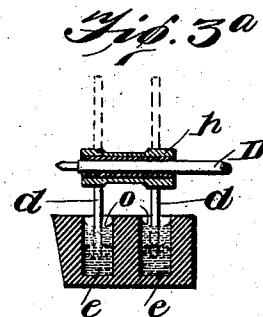
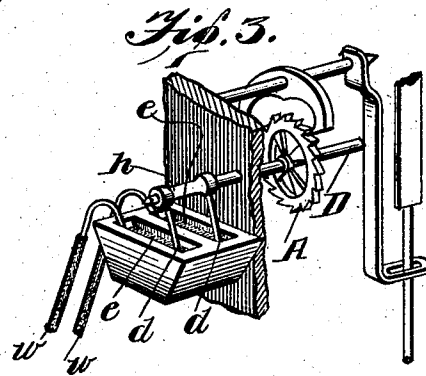
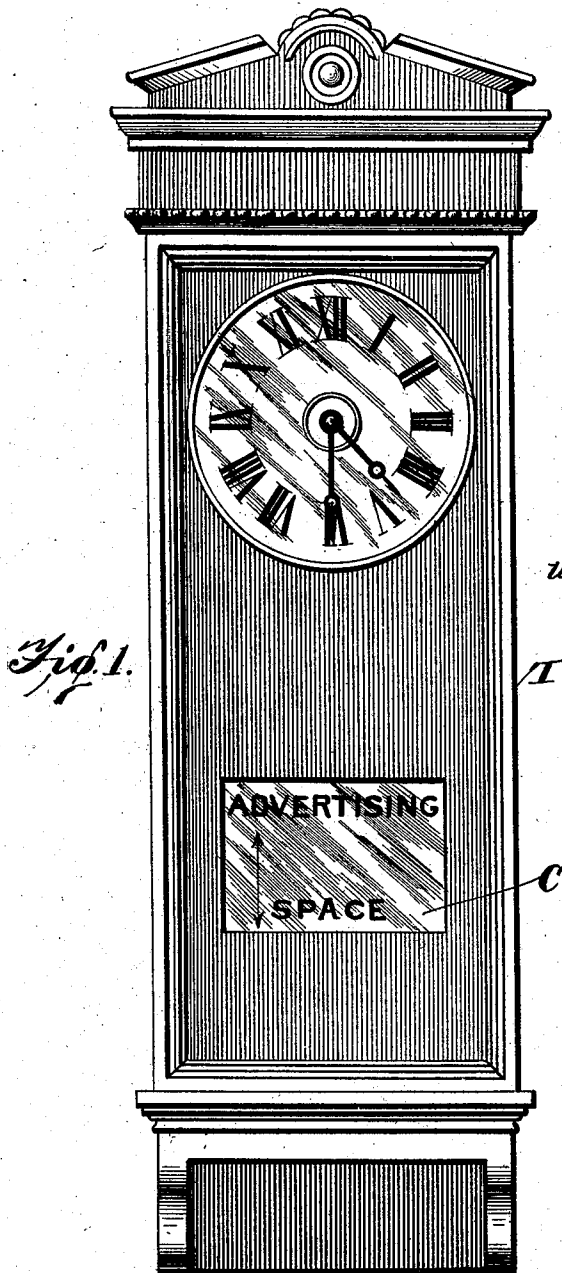


No. 853,710.

PATENTED MAY 14, 1907.

J. H. MELCHERS.
ELECTRICAL ADVERTISING CLOCK.
APPLICATION FILED JUNE 28, 1906.

3 SHEETS—SHEET 1.



WITNESSES
Edw. W. Byrnes

INVENTOR
JOHN H. MELCHERS
BY *Munn & Co.*
ATTORNEYS

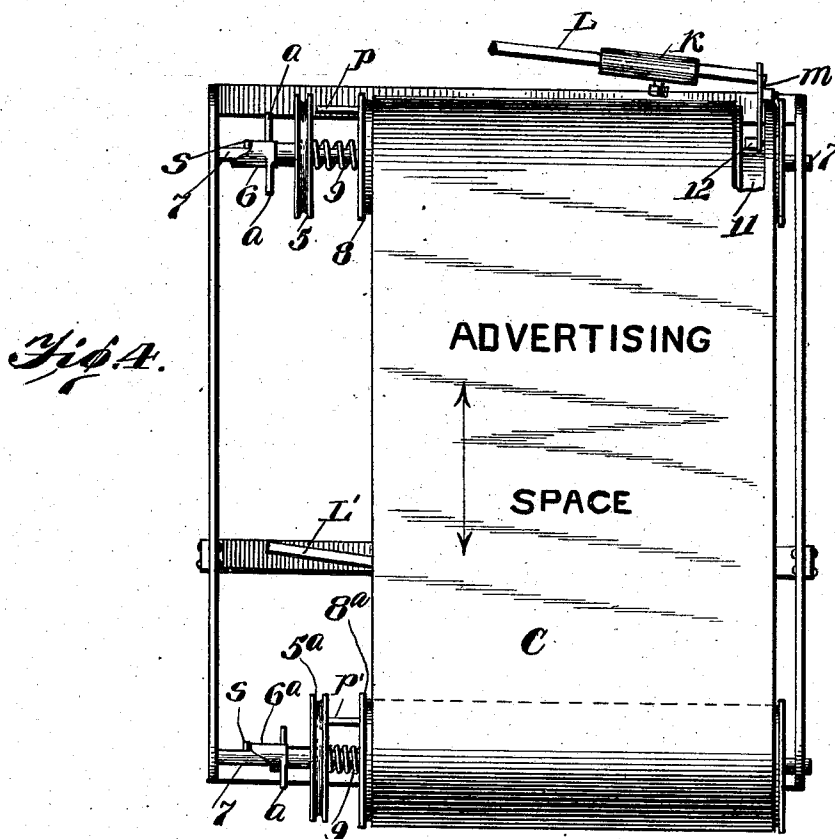
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3 SHEETS—SHEET 3.



