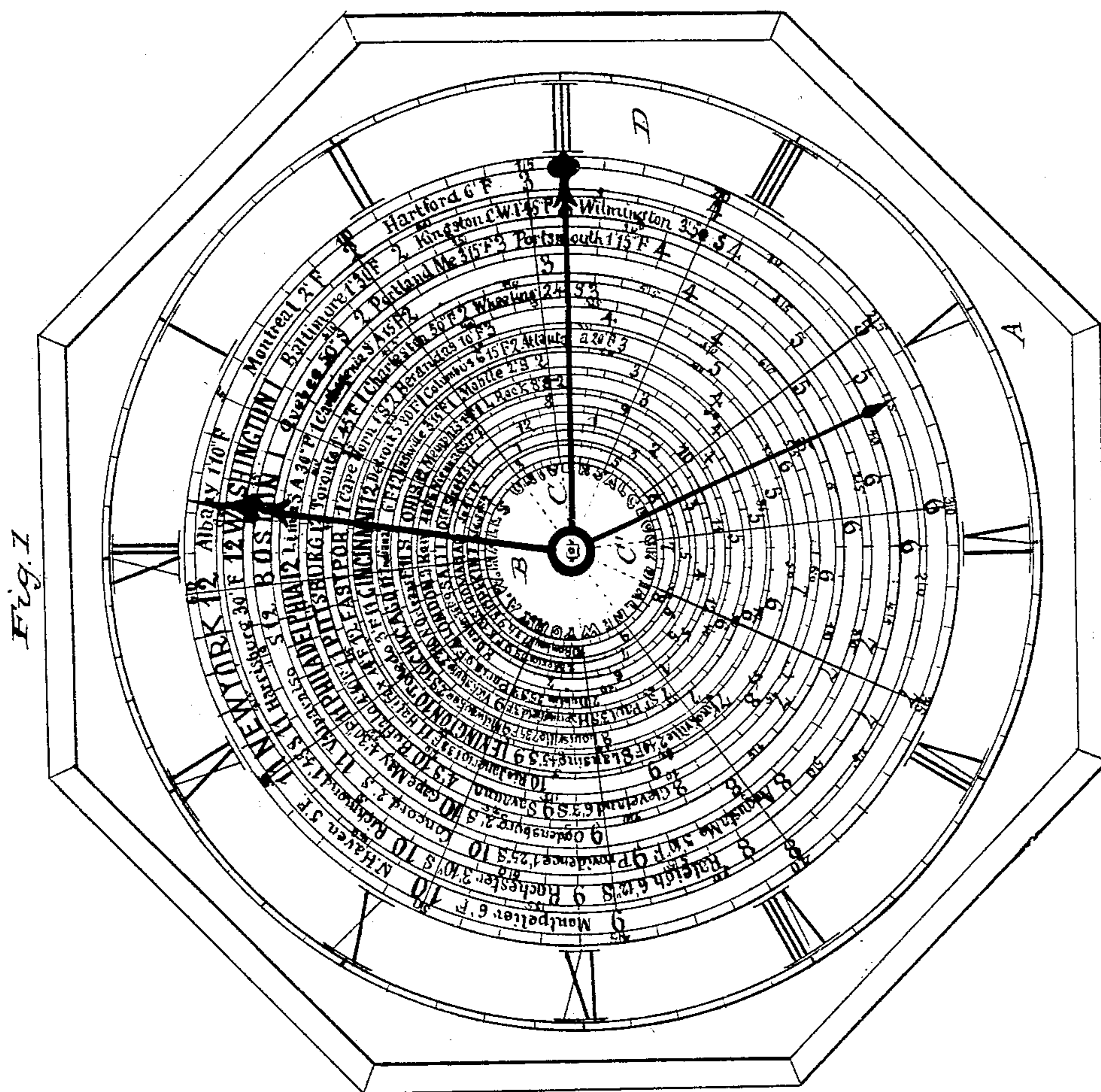


A. W. HALL.

Universal Time Piece.

No. 47,065.

Patented March 28, 1865.



