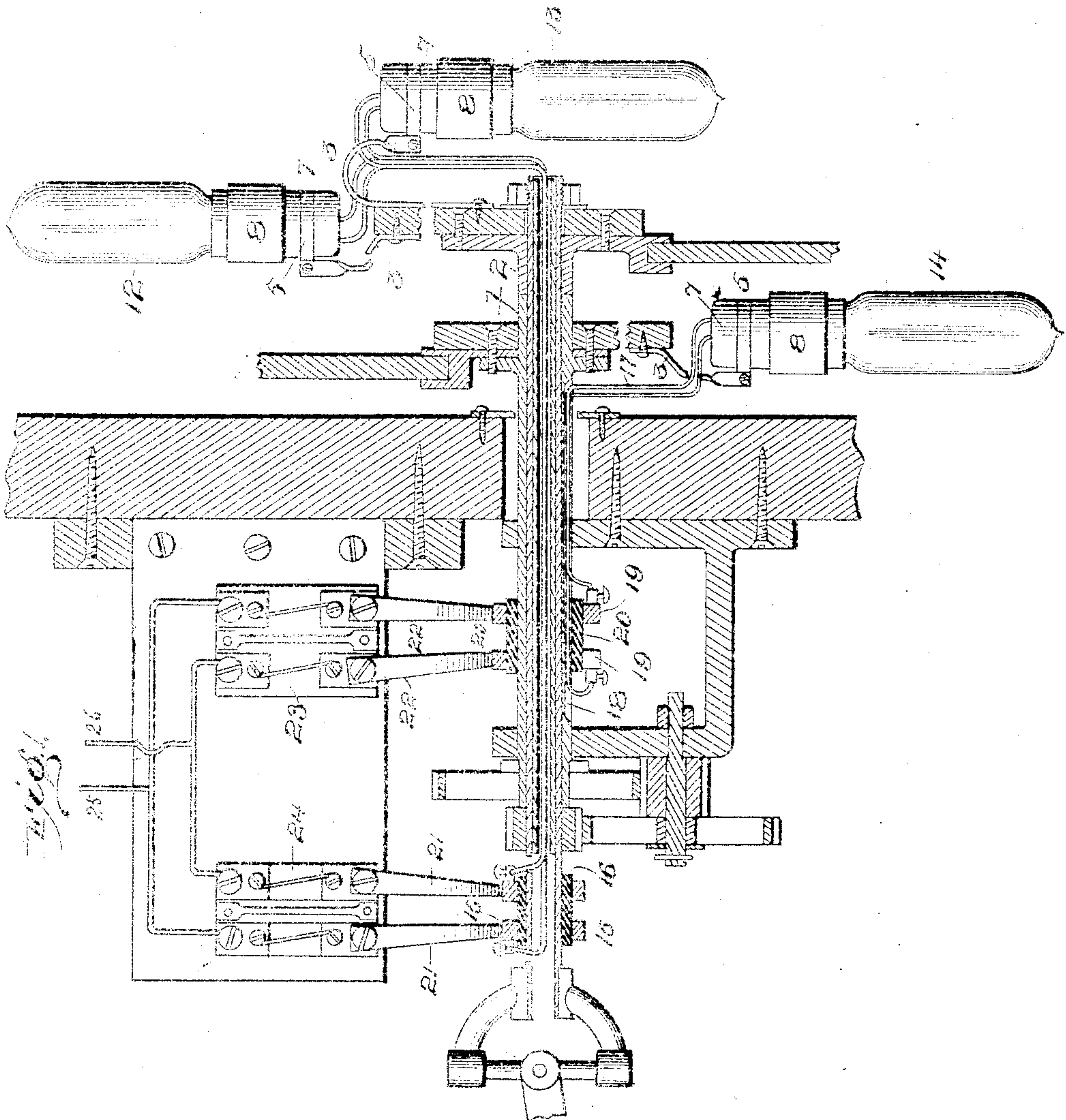


No. 872,200.

PATENTED NOV. 26, 1907.

