

Nov. 26, 1935.

R. H. WHITEHEAD

2,022,263

CLOCK AND METHOD OF MAKING SAME

Filed Nov. 30, 1934

2 Sheets-Sheet 1

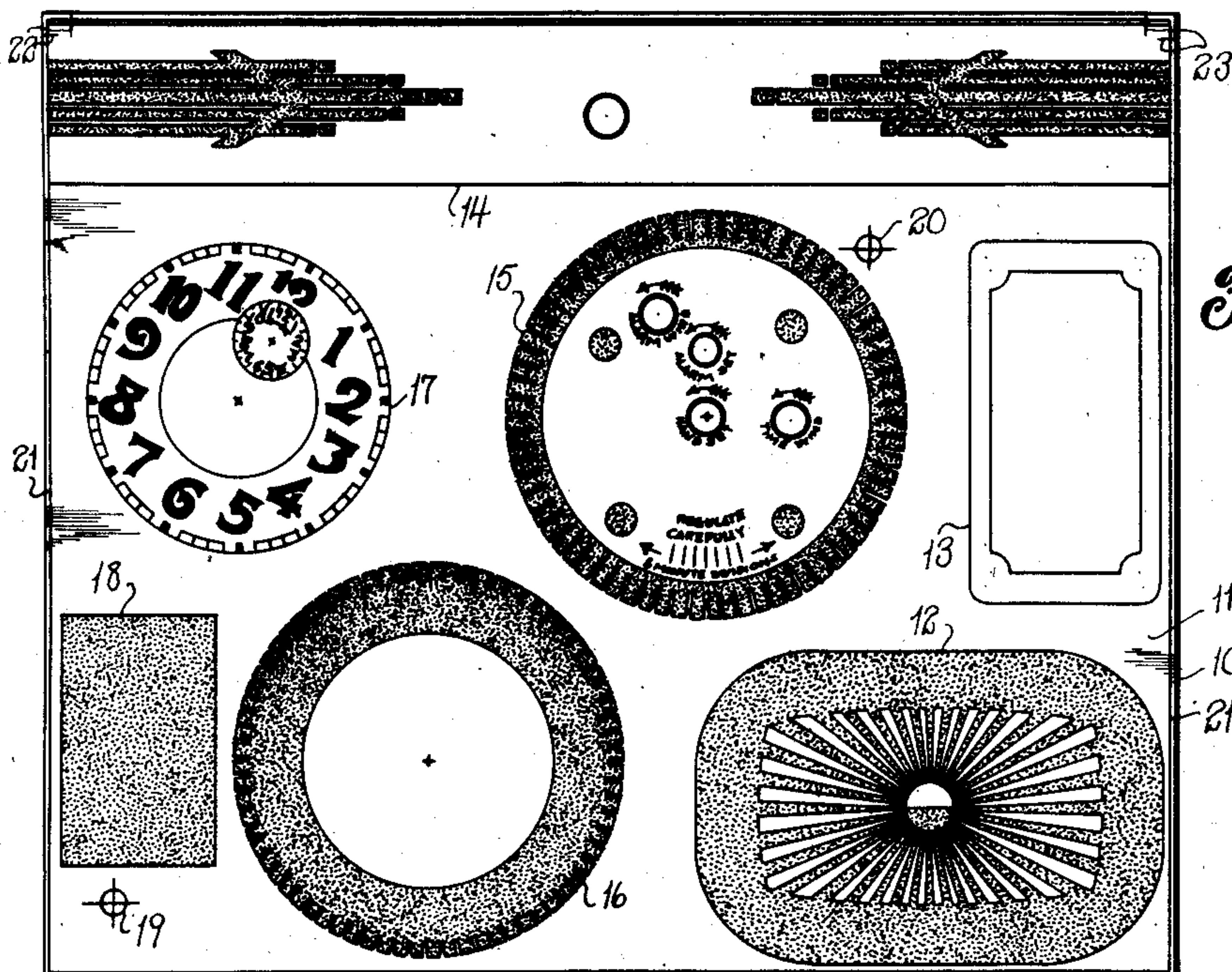


Fig. 1.