WITNESSES
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J. P. Hall

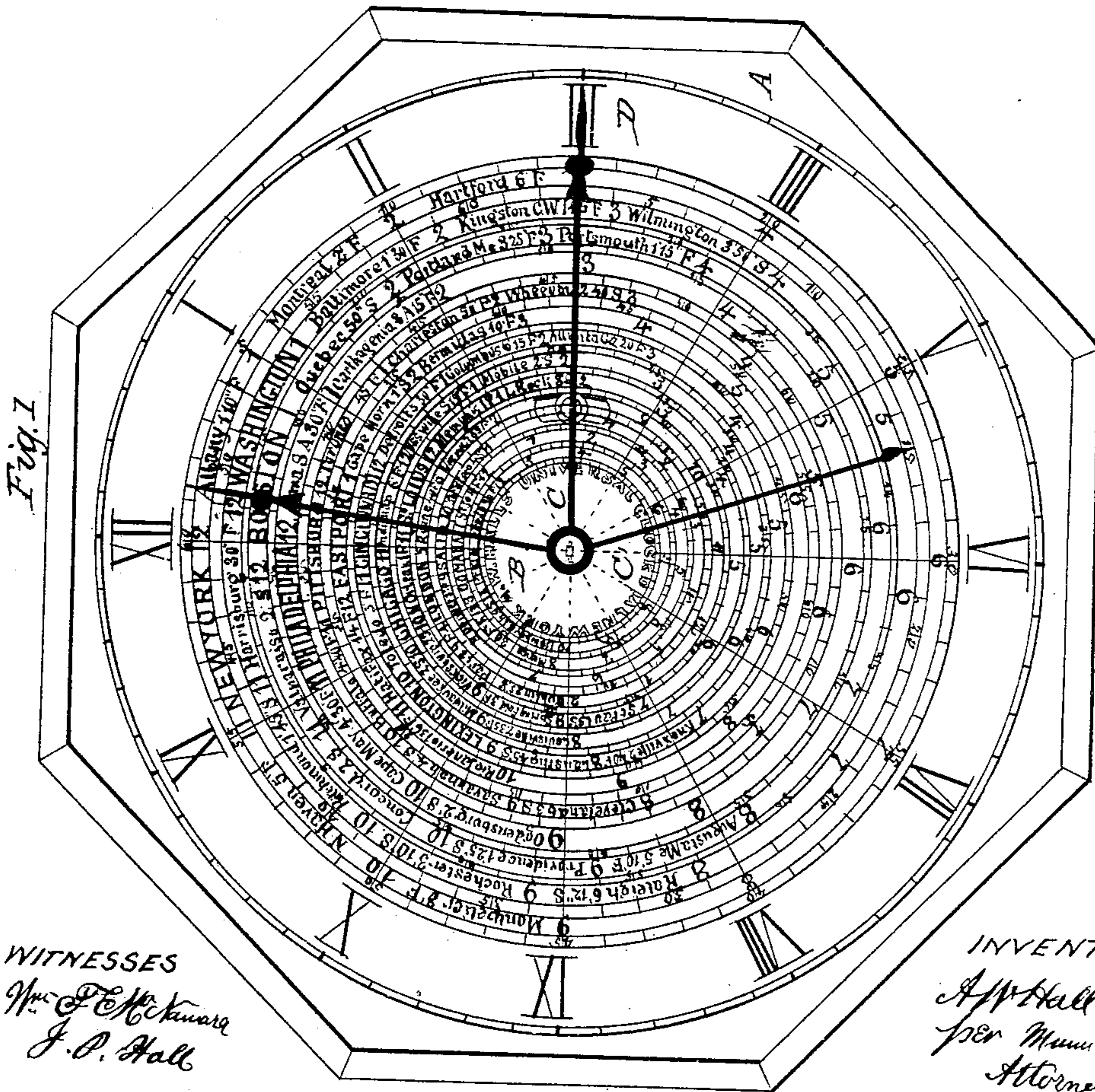
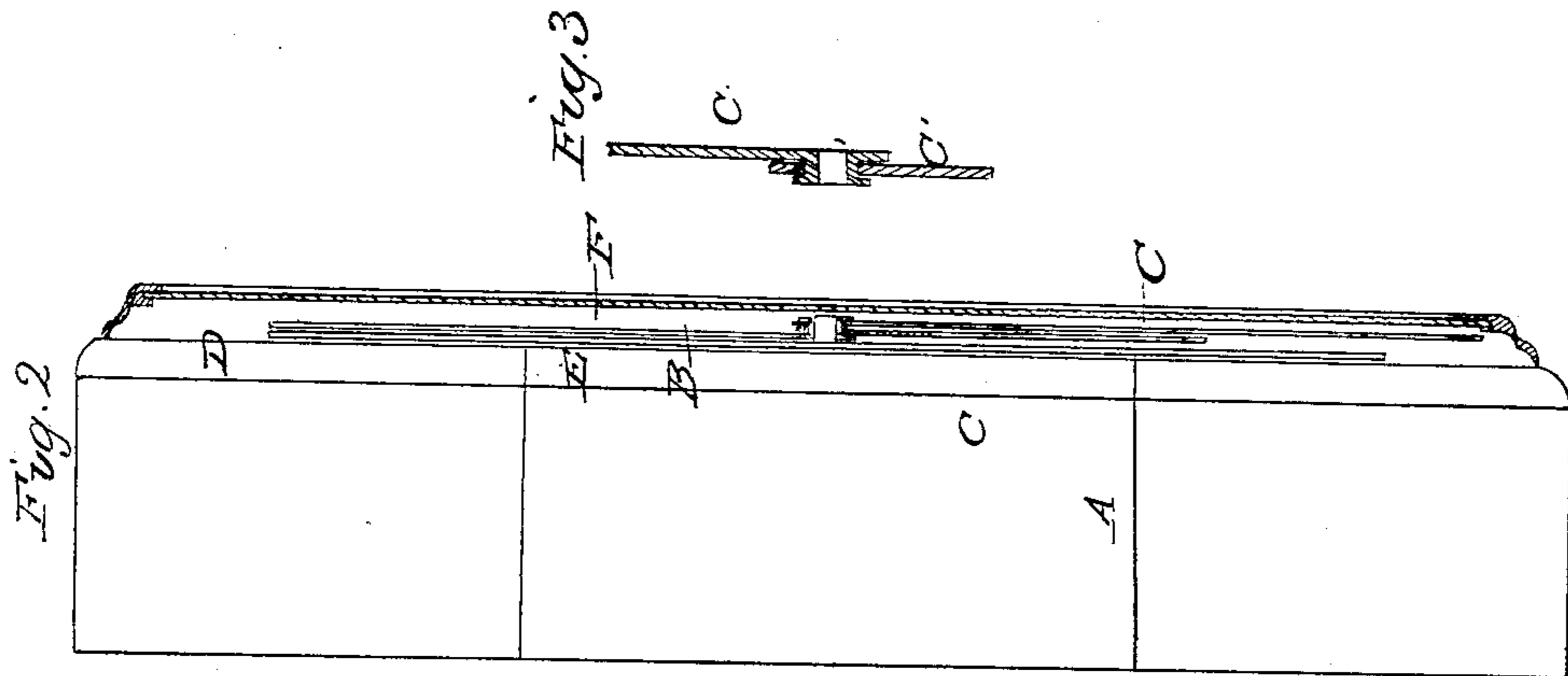
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UNITED STATES PATENT OFFICE.

