G. WILLENS.

STEREOPTICON ADVERTISING CLOCK.

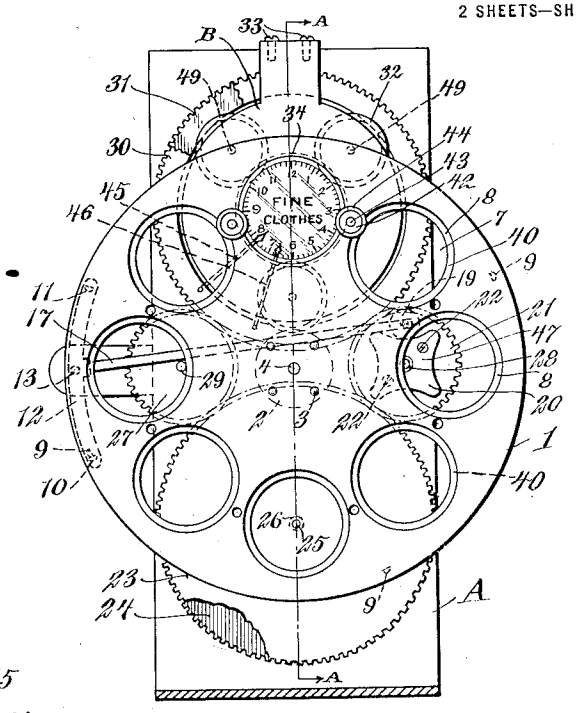
APPLICATION FILED FEB. 10, 1916.

1,218,607.

Patented Mar. 6, 1917.

2 SHEETS—SHEET 1.

Fig. 1.



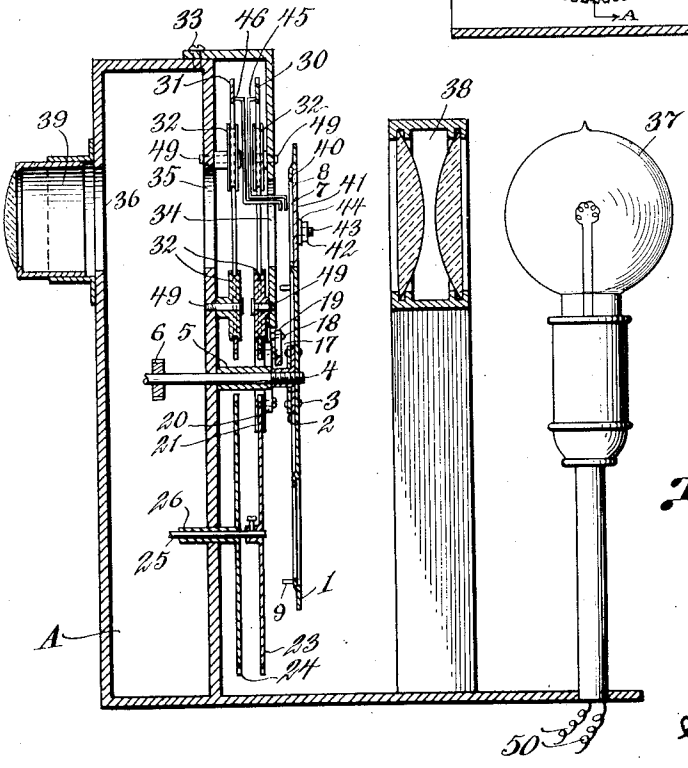


Fig. 2.

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2 SHEETS—SHEET 2.

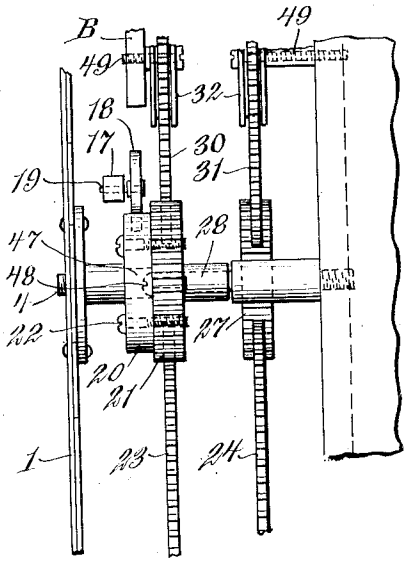


Fig. 3.