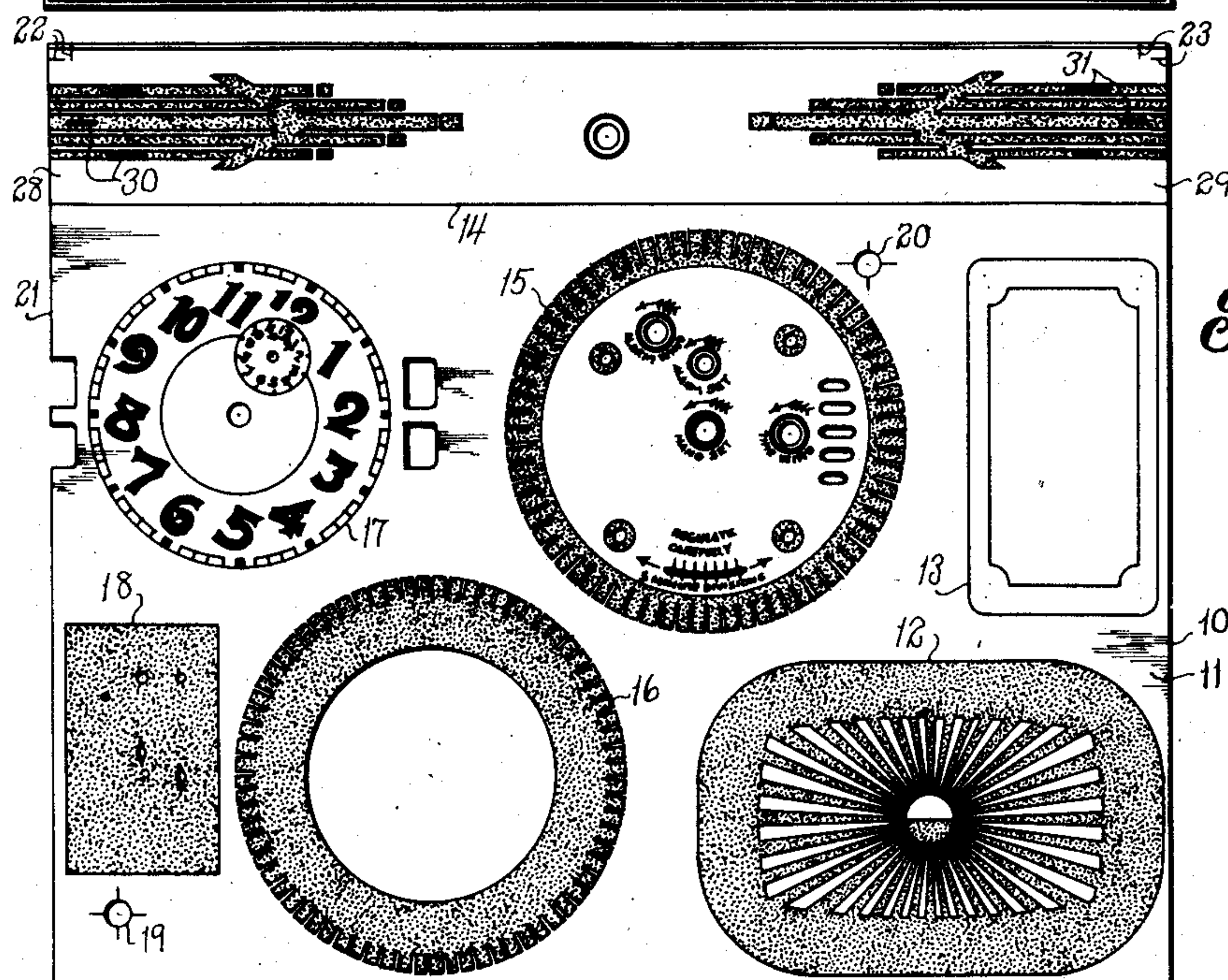


Fig. 2.