A. W. HALL, OF NEW YORK, N. Y., ASSIGNOR TO B. W. ROBINSON AND S. P. CHAPIN.

IMPROVEMENT IN UNIVERSAL TIME-PIECES.

Specification forming part of Letters Patent No. 47,065, dated March 28, 1865.

To all whom it may concern:

Be it known that I, A. W. HALL, of the city, county, and State of New York, have invented a new and Improved Universal Time-Piece; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, Sheet I, is a face view of my invention when set for New York time. Fig. 1*, Sheet II, is a similar view of the same when set for Washington time. Fig. 2, Sheet I, is a transverse vertical central section of the same. Fig. 3, Sheet I, is a detached sectional view of the minute-hand, with the supplementary adjustable hand attached thereto.

Similar letters of reference indicate like parts.

The object of this invention is to produce a clock or watch which can be readily adjusted to indicate, by the ordinary hands, the correct or mean time for each of the places marked thereon, and which, by means of a supplementary hand, will show simultaneously the local time for all the places marked on the dial of the clock, without calculation and mathematically correct.

This invention consists in the employment or use of two or more compound or double circles on the dial of the clock or watch, the two parts of each circle containing, respectively, the figures for the hour and minute hands, calculated and arranged to correspond with the longitude of the places marked on said circles in such a manner that the ordinary hands of the clock or watch are allowed to keep the accurate time of different localities; also, in making the circles of different colors, to aid the eye in tracing any given circle to any portion of the dial. Further, in the use of an adjustable supplementary dial in combination with an adjustable supplementary minute-hand in such a manner that said adjustable dial can be arranged to correspond with the local time of any circle, and at the same time the supplementary hand will give the local time of any other place marked on any or all of the circles; also, in so constructing the supplementary minute-hand that the same can be readily turned or adjusted without interfering with

the ordinary hands or with the movement of the time-piece. Finally, in placing upon the different circles the names of other places besides those for which the circles are calculated, together with the variations of such additional places from the circle on which they are marked, in such a manner that by a slight addition or subtraction the local time of any of the places marked on the various circles can be ascertained.