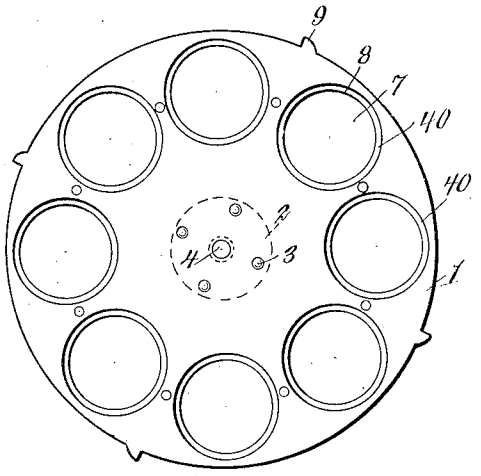


Fig. 4.

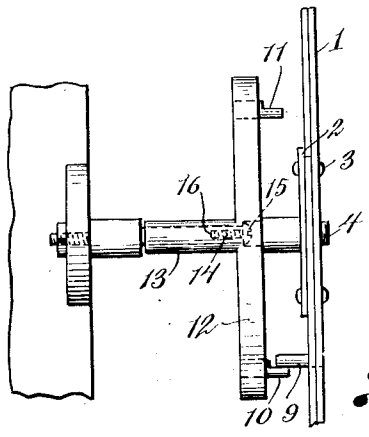


Fig. 5.

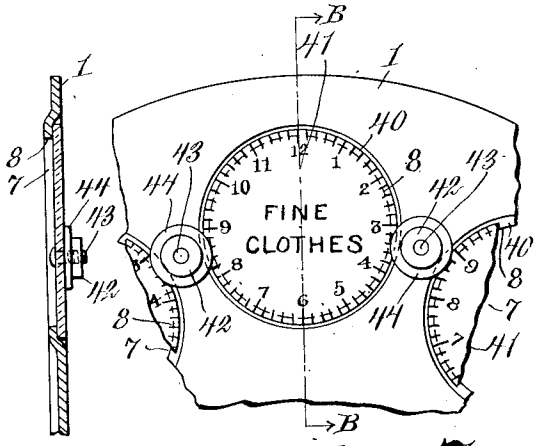


Fig. 6.

Fig. 7.

Inventor:

George Willens

UNITED STATES PATENT OFFICE.

GEORGE WILLENS, OF CHICAGO, ILLINOIS, ASSIGNOR TO KINETO MACHINE COMPANY, OF CHICAGO, ILLINOIS.

STEREOPTICON ADVERTISING-CLOCK.

1,218,607. Specification of Letters Patent. Patented Mar. 6, 1917.

Application filed February 10, 1916. Serial No. 77,456.

To all whom it may concern:

Be it known that I, GEORGE WILLENS, a citizen of the United States, residing at 1811 South Troy street, Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stereopticon Advertising-Clocks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My invention relates to improvements in advertising devices such as are desired to project the image of a clock dial, advertisements which automatically change at intervals, and clock hands indicating correct time on a surface, the space inside the dial being utilized for the advertisement.

My invention is primarily intended to be exhibited in prominent positions or locations, such as in theaters, store windows, bill posting signs, etc.

The invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be hereinafter described, and particularly pointed out in the appended claims.

In the accompanying drawings:—Figure 1 is a front elevation of my machine embodying the novel improvements; Fig. 2 is a vertical section of Fig. 1 on the line A—A in the direction indicated by the arrows, but showing the clock hands at twelve o'clock, instead of six thirty-seven o'clock to more clearly show how the clock hands clear the machine parts during the rotation of the said hands, and show in addition the approximate position of the projecting devices; Fig. 3 is a partial view on a larger scale of the right hand side of Fig. 1 showing prominently the relation of various parts of the escapement mechanism; Fig. 4 is a face view of another form of slide wheel than that shown in Fig. 1; Fig. 5 is a partial view on a larger scale of the left hand side of Fig. 1, showing prominently the relation of various parts of the escapement mechanism; Fig. 6 is a sectional view of Fig. 7 on the line B—B; Fig. 7 is a partial face view of the slide wheel in Fig. 1 showing prominently the manner of retaining the transparencies (or slides).

Like letters indicate similar parts in each of the accompanying drawings.

The slide wheel 1 is centrally mounted by means of rivets 3 to flange 2 which is tapped centrally to screw on rotatable shaft 4 against collar 5 secured to shaft 4, which is revolved by transmission gear 6 driven by a spring motor inclosed in frame A of any suitable construction. I do not deem it necessary to describe the mechanism of the motor nor the construction of the frame as they form no part of my claims and are unnecessary to the proper explanation of the apparatus. On the slide wheel 1 spaced at chordal distances subtending twice the angle of the chordal distance between the adjacent openings 7, bounded by lines 8, are dogs 9, secured in any suitable manner to slide wheel 1, designed and in position to be supported and released alternately by guards 10 and 11 on rocker escapement 12, which is rockingly mounted on shaft 13 and secured thereto by screw 14 in countersink 15 entering tap 16 on shaft 13, or secured in any other suitable manner. Attached to escapement lever 17 rigidly secured to rocker escapement 12 is shaft 18 rigidly secured to escapement lever 17 on which is rotatably mounted roller 19 running over cam 20, provided with opening 47 to clear head of screw 48 which secures gear 21 to shaft 28, which cam is removably fastened to transmission gear 21 by means of screws or pins 22.

