

No. 864,467.

PATENTED AUG. 27, 1907.

H. C. INGRAHAM.

DIAL.

APPLICATION FILED MAR. 12, 1907.

Fig. 1.

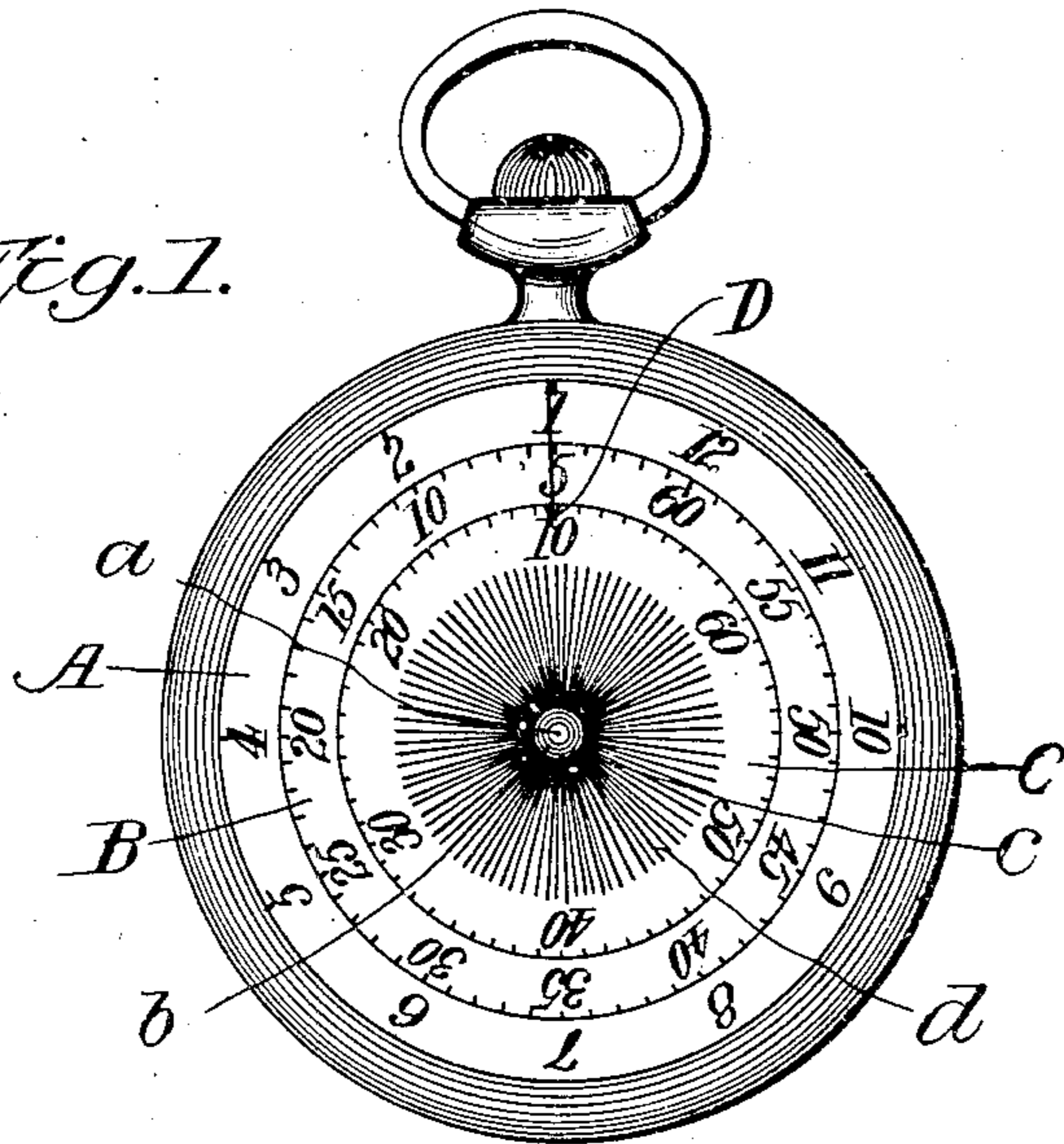


Fig. 2.