A represents a clock or time piece, the hands B C of which move on the dial D in the ordinary manner. Secured to the central arbor, *a*, of the movement, is the compound dial E, which is composed of two or more double circles, similar to the main dial D, to receive the different names of the places in which the clock is to be used. Said double circles are marked with figures for the hour and minute hands, calculated and arranged to correspond with the longitude of the places named on said circles, so that by shifting the hands on the circles the correct local time for any of the places marked on said circles can be ascertained. Said circles are made in different colors, as clearly shown in Fig. 1 of the drawings, so that the eye can readily trace any given circle to any portion of the dial. They are connected together and made adjustable on the central arbor, so that the time-piece can be set for any of the places marked on any of the circles. A supplementary hand, C', is connected to the hub or tubular boss of the minute-hand C, as shown in the detached sectional view, Fig. 3, in such a manner that said supplementary hand can be turned in either direction, independent of the ordinary hands and without interfering with the movement of the time-piece, but is compelled by friction to move with the minute-hand. By this supplementary hand the local time of any place and the difference in the local time of any two places marked on the dial can be ascertained at a glance. For instance, if the clock is set for New York time and it is exactly twelve o'clock, the two hands B C will point to 12 on the main dial, and also to 12 on the New York circle, and at a quarter-past 12 the two hands will assume the position shown in Fig. 1, Sheet I. In that case both hands show the local time as well as the universal time.

The local time for New York is shown on the main dial and the New York dial; at the same time the local time for Washington, Boston, Philadelphia, or for any other place marked on any of the local dials, is shown at that dial. By referring to the Washington dial, for instance, it will be seen that it is twelve hours three minutes when it is twelve hours fifteen minutes in New York, and at the same time it is five hours nineteen minutes in London; nine hours forty-three minutes in Salt Lake City; eleven hours twenty-one minutes in Chicago, and so forth, and in order to ascertain the time in Albany one minute ten seconds has to be added to the New York time, making it twelve hours sixteen minutes ten seconds, or for the time in Richmond one minute forty-five seconds have to be deducted from the Washington time, making it twelve hours one minute fifteen seconds, &c.

If the clock or time-piece is to be used in any other locality besides New York—for instance, in Washington—the supplementary dial is turned until the 12 on the Washington circle is opposite the XII on the main dial, as shown in Fig. 1*, Sheet II. In that case the hour-hand B still continues to show the universal as well as the local time, but the minute-hand C shows only the local time on the main dial.

To indicate the universal time the supplementary hand C' must be brought into action. At twelve o'clock, for instance, the two hands B C point to XII in the usual manner, but the supplementary hand C' points to the figure 60 on the outer ring of the Washington circle; or, if it is again a quarter past twelve, the hands will assume the position shown in Fig. 1*, Sheet II. The hands B and C give the local time on the main dial in the usual manner. The hands B and C' give the universal time for all the places marked on the supplementary dial—for instance, when it is twelve hours fifteen minutes in Washington it is twelve hours twenty-seven minutes in New York, twelve hours fifty-five minutes in Eastport, eleven hours thirty-three minutes in Chicago, one hour seventeen minutes in Pekin; and the time for the different places will be

ascertained in the same manner as before described—by adding or subtracting the figures placed opposite the various names. From these examples it will be readily understood how, by the aid of my time-piece, the local time on all places marked on the various circles can be ascertained at any moment, and it is obvious that my invention is applicable to clocks as well as to watches, or to time-pieces of any size and description.

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

1. The employment or use on the dial of a clock or watch of two or more compound or double circles, marked with different places, the two parts of each circle containing, respectively, the figures for the hour and minute hands, calculated and arranged to correspond with the longitude of the places named on the circles, substantially as herein specified, for the purpose of allowing the ordinary hands of the clock or watch to keep the accurate time of different localities.

2. Making the circles of different colors, substantially as herein described, to aid the eye in tracing any given circle to any portion of the dial.

3. The use of a supplementary adjustable minute-hand in combination with the supplementary dial arranged on the face of a clock or watch, substantially in the manner and for the purpose shown and described.

4. So constructing the supplementary hand attached to and revolving with the ordinary minute-hand that it can be turned or adjusted, as desired, without interfering with the ordinary minute-hand or with the movement of the time-piece, as described.

5. Placing upon the different circles the names of other places than those for which the circles are calculated, at the same time naming the variations of said additional places from the circle, as and for the purpose set forth.

A. W. HALL.

Witnesses:

M. M. LIVINGSTON,
C. L. TOPLIFF.