Gears 23 and 24 are respectively mounted securely to minute shaft 25 and hour arbor 26 of an ordinary clock movement inclosed in frame A, the mechanism of which clock I deem unnecessary to describe as it is so commonly known and understood. Gears 23 and 24 drive respectively transmission gears 21 and 27 rotatably mounted on shafts 28 and 29 respectively, secured to frame A in any suitable manner, and in turn drive respectively toothed and concentric rings 30 and 31 to which is secured the minute and hour hands 45 and 46 respectively, and which are rotatably mounted on grooved rotatable wheels 32, mounted concentrically of the

toothed rings 30 and 31 on shafts 49 secured to frame A and reflection guard B. Reflectiontion guard B is rigidly secured to frame A by screws 33 or in any other suitable manner and is provided with circular opening 34 concentric with toothed rings 30 and 31. Frame A is provided with circular openings 35 and 36 concentric with toothed rings 30 and 31. Lamp 37, condenser 38 and lens 39 all situated concentric of toothed rings 30 and 31 and suitably supported on frame A comprise the means of projection and are securely mounted to frame A in any suitable manner. Slide wheel 1 is provided with a multiplicity of circular openings 7 bounded by recesses 40 circumferentially situated on slide wheel 1 so that dogs 9 resting on either guards 10 or 11 will place one of said circular openings 7 concentric with toothed rings 30 and 31, and into which fit removably, circular transparencies 41 secured therein by nuts 42 which screw down on screws 43 riveted into slide wheel 1, tightening against resilient washers 44 which bear down tightly on transparencies 41.

The operation of my improved stereopticon advertising clock is as follows:—After the clock and motor springs are wound up and the clock started, power is transmitted to the minute shaft 25 and the hour arbor 26 which drives gears 23 and 24 respectively and which in turn drive respectively transmission gears 21 and 27 which drive toothed rings 30 and 31 bearing clock hands 45 and 46 respectively. Toothed rings 30 and 31 are exactly the same diameter as the minute and hour gears 23 and 24 and rotate at exactly the same speed. Transmission gear 6 which is driven by a spring motor drives slide wheel shaft 4 which rotates slide wheel 1 when dog 9 is released by either guard 10 or 11. Rocker escapement 12 fulcrumed on shaft 13 is rocked by the alternate raising and lowering of roller 19 as it passes over elevations and depressions on cam 20. This action causes guards 10 and 11 to move sidewise from left to right alternately, having sufficient motion to alternately support and in releasing, clear dogs 9. In Figs. 1 and 5 dog 9 is shown supported by guard 10 and roller 19 is shown in depression in the cam 20 in Fig. 1. As the power of the clock rotates gear 21 and cam 20, the roller passes over the elevation in cam 20 moving guard 10 inward from the circumferential path of dog 9, releasing said dog and at the same time moving guard 11 outward to the same circumferential path of dog 9. As dog 9 is released, the latent rotative force in slide wheel 1 is expressed, causing it to rotate from right to left until the succeeding dog 9 is intercepted and halted by guard 11. As the cam continues to rotate the roller 19 drops by gravity, in depression in the cam 20 moving guard 11 inward from the circumferential path of and releasing dog 9 at the same time moving guard 10 outward to the same circumferential path. As dog 9 is released the slide wheel 1 rotates from right to left so that the same dog 9 is intercepted and halted by guard 10. These movements are periodical as long as the clock and motor springs remain wound.

Transparencies 41 are in such relation to dog 9 that they are successively concentric with toothed rings 30 and 31 as dogs 9 are halted by guards 10 and 11. The clock hands 45 and 46 on toothed rings 30 and 31 are so situated as to throw a shadow in the proper relation to the clock dial when the lamp 37 supplied by electric wires 50 is shown through condenser 38, concentrating light concentrically on transparency 41 and clock hands 45 and 46, throwing the combined clock hands and dial projection, successively through circular opening 34 in light shield B, toothed rings 30 and 31, openings 35 and 36 in frame A, through lens 39 onto any suitable surface. The circular opening 34 in, and the external diameter of, light guard B, are such as to preclude undue light or reflection from the other transparencies than the one in focus.

