(No Model.)

P. G. RUSSELL.

TIME PIECE.

No. 304,281. Patented Aug. 26, 1884.

Fig. 1.

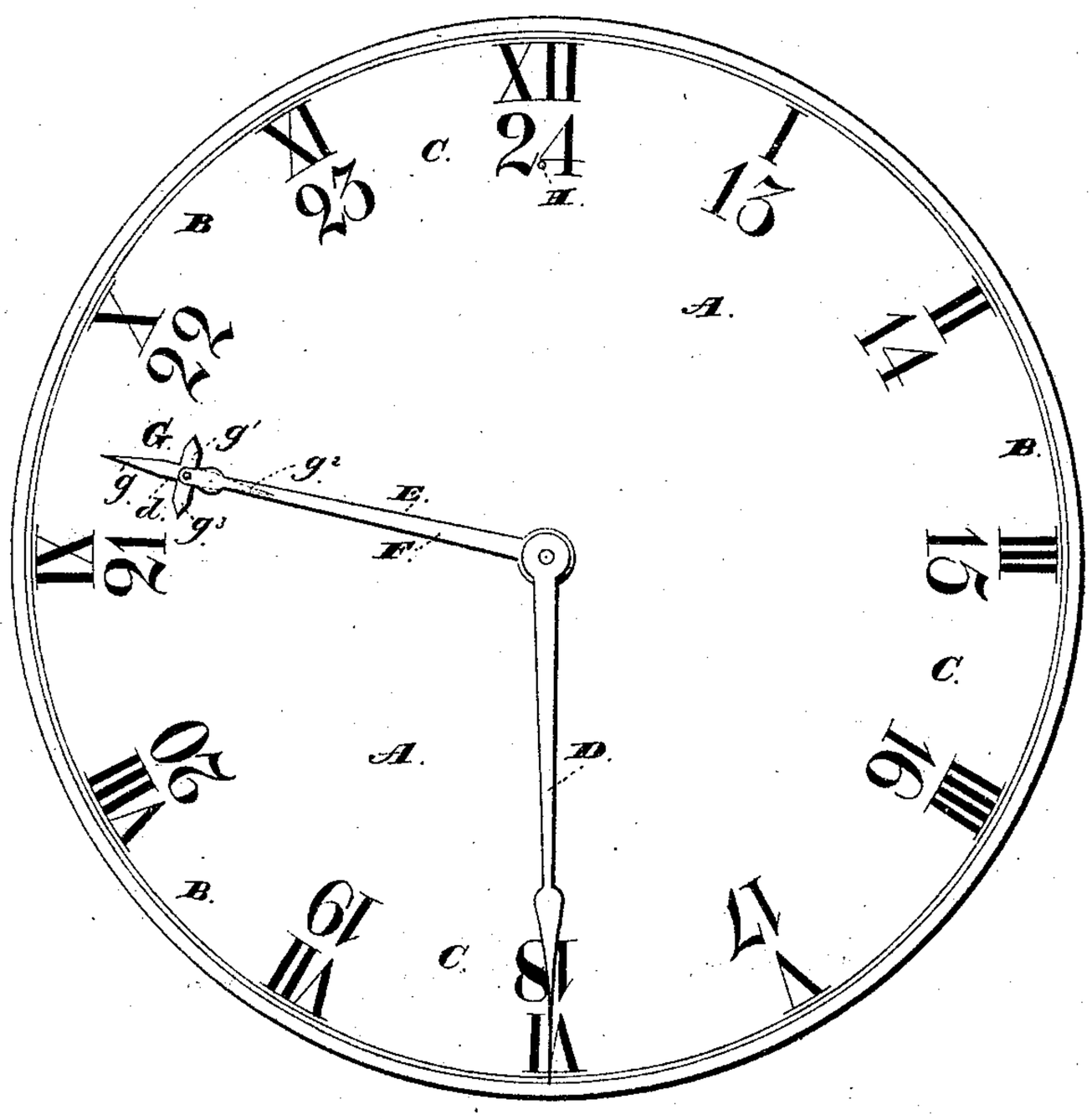

Fig. 2.

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UNITED STATES PATENT OFFICE.

PHILIP G. RUSSELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

TIME-PIECE.

SPECIFICATION forming part of Letters Patent No. 304,281, dated August 26, 1884.

Application filed December 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, PHILIP G. RUSSELL, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Clocks and Watches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure I shows a plan view of my improved hour-hand for clocks and watches as applied to or operating in connection with the form of dial to which it is especially adapted; and Fig. II, a similar view of a portion of the dial and the outer end of the hour-hand, showing the position of the arms of the turn-piece after the hand as shown in Fig. I has passed the pin on the dial.