WITNESSES
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UNITED STATES PATENT OFFICE.

JOHN HENRY MELCHERS, OF DECATUR, ILLINOIS.

ELECTRICAL ADVERTISING-CLOCK.

No. 853,710.

Specification of Letters Patent.

Patented May 14, 1907.

Application filed June 28, 1906. Serial No. 323,777.

To all whom it may concern:

Be it known that I, JOHN HENRY MELCHERS, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented a new and useful Improvement in Electrical Advertising-Clocks, of which the following is a specification.

My invention is in the nature of an automatic advertising device incorporated with and operated by a clock, in which a window or opening in the clock case has behind it a flexible advertising strip, which is intermittently moved to expose through the window the advertisements in regular succession, the rolls for carrying the advertising strip being connected with and operated by electromagnetic actuating devices set into action by a circuit closer under the control of the clock, which at regular intervals shifts the advertisements; suitable mechanism being also provided by which, when the advertising strip is completely unrolled from one roll and wound up on the other, the direction of motion of the rolls is automatically reversed, so as to send the strip back again in the opposite direction.

My invention consists in the novel construction and arrangement of the various parts of the device, which I will now proceed to describe with reference to the drawings, in which

Figure 1 is a face view of an ordinary time clock equipped with my invention. Fig. 2 is a perspective view of the operative mechanism of my advertising devices. Figs. 3 and 3^a are enlarged detail views of the circuit closer on the shaft of the escapement wheel of the clock. Fig. 4 is a face view of the advertising strip as wound upon the intermittently moving rolls.

Referring to Fig. 1, T represents any ordinary clock whose case is large enough to receive my advertising attachments. This clock may be run by springs, weights, or electromagnets.

In the lower position of the front of the case is formed a suitable window, which may be glazed or not as desired, and behind this window so as to show through the same is the intermittently moving advertising strip C which may be of paper, fabric, or any other material adapted to receive the printing and to be wound upon and unwound from the

rolls which are arranged above and below the window and inside the clock case.

Referring now to Fig. 2, 8, 8^a, are the rolls upon which the advertising strip is carried; 1 is a small electric motor and X is a battery for running the same. Where the building is already wired for electric light or power, this battery need not be used, but the motor may be directly connected to and run by the power wires. From the battery to the motor a circuit is established by the wires *w w*, which wires are also extended to a circuit closer under the control of the clock, which at stated intervals closes the circuit and sets the motor into action to turn the rolls and shift the advertisement. This circuit closer is preferably formed, see Figs. 3 and 3^a, by locating on the shaft D of the escapement wheel A, an insulated metal hub *h* bearing two radial metal pins *d d*. Just below these pins are fixed two detached or insulated troughs *e e* of mercury, the troughs being so arranged that as the shaft of the escapement wheel revolves the pins *d d* of the hub will pass down into the mercury in the troughs and thus close a battery circuit, of which these two mercury troughs are the terminals. The circuit wires *w w* of the motor are extended to these mercury troughs and when the pins *d d* are immersed in the mercury troughs the current passes from one mercury trough to the other through the two pins *d d* and the insulated metal hub. During the time that the pins *d* are immersed in the mercury the motor is in action and turns the rolls of the advertising strip and when the pins *d* rise from the mercury troughs the circuit is broken and the motor stops. To prevent sparking at the moment the pins leave the mercury, a layer of oil *o* is placed on top of the mercury which causes the separating terminals to be sealed in oil, thus saving loss of mercury from vaporizing.

