C. K. FOTHERINGHAM & A. R. LAING.

ADVERTISING DEVICE.

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1,207,737.

Patented Dec. 12, 1916.

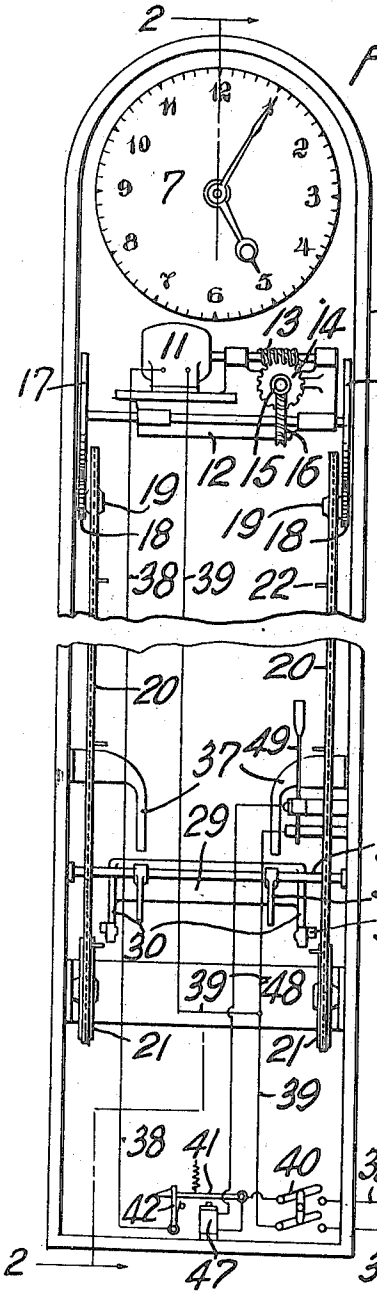


FIG. 1.

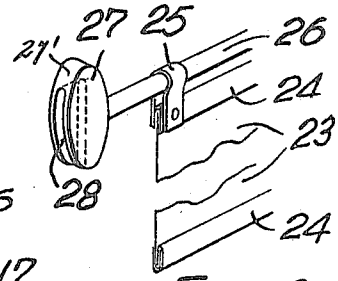


FIG. 2.

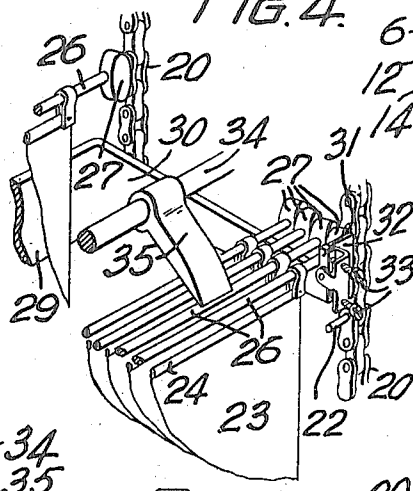


FIG. 4.

FIG. 3.

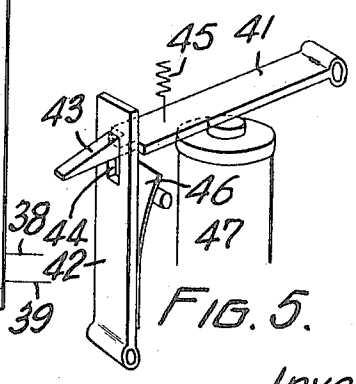
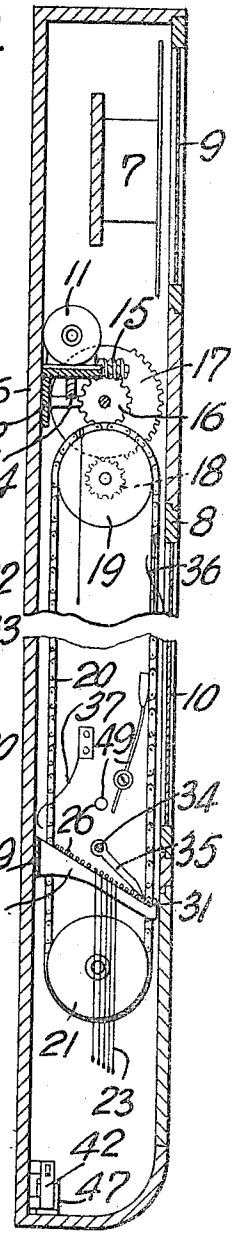


FIG. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

CARLETON K. FOTHERINGHAM AND ARCHIE R. LAING, OF MONTREAL, QUEBEC, CANADA, ASSIGNORS TO AMERICAN ADVERTISING CLOCKS, LIMITED, OF MONTREAL, QUEBEC, CANADA, A CORPORATION OF CANADA.

