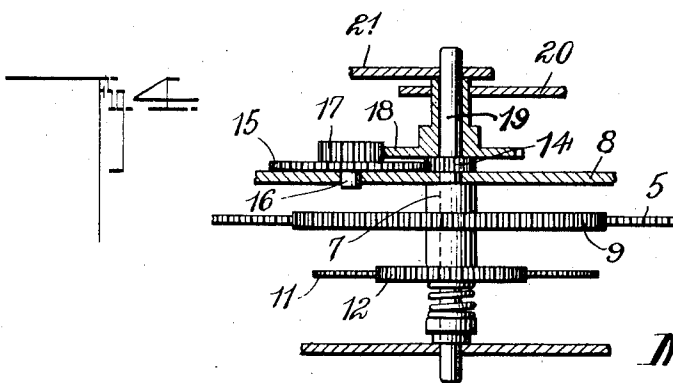
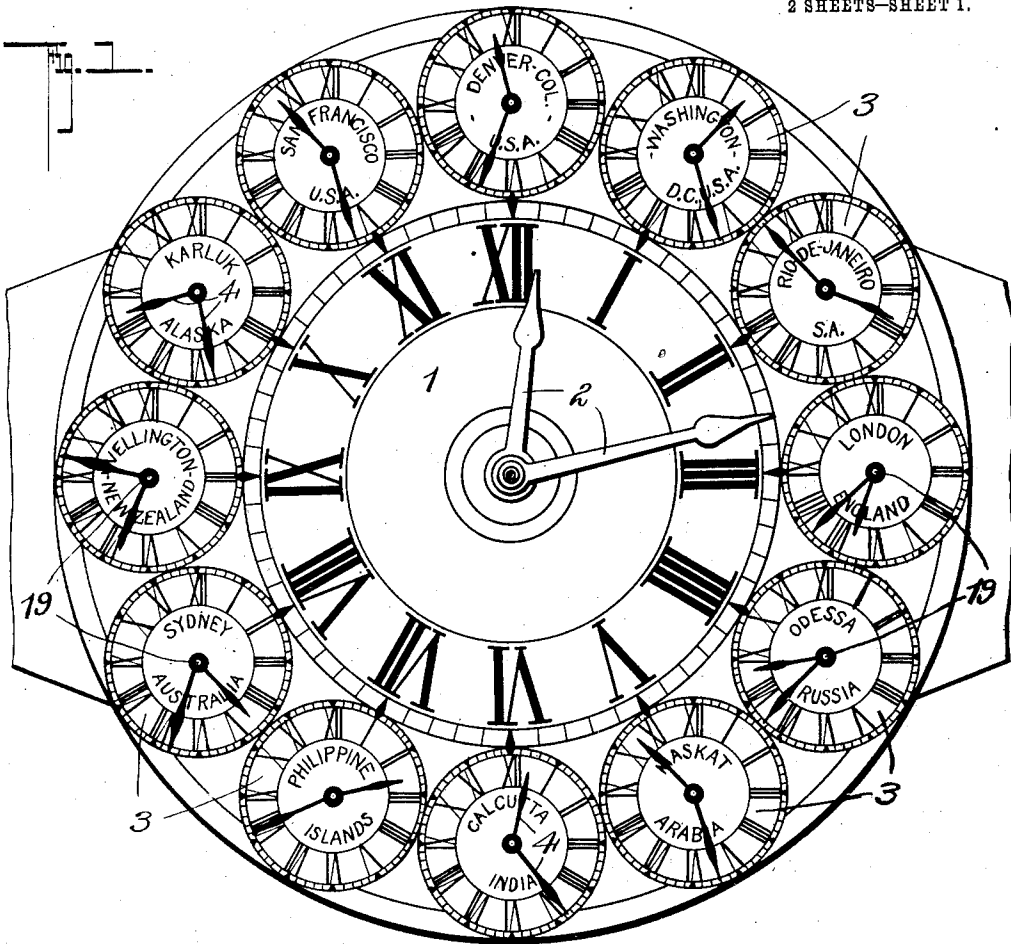


M. D. ALBRECHT.
CLOCK.
APPLICATION FILED APR. 29, 1910.

1,046,246.