E. ROWE.
TOWER CLOCK.
APPLICATION FILED MAY 9, 1901.

2 SHEETS—SHEET 1.



Witnesses:
J. M. Fowler
Walter J. Estabrook

Inventor
Edward Rowe
By Rhine S. D. Bois Co.
his Attys

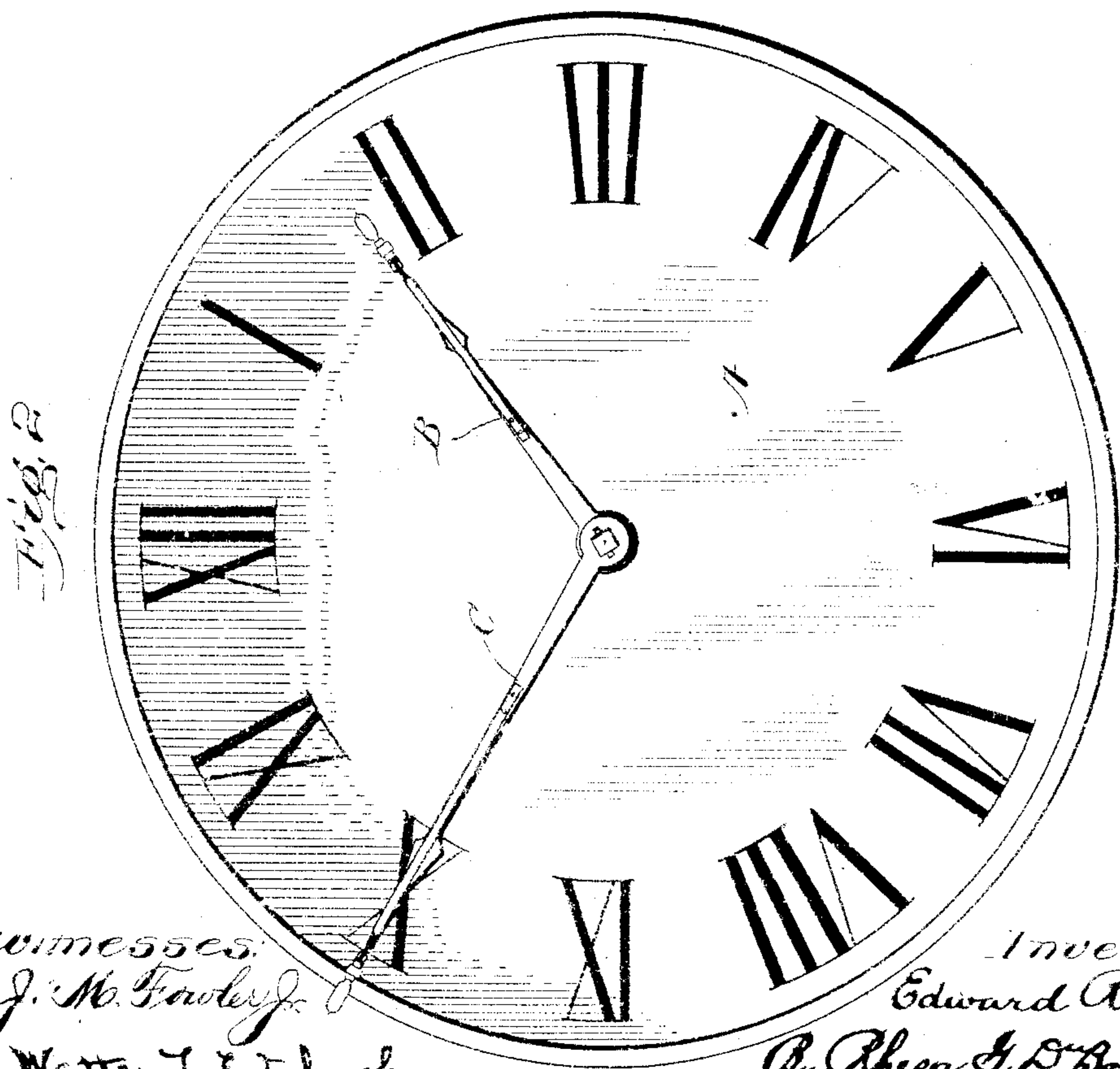
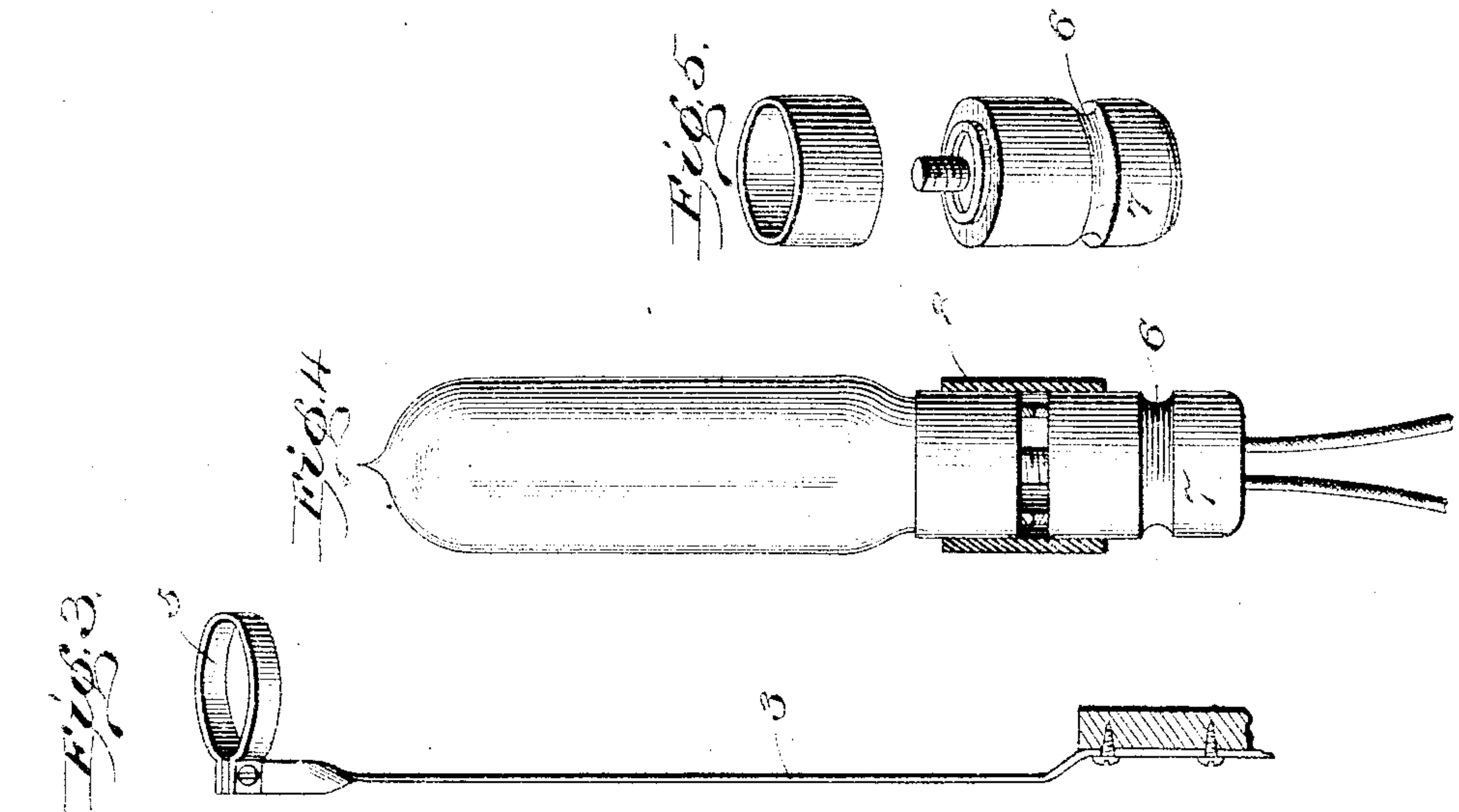
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APPLICATION FILED MAY 2, 1901