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2 Sheets-Sheet 2

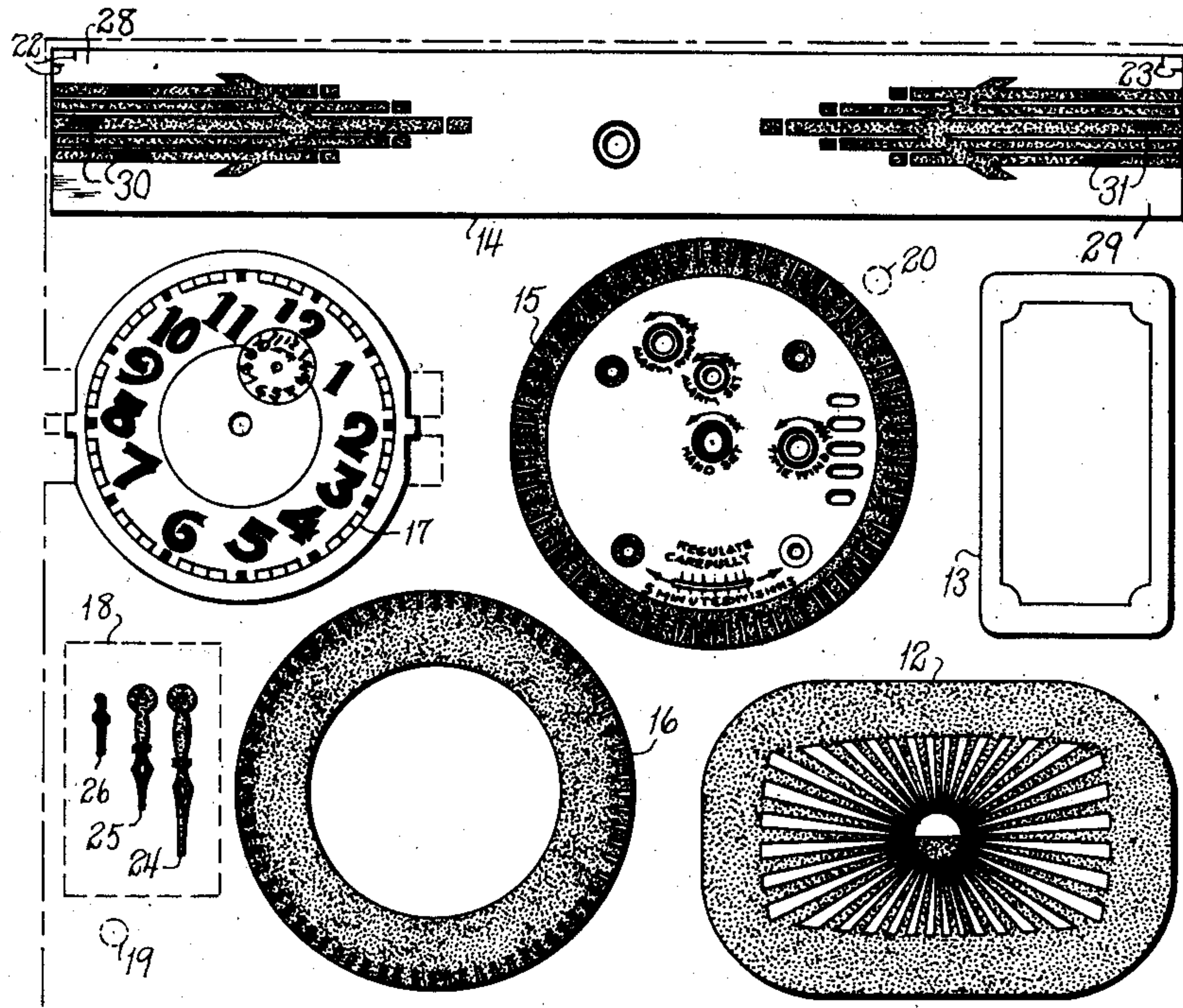


Fig. 3.

Fig. 4.