ADVERTISING DEVICE.

1,207,737. Specification of Letters Patent. Patented Dec. 12, 1916.

Application filed January 28, 1913. Serial No. 744,669.

To all whom it may concern:

Be it known that we, CARLETON K. FOTHERINGHAM, and ARCHIE R. LAING, both subjects of the King of Great Britain, and residents of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented new and useful Improvements in Advertising Devices, of which the following is a full, clear, and exact description.

This invention relates to improvements in advertising devices and the object is to provide an apparatus for automatically displaying advertisements in prearranged sequence for a predetermined length of time.

A further object is to provide improved means controlling the movement of the advertisements.

A still further object is to provide means for automatically stopping the operation of the device if it does not properly shift the advertisements.

In the drawings which illustrate the invention:—Figure 1 is a front elevation of the device. Fig. 2 is a vertical section on the line 2—2, Fig. 1. Fig. 3 is a fragmentary perspective view of the advertisement magazine. Fig. 4 is a fragmentary perspective view of a single advertisement. Fig. 5 is a perspective view of the automatic stopping device.

Referring more particularly to the drawings, 6 designates a casing containing at the top a clock 7 or other standard indicating instrument of general interest and usefulness to the public. The front of the casing is closed by a door 8 having a transparent panel 9 opposite the indicating instrument 7, and a transparent panel 10 through which the advertisements may be seen.

As electricity is at the present time obtainable almost universally and is the most convenient source of power, it is used in this invention to operate the advertisement shifting mechanism. The power is supplied to a motor 11 mounted on a small bracket 12. The motor turns a worm shaft 13 meshing with a worm wheel 14 on the spindle of which is a second worm shaft 15 meshing with a second worm wheel 16, on the spindle of which is fixed a large interrupted gear 17. This gear meshes with a pinion 18, which pinion is thereby rotated only at stated intervals. Fixed on the same spindle as the pinion 18 is a sprocket wheel 19 over which passes an endless chain 20. In the lower part of the casing is a grooved wheel 21 holding the chain from swaying and maintaining it in rigidly vertical position. It of course will be understood that the chain and its operating gears 17 and 18 are duplicated on each side of the casing. The chains are provided at regular intervals with pins 22 arranged upon adjacent sides of the chains so that an advertisement may be supported between the chains on said pins. The advertisements each consist of a sheet 23 of suitable material provided at the upper and lower edges with stiffening bands 24. The upper edge of each advertisement is hung by clips 25 from a rod 26 at each end of which are fixed flat elliptical blocks 27 arranged with their flat sides facing the front and back of the case. The sloping edges 27′ of the blocks serve to aline the supporting rods 26 when the blocks contact with the chains 20. Each of these blocks is provided on the edge remote from the rod 26 with a groove 28 extending upwardly from the lower end to a short distance above the minor axis of the block, this groove being adapted to receive the pins 22 of the chains 20.

As only a limited number of advertisements could be mounted on the chains without making the device very large and cumbersome, it is preferred to use comparatively short chains and provide a magazine adapted to contain a large number of advertisements compactly arranged. This magazine consists of a plate 29 secured to the back of the case and having two forwardly projecting arms 30 located between the chains and close thereto. These arms slope downwardly from the back to the front of the case and are provided at their lower or forward ends with upwardly turned extremities 31. It will thus be seen that if the advertisement carrying chains 20 travel upwardly at the front of the casing and downwardly at the back thereof, the rods 26 will come to rest upon the rear ends of the magazine arms 30, while the chains will continue to move downwardly and withdraw the pins 22 from the grooves 28, thus disconnecting the advertisement from the chains. The force of gravity will cause the advertisement to slide to the front of the magazine where the upwardly traveling pins 22 will engage in the grooves 28 and carry the advertisement up