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EDWARD ROWE, OF INDIANA, PENNSYLVANIA

TOWER-CLOCK.

No. 872,200.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed May 9, 1901. Serial No. 59,482.

To all whom it may concern:

Be it known that I, EDWARD ROWE, a citizen of the United States, residing at Indiana, in the county of Indiana and State of Pennsylvania, have invented a new and useful Improvement in Tower-Clocks, of which the following is a specification.

My invention relates to an improvement in tower clocks, a primary object being to provide means whereby the time may be determined with accuracy at night, at a much greater distance than is ordinarily possible; other objects perhaps of only slightly less importance being economy in the cost of installation, and operation.

With the foregoing objects in view my invention consists in an arrangement of three incandescent lamps, preferably of different colors, and if desired, although not necessarily, of different candle power, one carried by each hand of a clock and the third located at the center post, so that the time is determined solely by the triangular relations of the three lamps, irrespective of any illumination of the clock dial or figures, there being no intention, on the contrary of lighting either dial or figures.

My invention further consists in means for extending the length of the hands regardless of the diameter of the clock dial so that the direction of the hands may be seen at greatly increased distances and the time of night determined with perfect accuracy.

My invention still further consists in certain novel features of construction and combinations of parts which will be hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1, is a view in longitudinal vertical section, showing my improvements applied in connection with the motion, work of tower clock, parts being in elevation, Fig. 2, is a front view, Fig. 3 is a view of an extension arm, Fig. 4 is a view of one of the lamps, and Fig. 5 is a view of the lamp socket.

A, represents a clock dial upon which are arranged the usual figures, and B and C are the hour and minute hands, respectively, secured on hollow concentric shafts 1 and 2 and operated by the customary motion work shown in a general way in Fig. 1, although not described in detail because well known and no part of the present invention.