From the motor 1 a belt *b* see Fig. 2 connects with and rotates a wheel 2 on a shaft 3 which on its inner end bears two small pulleys 4, 4^a, which through belts *c* and *c'* respectively turn the two rolls 8 and 8^a, the belt *c'* being crossed so as to give to the roll 8^a a reverse revolution to that given to roll 8. The rolls 8, 8^a, are loosely hung upon horizontal and parallel shafts and are coupled alternately to the driving mechanism through

clutch wheels 5 and 5^a. These wheels are formed as grooved pulleys which receive the belts *c* and *c'* and they turn loosely on the shafts 7 at the ends of the rolls and are adjustable into or out of engagement with the rolls by a lateral movement on the shaft as follows: At the end of each roll is a pin *p* and *p'* and in the pulley wheels 5 and 5^a are formed a circular row of holes the same distance from the center that the pins *p* and *p'* are, so that when either pulley wheel is moved toward its roll the pin will pass through a hole and thus lock the driving pulley and roll together so that the latter may be turned. The lateral adjustment of these pulley wheels is effected as follows. A spiral spring 9 is wound on the shaft 7 between each pulley and its roll and tends to press the pulley away from its roll and disconnect it from the pin. Outside of each pulley is a cam sleeve 6 or 6^a which turns loosely on the shaft 7. This sleeve has at its outer end a cam edge which bears against a pin *s* on shaft 7 and when the cam sleeve is turned the cam riding against pin *s* forces the sleeve longitudinally along the shaft and bearing against the hub of pulley 5 or 5^a forces it laterally toward the roll and into engagement with its locking pin, forming a clutch. To impart the necessary rocking movement to the cam sleeves 6, 6^a, they are formed with opposite radial arms *a a*, the pair of arms *a a* of one sleeve being connected to the similar arms of the other sleeve by parallel tension wires *a' a'*. The upper sleeve 6 has one of its arms *a* connected by a wire *l* to the short end of a lever *L* fulcrumed at 10 to the frame work. The other end of this lever is weighted at *k* and has an arm *m* extending down to the roll 8. This arm bears a small roller 12 and in the plane of the roller a recess or slot 11, with inclined sides, is cut transversely in the periphery of the roll, into which slot the roller 12 may drop when the open slot comes under it. A guide lug or roller *r* on the side of arm *m* plays up and down in the fixed guides *n*. For the lower roller 8^a, there is a similar lever *L'* with weight *k'* and an arm *m'* bearing a roller 12 and a lug *r'* moving in a guide *n'*, for coöperating with the slot 11 of the lower roller.

As long as the paper or other advertising strip is wound upon either roll 8 or 8^a it covers the slot 11 and the roller 12 is not allowed to drop into the slot 11. When, however, the paper strip is entirely unwound from either roll the slot 11 becomes uncovered as in Fig. 4 and the roller 12 drops into the same and forms a trip. When this takes place the lever *L* is deflected on the fulcrum 10 and the two cam sleeves 6, 6^a, are rocked. This causes one cam sleeve (6 for instance) to turn, and the sleeve 6 and pulley are forced outwardly by the spring 9 disconnecting pin

p from the pulley, and the same rocking movement of sleeve 6, through wires *a' a'*, rocks the cam sleeve 6^a, whose cam forces pulley 5^a laterally on to the pin *p'* of the lower roll, causing the upper roll to be disconnected from the motor and the lower roll to be connected and as the belt *c'* is crossed the roller 8^a is given a reverse revolution and the advertising strip then commences to be intermittently wound on the lower roll. It will thus be seen that when the paper is exhausted from either roll, that roll is immediately and automatically connected to be positively driven in the opposite direction from that in which it was previously running and so winds back thereon the strip again. Then when the strip is all wound upon the positively driven roll and the slot of the other roll becomes uncovered the automatic reversing clutch again comes into play to wind the strip back again. It will be understood that this reversal of the movement only occurs at the end of an unwinding movement of the strip and that the strip does not move continuously, but in an intermittent way, leaving a definite period of time for the exposure through the window of each advertisement or printed announcement on the strip.

As shown the period of exposure of any advertisement is approximately the time that it takes the escapement wheel to revolve, but it is obvious that by suitable gears, or by putting the circuit-closer on a slower shaft of the clock mechanism, the period of exposure might be increased at will.

As so far described my invention has been designated as an advertising device, but I wish it to be understood that under the term "advertising" I wish to include any exhibition of notices such for instance as may be useful in bulletin boards, program announcements, rail road schedules, street car indicators and the like.

I claim

1. A clock having a flexible strip for receiving advertisements, two rolls secured to opposite ends of said strip and having recesses covered by the convolutions of said strip, clutch mechanisms for alternately connecting and disconnecting the clutches and tripping mechanism for operating the clutches arranged to drop into the uncovered recesses of the rolls when the strip is unwound therefrom for the purpose of shifting the clutches.

2. A clock having a flexible strip, for receiving advertisements, two rolls secured to opposite ends of said strip and having locking projections on their ends, a laterally adjustable clutch wheel for each roll with openings to receive the locking projection, belts for driving said clutch wheels and a trip mechanism arranged to connect one clutch wheel

and disconnect the other when the strip has reached the end of one of its movements.

3. In an advertising device, the combination of a flexible strip for advertisements, 5 two rolls each having a peripheral recess arranged inside the borders of the strip when wound on the rolls, a tripping device for each roll arranged to fall into the recesses when

the strip is unwound from a roll, a driving mechanism for the rolls and clutches for the 10 rolls arranged to be operated by the trip devices.

JOHN HENRY MELCHERS.

Witnesses:

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E. L. HEYNE.