Patented Dec. 3, 1912.
2 SHEETS—SHEET 1.



Inventor
M. D. Albrecht

Witnesses

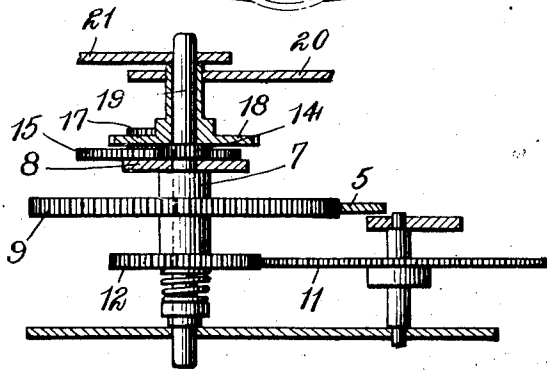
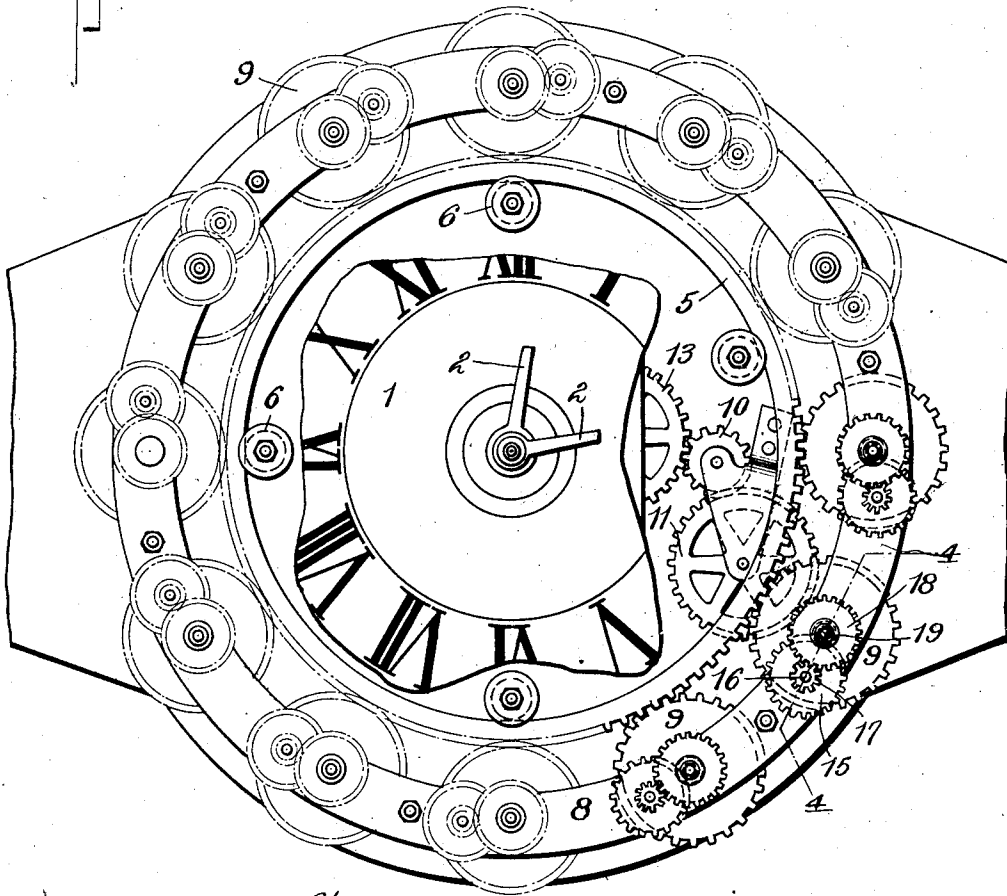
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Witnesses

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UNITED STATES PATENT OFFICE.

MICHAEL D. ALBRECHT, OF BENSON, NEBRASKA.

CLOCK.

1,046,246.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed April 29, 1910. Serial No. 558,468.

To all whom it may concern:

Be it known that I, MICHAEL D. ALBRECHT, a citizen of the United States, residing at Benson, in the county of Douglas and State of Nebraska, have invented a new and useful Improvement in Clocks, of which the following is a specification.