Incandescent lamps 12 and 14 are carried,

respectively, by the minute and hour hands of the clock, and a third centrally located lamp 13 over the center post, is preferably carried also by the minute hand, and disposed as it is parallel therewith, and to outward view in alinement with the minute hand lamp, it gives an attenuated effect and appearance to the minute hand thus rendering its identity unmistakable at a glance, even at a long distance. These lamps might of course all be the same color and candle power but preferably the minute hand lamp is red, the hour hand lamp green, and the center lamp yellow or white; and experiment has proven that the best results are obtained by about the following candle powers for the different lights, say six for the white or yellow, ten for the red and sixteen for the green or thirty-two in all. This has been found to be the most satisfactory combination the red and white lights would partially obscure the green unless the power of the latter about equaled or exceeded that of the other two combined. By actual test this thirty-two candle power, thus arranged, or the current required by two ordinary sixteen candle power lamps is sufficient to show the time one and one-half miles. These lamps may be connected to the clock motion works in any approved manner. By preference however an extension arm 3 of wire or flat sheet metal is employed as it may be bent and adjusted to allow lamps to pass each other as well as projections, etc., in the revolution of the hands. By means of them there would be no difficulty in making a five foot dial appear to be a ten foot one by simply regulating the length of the extension arm. These extension arms may be secured to the hands by screws as shown in Fig. 3, and at their outer ends they are provided with a clamp 5 adapted to enter the circumferential grooves 6 formed in the lamp sockets 7 whereby to securely hold the lamp. Of course the lamps might be secured directly to the hands but as distance is an object, the purpose is to lengthen out the hands or to give them the appearance of greater length so that they can be seen at greater distances than would otherwise be possible. Each hand has a counterbalance 28.

The wires from the two lamps 12 and 13 pass through the center of the minute hand shaft 2 to the binding posts on the contact

rings 15, 15, which latter are insulated from the outer shaft 1, upon which they are mounted by means of the rubber or wood insulators 16. And the wires 17 from the lamp 5 14 pass through the groove 18 in the outer hour hand shaft 1 to the binding posts on the rings 19, 19, which latter are also mounted on shaft 1 with insulators 20 interposed therebetween. Operating in connection with the 10 ring contacts 15 and 19, are the brushes 21, 21, and 22, 22, and these are secured at their opposite ends to the ends of fuse blocks 23, 24, the current passing through the electric wires 25 and 26 from and to the genera- 15 tor.

From the foregoing it will be seen that the only light necessary are the three described located at the outer ends of the hands and at the center of the dial, the time being indi- 20 cated at night by their relative positions, or in other words the positions of the two hand lamps, with respect to the center lamp, aided perhaps by the different colored lights. The dial is not lighted at all, unless incidentally 25 by the three lamps, but not at all as a part of the scheme of time indicating, as the dial would be necessary but for day use when, of course the lamps not lighted. In this way only a comparatively small candle power is 30 required. Thus the cost of operation is reduced to a minimum, and the initial cost of installation is trifling as compared with the dial illuminating system commonly in vogue. Again the present system is applicable to 35 tower clocks now in use without the necessity of insulating the entire motion work and all its connections.

It is evident that slight changes might be made in the form and arrangement of the 40 parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth, but

Having thus fully described my inven-

tion, what I claim as new and desire to se- 45 cure by Letters Patent, is:—

1. A clock provided with an unilluminated dial, and hands, flexible extension arms se- 50 cured to the hands and projecting therebeyond, electric lamps received and supported by the projecting arms, the lamps extending in the same plane and direction as do the hands, concentric hollow arbors on which the hands are supported, the outermost arbor 55 provided with an exterior longitudinally extending groove formed therein and wires leading from the lamps to the interior of the clock, the wires received in the innermost hollow arbor and in the groove in the outer arbor respectively. 60

2. A clock provided with an unilluminated dial and hands, extension arms secured to the hands, the arms carrying lamps at their outer ends, arbors on which are carried the 65 hands, separate insulators carried by the two arbors within the clock, a plurality of separated contact rings carried on each insulator, fuse blocks connected to any suitable source of electricity, brushes secured to the fuse blocks and bearing on the contact 70 rings and insulated wires leading from each pair of contact rings to the lamps carried by the hands.

3. In a clock, the combination with the two hands, and extension arms secured to 75 each hand, said extension arms each having a clamp on its outer end, of a lamp, and lamp socket to which the lamp is secured, said lamp socket provided with a circumferential groove in which the clamp rests in holding 80 the socket.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

EDWARD ROWE.

Witnesses:

W. T. WILSON,
H. B. KLINE.