In the drawings, A designates the dial-face of a clock or watch. Inside the circle B of the ordinary twelve-hour graduations is a concentric circle of graduations, C, to indicate the hours from thirteen to twenty-four, inclusive. The graduation-marks of the inner circle are on the same radii with those of the outer or ordinary circle. The one which is on the same radius with the one-hour mark is numbered 13, and the rest are consecutively numbered from that up to 24. The minute-hand D is of the ordinary form and length, and travels over the outer circle of graduations as usual. The hour-hand E consists of the arm F, attached to and carried by the usual hour-hand sleeve. This arm extends to or nearly to the inner circle of graduations, as shown in the drawings. At the end of said arm is pivoted a turn-piece, G, having the four arms g, g', g^2, and g^3 extending from it at right angles to each other. The arms g and g^2 are, as shown, longer than arms g' and g^3. The sides of the arms near where they intersect are, as shown at d, made straight for a short distance. The outer ends of the arms are reduced in size or tapered to points. On the dial-face is fixed a stop-pin, H, in such a position that, while the end of the arm F will clear it, one of the arms, g, of the turn-piece G will strike it, and, as the hour-hand moves on, will be held back and turned down by said pin, so that the turn-piece will be turned to bring the next arm, g', up into line with arm F, as shown in Fig. II. The long arm g of the turn-piece, as shown in Fig. I, before it has come into contact with the pin, extends beyond the inner circle of graduations, so as to indicate the hours on the outer circle. When this long arm has been turned down, as described above, and the short arm g' brought up into line with the main portion of the hour-hand, the point or end of said short arm will indicate the hours on the inner circle of graduations. Thus a continuous indication of the hours from one to twenty-four, inclusive, is obtained without any change in the time-train or dial-wheels. When the hour-hand has arrived at the twenty-four-hour mark on the inner graduated circle, the short arm g' strikes against the pin H, is held back as arm g was, and turned down, so that the long arm g^2 is brought up to take its place in line with the main portion F of the hand. Time will then be indicated on the outer graduated circle again. At the end of the circuit of the hour-hand around the dial this arm g^2 strikes against and is turned down by the pin H, so that the other short arm, g^3, of the turn-piece is brought up into position to act as an index-point. At the end of its travel, to indicate the hours on the inner circle of graduations, arm g^3 is in turn engaged by the pin, so that the turn-piece G is again turned a quarter-revolution, and arm g is again brought up into position, as described, and as shown in Fig. I.

The turn-piece, it will be observed, is balanced, so that there is no liability of its being turned upon its pivot by any jar. The opposite arms are of equal weight and size. The piece can be pivoted upon the top of the end of the arm F, or on the under side thereof; but I prefer the latter arrangement, as shown in the figures.

A hand like mine can obviously be constructed with a greater number of arms than shown in the drawings, so as to be capable of use as an indicator in connection with a larger number of concentric dials than two.

By my invention I make it possible to readily and cheaply change the clocks and watches now in use so that they will indicate time on the twenty-four-hour system, as no change in the dial-wheels or time-train is necessary. All that is necessary is to put the inner circle of figures on the dial and substitute my hour-

hand, and fix the stop pin in position on the dial-face.

This application I file as a division of the one filed by me November 20, 1883, No. 112,303.

Having thus described my invention, what I claim is—

1. A clock-hand for use in connection with concentric dials adapted to change its indications from one dial to another at each revolution of the hand continuously, substantially as shown and described.

2. An indicator-hand for use with concentric dials, consisting of the main arm having pivoted thereon a pointer-head having points of different lengths adapted to indicate successively upon the different dials as the head is turned, substantially as and for the purpose described.

3. The clock-hand adapted to indicate time alternately upon two or more concentric dials, in combination with means for automatically causing it to change from one dial to the other and back again, substantially as and for the purpose described.

4. In combination with a clock or watch dial-face having two concentric dials or circles of graduations, one showing the hours up to twelve and the other the hours from thirteen to twenty-four, inclusive, an hour-hand adapted to indicate the time first on one of these dials and then on the other, and means for changing its index end from one dial to the other and back again automatically, substantially as and for the purpose described.

5. The hour-hand for a watch or clock provided at or near its outer end with a pivoted turn-piece having alternately short and long arms, substantially as and for the purpose described.

6. In combination with the main portion or arm of the hour-hand of a watch or clock, the four-armed turn-piece, with alternately long and short arms pivoted at or near the end of such main portion or arm, substantially as and for the purpose described.

7. In combination with the clock or watch dial-face provided with concentric dials or circles of graduations, one showing the hours from one to twelve and the other from thirteen to twenty-four, inclusive, the hour-hand consisting of the main arm carrying on its outer end a pivoted turn-piece having four alternately long and short arms, and means for rotating the turn-piece through a quarter-revolution each time that the hand arrives at the twelve or twenty-four mark on the dial, so as to bring the arms of the turn-piece successively up into line with the main portion of the hand to act as an index point or end of the hand, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of December, 1883.

PHILIP G. RUSSELL.

Witnesses:
D. P. COWL,
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