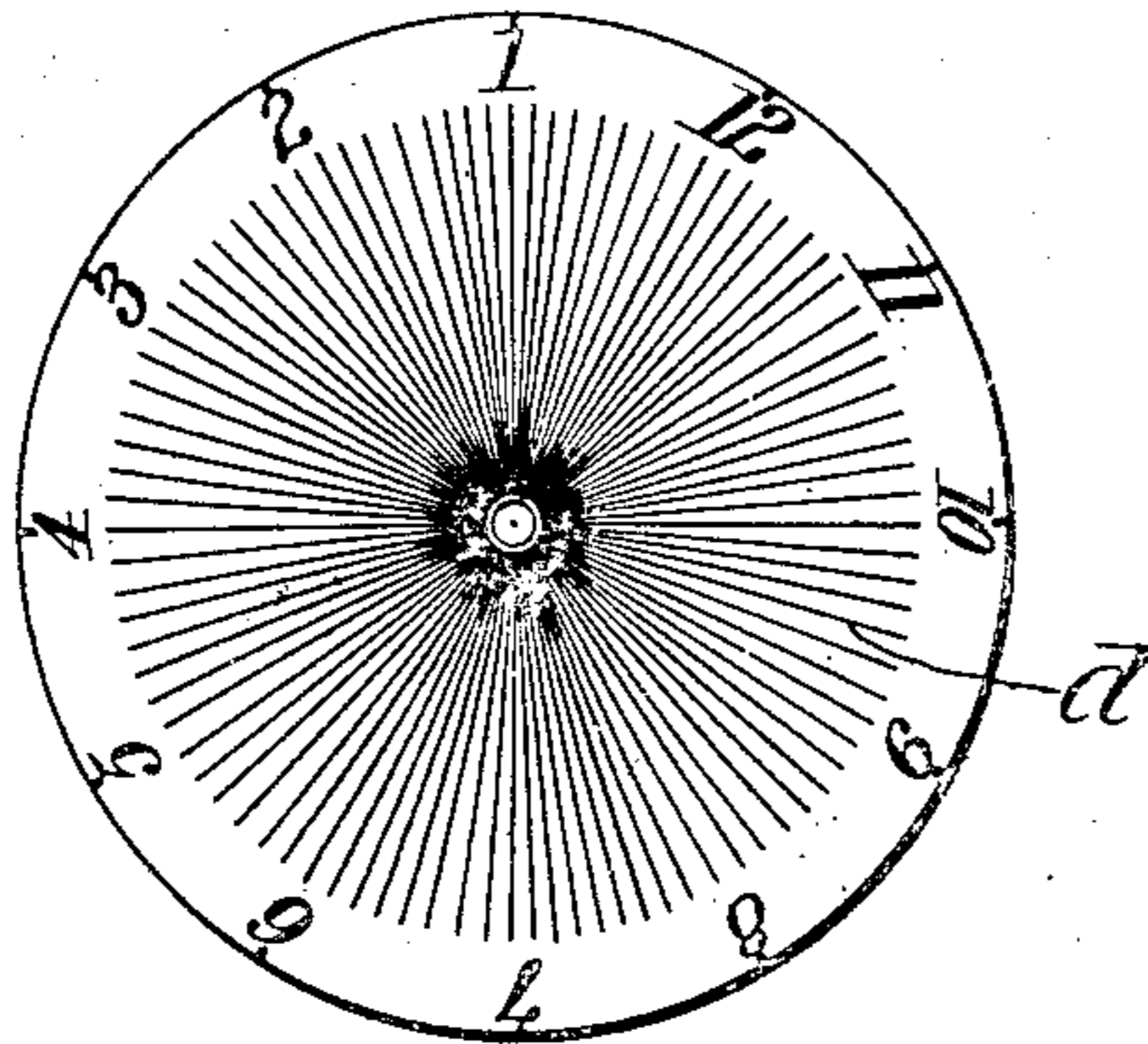


Fig. 3.



Inventor

Henry C. Ingraham

Witnesses

C. H. Walker,
Mary H. Darg.

By J. Walter Fowler
his Attorney

UNITED STATES PATENT OFFICE.

HENRY C. INGRAHAM, OF MOODUS, CONNECTICUT.