This invention relates to a universal clock designed to indicate the time at a number of places and also to indicate the time difference between places situated upon different degrees of longitude, as for example the time of day at Rio de Janeiro, about longitude 45 W. and that, at the same time at Washington, D. C., about 75 degrees W., or the difference between the time at Washington and a number of other places, giving the exact time at each place at any time during the day.

The invention consists in the novel features of construction hereinafter pointed out, set forth in the claims, and shown in the accompanying drawings, in which,

Figure 1 is a face view of the clock. Fig. 2 is a front elevation, the dial being partly broken away, and portions of the mechanism being indicated in dotted lines. Fig. 3 is a side elevation of an arbor and portions of a gear train, parts being shown in section. Fig. 4 is a similar section on the line 4-4 of Fig. 2.

In these drawings, 1 represents a face of a clock provided with the usual dial and the ordinary hour and minute hands 2. Grouped about the main central dial of the clock are a plurality of smaller dials 3, which I have shown as being twelve in number, although this number may be decreased or increased at pleasure. Each of the dials 3 is provided with a separate set of hands 4 and these hands can be set to indicate any difference in time as compared with the time indicated by the hands 2, and each of the dials 3 is designated as representing the time at some particular point as compared with the time at the point where the clock is located which time is indicated by the large hands 2 upon the central dial. In order to maintain all of these hands in their proper relative positions to the hands of the center dial it is necessary that they should be operated in unison with said center hands and the following mechanism is employed: A gear ring 5, not provided with spokes, is arranged to turn upon four idlers 6, said gear 5 being concentric with the clock ar-

bor upon which the hands 2 are mounted. Arbors 7 for the hands 4 are mounted in a circular frame 8 and carry gears 9 which mesh with the gear ring 5, said ring being held in place between the gears 9 and the grooved idlers 6. The gear 5 is driven from the clock mechanism operating the hands 2 by means of a gear train consisting of gears 10, 11 and 12, the gear 10 meshing with a gear 13 forming a part of the regular clock mechanism, and the gear 12 being fixed upon any one of the arbors 7. This drives one of the gears 9 directly from the clock mechanism which in turn drives the ring 5, and the said ring drives the other eleven gears 9. Each arbor 7 carries a pinion 14 which engages a gear wheel 15 mounted on a stub shaft 16, which also carries a pinion 17 which engages a gear 18 which gear forms a part of a sleeve or cannon pinion 19. An hour hand 20 is fixed upon said sleeve and the minute hand 21 is fixed upon the arbor. It will thus be obvious that all the hands 4 will be driven in unison with the hands 2, and from the same clock mechanism and that when set either behind or in advance of the hands 2 they will maintain at all times the same difference in time, thus giving the results aimed at by this invention.

What I claim is:—

1. The combination with a central dial, of a plurality of smaller dials arranged in a circle concentric with the first mentioned dials, a series of grooved rollers arranged in a circle concentric with the circle first mentioned, said rollers being between the smaller dials and the central dial, a ring, the inner edge of which is adapted to travel upon said roller and the outer edge of which is provided with teeth, and a plurality of gears arranged in a circle concentric with said ring, each of said gears being constantly in mesh with the teeth of said ring, and said gears being operatively connected with the smaller dials.

2. The combination with a clock mechanism, grooved idlers grouped thereabout, a gear ring concentric with said clock mechanism and rotatable upon said idlers, a plurality of dials grouped about said gear ring, hands carried by said dials and gear trains for operating said hands, said gear trains having each a gear meshing with the said gear ring, and means for driving one of said gear trains directly from the clock mechanism.

3. In a device of the kind described, a centrally arranged clock mechanism, a circular frame, arbors mounted in said frame, gears fixed upon said arbors, grooved idlers 5 grouped about the clock mechanism, a ring gear meshing with said first mentioned gears and turning upon said idlers, means for driving one of the first mentioned gears from the clock mechanism, dials correspond-

ing to said arbors, and hour and minute hands working over said dials and driven by the gears meshing with said ring gear, as and for the purpose set forth.

MICHAEL D. ALBRECHT.

Witnesses:

EDWIN R. MORRISON,
JAMES E. NUGENT.