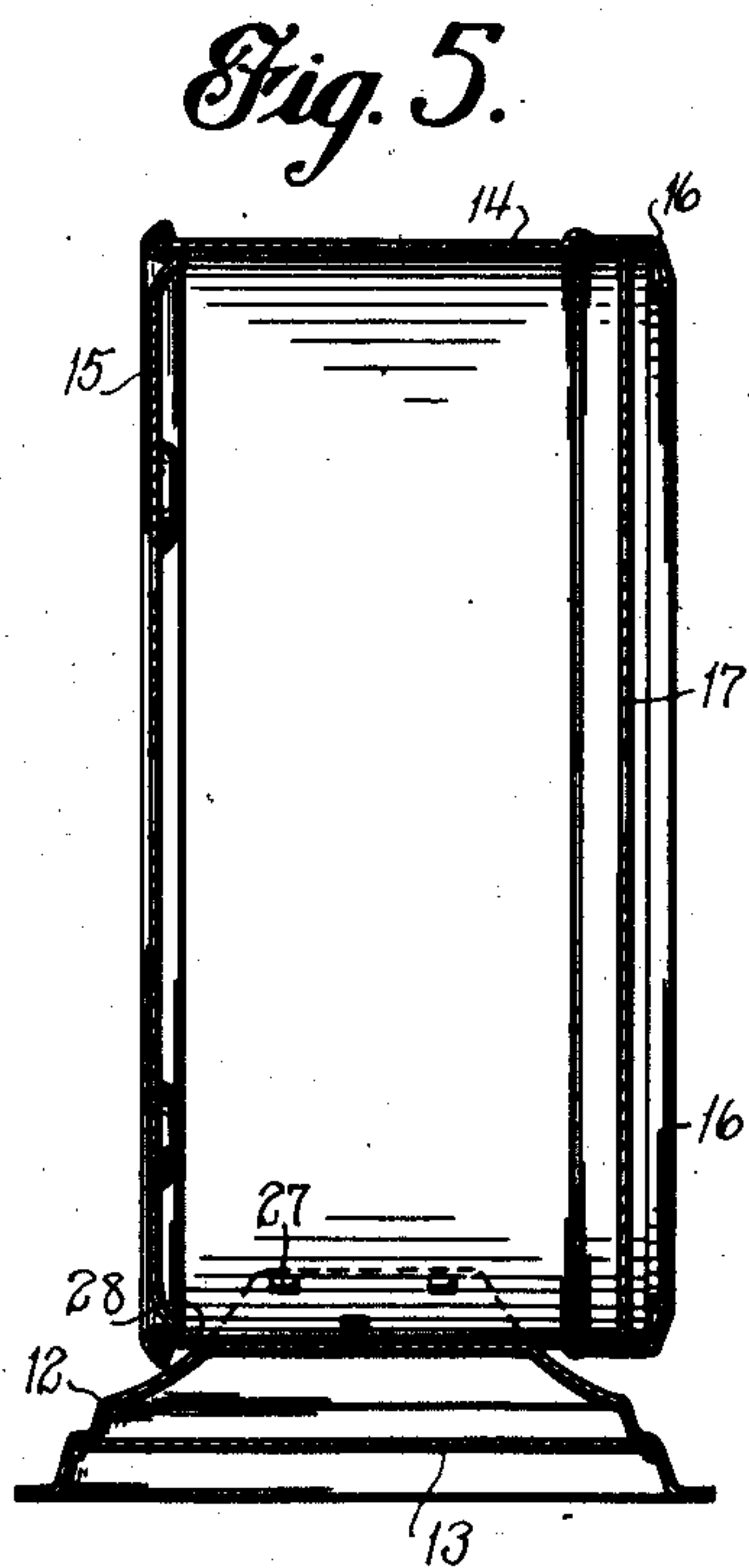


Fig. 5.

