peculiar to that radius while each die of the other series will mark on the dial only a part of the outline of the same character.

3. The combination with a matrix-plate having a series of characters formed therein, and a dial adapted to be moved over the face of the matrix-plate, of a series of dies arranged so that two or more of them coöperate with each character in said matrix-plate to mark said dial, one of the dies for each character being arranged so that it will mark the dial with the complete outline of that character while another die for the same character will mark the dial with only a part of the outline of that character.

4. The combination with a dial arranged to be rotated about its axis, and a matrix-plate having a series of characters formed therein, said matrix-plate being supported so that its different characters will lie at different distances from the center of the dial, of a die for each character, said dies being so constructed that they will mark upon the dial a part only of the corresponding characters in the matrix-plate.

Signed at Chicago, Illinois, this 19th day of February, 1903.

ABRAHAM A. NEWMAN.

Witnesses:
HELEN C. FLAGG,
CASPER L. REDFIELD.