A cam of other forms can be readily substituted for the one shown in my accompanying drawings to secure a varied or more frequent exposure of the transparencies. The greatest advantage in the slide wheel shown in Fig. 4 is its simplicity of manufacture as the dogs 9 are stamped out in one operation with the slide wheel 1 instead of individually inserted as in Fig. 1. Unless a powerful clock movement is used, and even then, it is almost essential that rotatively mounted wheels 32 mounted on shafts 49 secured to frame A and light shield B, support toothed rings 30 and 31 on their inside edge to create the minimum friction, as the transmitting power of the minute shaft and hour arbor of a clock is very weak and the friction must be reduced to a minimum in order not to stop the clock or impair its efficiency. An immovably mounted collar 5 on shaft 4 insures accurate location of the slide wheel 1 on the shaft 4 as the slide wheel flange 2 butts against collar 5 always in the same position, endwise of the shaft, when shaft 4 is screwed tight into flange 2. Escapement lever 17 is provided with roller 19, only to reduce friction and said roller may be dispensed with by allowing end of said lever to glide over cam 20. Cam 20 may be circular and eccentrically mounted on transmission gear 21, and escapement lever 17 at end near cam, may be bifurcated or ringed to fit said cam avoiding the dependence on gravity for any of the movements of escapement 12.

It will be seen that a device embodying this invention has great advantages:—First, it compels one to see an advertisement when

looking at the time of my clock; second, its simplicity of construction; third, the ease with which transparencies may be removed and replaced; fourth, the ease with which the time between changes of transparencies may be varied by the simple substitution of various forms of cams.

What I claim as new and wish to secure by Letters Patent is:—

1. In an apparatus of the class described, a slide wheel equipped with recessed circular openings spaced equi-distant from center of slide wheel and to each other, removable circular transparencies fitting into said openings, screws secured to said slide wheel between said openings, nuts screwed on said screws each to secure one side each of two adjacent transparencies.

2. In an apparatus of the class described, a rotatable slide wheel equipped with recessed circular openings spaced equi-distant from center of slide wheel and to each other, removable circular transparencies fitting into said openings, screws secured to said slide wheel between said openings, nuts screwed on said screws to removably secure said transparencies, each nut clamping the adjacent sides of two transparencies, dogs on one side equi-distant from center of slide wheel and at chordal distances subtending twice the angle of the chordal distance between adjacent circular openings, and a one piece gravity operated rocker escapement fitted with two guards to alternately intercept the dogs successively on said slide wheel.

3. In an apparatus of the class described, a rotatable slide wheel equipped with recessed circular openings spaced equi-distant from center of slide wheel and to each other, removable circular transparencies fitting into said openings, screws secured to said slide wheel between said openings, nuts screwed on said screws to removably secure said transparencies, each nut clamping the adjacent sides of two transparencies, a flange riveted to or integral and central with said slide wheel, bored and tapped centrally, dogs on one side equi-distant from center of slide wheel, and at chordal distances subtending twice the angle of the chordal distance between adjacent circular openings and a one piece gravity operated rocker escapement fitted with two guards to alternately intercept the dogs successively on said slide wheel.

4. In an apparatus of the class described, a rotatable slide wheel equipped with recessed circular openings spaced equi-distant from center of slide wheel and to each other, removable transparencies fitting into said openings, screws secured to said slide wheel, nuts screwed on said screws to removably secure said transparencies, a flange integral and central with said slide wheel bored and tapped centrally, a motor driven rotatable shaft screwed into said flange, a collar 5 immovable on said shaft, against said flange, substantially as described, dogs on one side equi-distant from center of slide wheel and at chordal distances subtending twice the angle of chordal distance between adjacent circular openings, and a one piece gravity operated rocker escapement fitted with two guards to alternately intercept the dogs successively on said slide wheel.

5. In an apparatus of the class described, the combination of two gears mounted on and driven by the hour arbor and minute shaft respectively of a going clock movement, two rotatable concentric toothed rings internally supported by grooved rotatable rollers, transmission gears driven by the said mounted gears and driving said toothed rings, a cam removably secured on one of said transmission gears, a one piece gravity operated rocker escapement fitted with two guards to alternately interrupt the dogs successively on a motor driven slide wheel, in loose contact with and rocked by said cam, said slide wheel equipped with recessed circular openings spaced equi-distant from center of slide wheel and to each other, removable circular transparencies fitting into said openings, screws secured to said slide wheel between said openings, nuts screwed on said screws, each to secure one side each of two adjacent transparencies and dogs on one side equi-distant from center of the slide wheel and at chordal distances subtending twice the angle of the chordal distance between adjacent circular openings.

GEORGE WILLENS.

Witnesses:
BELLE MORTON,
JULE J. SAGER.