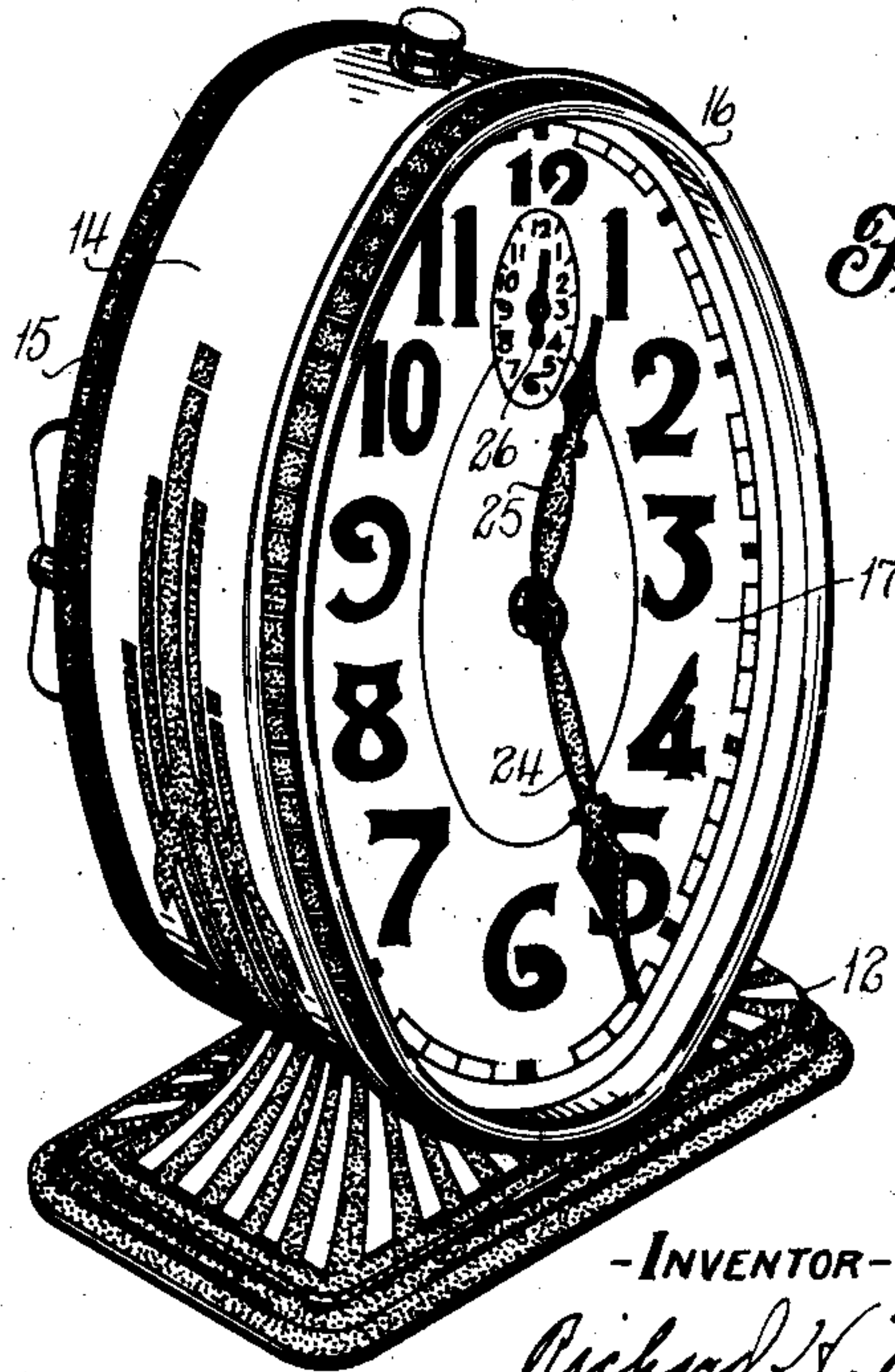


Fig. 6.

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## UNITED STATES PATENT OFFICE

2,022,263

## CLOCK AND METHOD OF MAKING SAME

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Application November 30, 1934, Serial No. 755,296

7 Claims. (Cl. 113—116)

This invention relates to clocks and methods of making the same.

One object of this invention is to provide a more efficient way of making clock parts in order to decrease the cost of production of them.

With the above and other objects in view, this invention includes all improvements over the prior art which are disclosed in this application.

In the accompanying drawings, in which one way of carrying out the invention is shown for illustrative purposes:

Fig. 1 is a face view of a blank of sheet metal, having applied thereto surface-color material for clock parts;

Fig. 2 is a view similar to Fig. 1, but with a piercing operation having been performed to punch out holes in the blank of sheet-metal;

Fig. 3 is a view similar to Fig. 2, but showing the various clock parts punched entirely free from the original metal sheet, and laid in the normal positional relation they occupy at the instant of being punched from the sheet, the original sheet being indicated by broken lines;

Fig. 4 is a perspective view of the clock-base;

Fig. 5 is a vertical central sectional view of the clock-case parts and dial shown in assembled relation; and

Fig. 6 is a perspective view of a complete clock, the case, dial and hands of which are made from parts shown in Fig. 3 after certain of the parts have been subjected to suitable forming operations.

In the following description and claims, the various steps and parts are identified by specific names for convenience, but they are intended to be as generic in their application as the prior art will permit.

Referring to the drawings, 10 is a sheet-metal blank which may first be given an all-over coat 11 of any suitable desired color of flexible-color material, such as varnish or lacquer materials, which will sufficiently withstand the effect of metal-distorting forming operations to which certain of the parts will be subjected in manufacture. After the color material 11 is applied and dried, the blank 10 then has applied thereto, for example by lithographing, color material of one or more plainly different colors from the main color 11.

The lithograph color or colors, in the form of the invention illustrated in the drawings, is applied to form ornamentation and outline of the base 12, ornamentation and outline of the base-filler 13, ornamentation and outline of the case-band 14, ornamentation and indicia of the

case-back 15, ornamentation and outline of the bezel 16, indicia of the dial 17, a color area 18 from which the clock-hands are to be made, circles 19 and 20 which when punched from the sheet 10 are to serve as pilot or locating-holes, a border outline 21 which is to serve as a guide for trimming the sheet-blank 10, and register or location-marks 22 and 23 which are to serve for the initial locating of the sheet in position for the piercing or first punching operation.