DIAL.

No. 864,467.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed March 12, 1907. Serial No. 381,956

To all whom it may concern:

Be it known that I, HENRY C. INGRAHAM, a citizen of the United States, residing at Moodus, in the county of Middlesex and State of Connecticut, have invented
5 new and useful Improvements in Dials, of which the following is a specification.

My invention relates to certain new and useful improvements in that class of time-pieces in which rotary dials having time-characters are employed in association
10 with a fixed narrow meridian or indicator which extends over the entire series of dials with which the time piece may be supplied.

The object of my invention is, primarily, to construct the dials of a watch or clock of some thin metal or material of sufficient lightness to allow it to be rotated with
15 certainty and ease and without offering unusual resistance to the usual main spring and other components of the works of the time-piece.

With these and other objects in view my invention
20 consists, essentially, of the improved dial which I will hereinafter describe and claim.

In the accompanying drawing in which similar letters of reference indicate like parts in the several views:—
Figure 1 represents a face view of a watch embodying
25 my invention. Fig. 2 is an enlarged view of one of the dials removed. Fig. 3 represents an enlarged view of a fragment of a dial showing the countersinking of the characters which represent the divisions of time.

In carrying out my invention I may use my improved
30 dial in association with any character of watch, clock, or like time-piece. For present illustrative purposes I show a watch the case of which is supposed to contain any desired and appropriate movement, and to be supplied with a crystal of glass or other transparent material.

The works of the watch will comprise appropriate concentric posts or shafts *a, b, c*, on which are fixed the hour, minute, and seconds dials *A, B, C*, these dials being superimposed and being of different diameters and having the usual graduations indicating hours,
35 minutes, and seconds, the graduations reading from right to left, as shown.

Dials arranged in the manner thus far described are not broadly new and I do not claim the same as my invention, but such dials, as heretofore constructed, have
45 generally been open to the objection that their weight imposed such a resistance to the main-spring of the watch that the results were not altogether satisfactory and the dials did not run true.

In carrying out my invention I construct the dial of
50 aluminium or other metal of great thinness, say about 5/1000 inch thick, more or less, thereby making it as light as possible and making it comparatively easy for the usual main-spring and train of gearing to impart rotation to it.

A dial as thin as the one described has but little inherent rigidity and to adapt it for the purposes of my invention I stiffen or strengthen said dial by corrugations *d* which extend radially from the center of the dial to nearly, or quite, the inner line of the usual circle of characters formed around the dial near the outer edge
60 thereof.

By having the corrugations at the center of the dial, which corrugations may be depressed from either or both sides of the dial, the central part of the dial is made sufficiently rigid at the post, or shaft, to insure
65 the dial running true, at the same time the danger of one dial interfering with another when dials are superimposed as shown in the present instance, is reduced to a minimum.

To further stiffen this thin light dial around its outer edge portions and to make the figures or characters with which it is provided more plainly discernible, I stamp the figures or characters in the metal so as to slightly countersink them below the surface of the dial, and I fill the depressed portions with some appropriate
75 enamel, varnish, gold, silver, phosphorous or other substance which will make the characters very pronounced and insure their being plainly seen even under the most adverse conditions of light.

To enable the time to be quickly and accurately
80 read, I use in connection with the dials, a meridian or indicator *D* in the form of a very narrow strip which extends over the dials and has one end fixed to the bezel of the watch, or an equivalent part on a clock, said indicator being so narrow that it will not obstruct the
85 figures or characters on the dials. By making the indicator long enough to extend over the three dials shown, I can quickly and with accuracy read the hour, minutes and seconds and thus determine the true time.
90

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:—

A time-piece comprising a plurality of super-imposed dials of thin material revoluble about a common center, said
95 dials being of different sizes and each being provided with a circle of time characters, and a narrow fixed indicator extending over all the dials and past which the dials rotate, each of said dials having radial corrugations forming stiffening ribs which extend from its center towards
100 the circle of time characters, and each of said dials having the time characters pressed into the dial and the depressed portions supplied with material of a contrasting color.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY C. INGRAHAM.

Witnesses:
CHARLES RICHMOND,
KATHARINE CHAFFEE.