The lithographed sheet-metal blank 10 illustrated in Fig. 1 is first subjected to an edge-trimming operation, which removes the portion outside of the border 21, whereupon the trimmed sheet is placed in position in a suitable gang-press with the register-marks 22 and 23 suitably registering with corresponding marks on or adjacent one of the dies of the gang-press, whereupon the first piercing or punching operation takes place to punch out the holes illustrated in Fig. 2. Then the blank in the condition shown in Fig. 2, is subjected to the action of a press having gang-blank-out dies which punch out, at one operation, the various clock-part blanks previously described, and also punch out the three hand-blanks 24, 25 and 26.

The base-blank 12 is then subjected to a metal-distorting forming operation to form the blank up to the form shown in Fig. 4, and a piercing operation to provide the integral struck-up tongues 27.

The case-back blank 15 is also subjected to suitable metal-distorting forming operations and is joined to the case-band blank 14, after the latter is rolled up to the usual form, in a usual and well-known manner.

The bezel-blank 16 is also subjected to a metal-distorting forming operation of usual type.

When the opposite ends 28 and 29 of the case-band are brought adjacent each other, when rolled up to form, the punched-out slots 30 adjacent one end and the punched-out slots 31 adjacent the other end, will come in position, so that the struck-up tongues 27 of the base will extend upwardly through the slots 30 and 31 and permit the tongues 27 to be flattened down against the case-band to maintain the base 12 firmly assembled with the case-band 14.

By making clocks as herein disclosed, it will be observed that complicated ornamentation and indicia for various clock parts can all be formed by either one or more lithographing steps, depending on whether one or more lithograph colors are desired, after which the clock parts can be punched out, and such as necessary, sub-



jected to a forming operation, to economically produce a highly-ornamented clock at exceedingly-low cost.

It will be observed, for example, that in order to produce the base alone in the form shown in Fig. 4, by producing the color ornamentation thereon after the metal-distorting forming operation has been performed, would be a costly proceeding. Not only is this costly proceeding avoided, but at the same time the base ornamentation is applied, ornamentation is also applied for other parts of a clock.

It will also be observed that inasmuch as the clock parts on a given sheet blank are dissimilar and of a number suitable for a single clock, no counting operations are at all necessary in the production of the various parts, inasmuch as this method of manufacture automatically produces the proper quantity of the various parts that are needed for manufacturing any desired quantity of clocks.

By having the color material that is applied to the sheet blank of suitable flexibility, the various metal-distorting forming operations can be performed without substantially impairing the finished appearance of the various parts.

The invention may be carried out in other specific ways than that herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiment is therefore to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. The method of making clock parts including: applying flexible surface-color material of varnish, lacquer, or the like on a surface of a sheet of sheet-metal; cutting one or more clock-part blanks from said sheet; and subjecting at least a substantial part of said surface-color applied part of one or more of said clock-part sheet-metal blanks to one or more metal and surface-color distorting forming operations.

2. The method of making clock parts including: applying flexible surface-color ornamenta-

tion and indicia material of varnish, lacquer, or the like on a surface of a sheet of sheet-metal; cutting one or more clock-part blanks from said sheet; and subjecting at least a substantial part of said surface-color ornamented part of one or more of said clock-part sheet-metal blanks to one or more metal and surface-color distorting forming operations.

3. The method of making clock parts including: applying flexible surface-color material of varnish, lacquer, or the like on a surface of a sheet of sheet-metal at places for dissimilar clock-part blanks; then piercing portions for at least certain of said blanks; then cutting said blanks from said sheet; and then subjecting at least a substantial part of said surface-color applied part, of at least certain of said clock-part sheet-metal blanks, to one or more metal and surface-color distorting forming operations.

4. The method of making clock parts including: applying flexible surface-color material of varnish, lacquer, or the like on a surface of a sheet of sheet-metal at places for dissimilar clock-part blanks corresponding to those required for a single clock; then piercing portions for at least certain of said blanks; then cutting said blanks from said sheet; and then subjecting at least a substantial part of said surface-color applied part, of at least certain of said clock-part sheet-metal blanks, to one or more metal and surface-color distorting forming operations.

5. A clock-case including: one or more parts formed from blanks of flat sheet-metal having flexible surface-color of varnish, lacquer, or the like thereon, by one or more metal and surface-color distorting forming operations on at least a substantial part of the surface-color material containing portions of sheet-metal.

6. A clock-parts blank including: a sheet of sheet metal having indicia thereon at places to become parts of dissimilar clock-part blanks.

7. A clock-parts blank including: a sheet of sheet-metal having flexible-color material of varnish, lacquer, or the like thereon at places to become parts of dissimilar clock-part blanks.

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