out of the magazine. In order to insure the blocks 27 assuming vertical position at the front of the magazine, a small plate 32 is pivotally mounted on the front end of each magazine arm and is rendered adjustable with respect to a vertical plane by a pair of screws 33. When an advertisement slides to the front of the magazine, the flat surfaces of the blocks 27 abut this plate and are thereby alined, so that the open lower ends of the grooves 28 will be exactly in the path of the pins 22. In order to prevent frictional engagement or the possible catching of one advertisement on another causing the front advertisement in the magazine to lift the advertisement immediately behind it, a magazine gate is provided. The gate consists of a transverse rod 34 upon which are mounted a plurality of arms 35, the extremities of which rest upon the second advertisement carrying rod 26 (counting from the front of the magazine). These arms are so adjusted that the rods readily slide under them to assume the first place in the magazine, but cannot be raised.

As the chains pass over the sprockets 19 and carry the advertisements from the front to the back of the case, it is obvious that the upward movement of the advertisement in process of transfer is very much less than the upward movement of the advertisement immediately following, so that there is a certain tendency for the lower advertisement to catch the lower edge of the upper advertisement, and cause a jamming of the mechanism. To overcome this possibility, a pair of thin flat springs 36 are provided on the front of the casing a short distance below the sprockets 19, and operate to throw the lower edge of an advertisement toward the back of the case during its passage over the sprockets 19, and thus prevent it catching on the top of the following advertisement. In much the same way, the advertisements passing down into the magazine have a certain tendency to catch on the rear advertisement in the magazine, and slide down over the advertisements in the magazine instead of assuming its proper vertical position at the rear. To prevent the possibility of this occurrence, a pair of thin flat springs 37 are secured to the sides of the case and operate to press the descending advertisements close to the case back, so that they will not catch upon advertisements already in the magazine.

Electric current for the motor enters the case on the wires 38 and 39 and passes through a switch 40. In series in the wire 38 a latch circuit breaker is provided consisting of a pair of pivoted arms 41 and 42, the former of which is provided with a catch 43 engaging through an aperture 44 in the latter. A small spring 45 operates to hold the arm 41 up and in engagement with the arm 42, while a spring 46 operates to throw the arm 42 out of engagement with the arm 41 when the latter is depressed. An electromagnet 47 is arranged to draw down the arm 41 and disengage it from the arm 42. This magnet 47 is connected in a shunt circuit 48 in series with a gravity circuit maker 49, which is maintained in open position by the upwardly moving advertisements. In this way, if the chains failed to pick up an advertisement from the magazine, there would be nothing to hold the circuit maker 49 open, so that it would close by gravity and establish a circuit through the magnet 47, which would operate to draw down the arm 41 and release the arm 42 which would be thrown off by its spring 46, thus breaking the motor circuit and stopping the apparatus.

It will be seen from the foregoing description that the motor 11 is continuously running, the stopping and starting of the advertisement carrying chains being effected by means of interrupted gears, so that there are no automatic motor stopping and starting devices, which rapidly deteriorate and need frequent attention. The use of the double worm gearing produces exceptionally smooth and noiseless operation of the device. There is absolutely no connection between the operating device and the indicating instrument 7, so that the accuracy of the instrument is not interfered with. All the mechanism is extremely simply and positive in action, so that a maximum of efficiency is insured.

Having thus described our invention, what we claim is:—

1. An advertising device comprising a case, a pair of endless chains having advertisement carrying pins, a plurality of advertisement carrying rods, a magazine containing said rods and arranged to shift the same by gravity toward the front of the case, a pair of blocks on each advertisement rod having pin engaging grooves and sloping edges arranged to aline the rods transversely of the case, and adjustable means mounted on the magazine arranged to aline the grooves with the path of travel of the pins.

2. An advertising device comprising a case, a pair of endless chains having advertisement carrying pins, a magazine, a plurality of advertisement carrying rods in said magazine, blocks on said rods having pin engaging grooves and sloping magazine engaging alining edges, plates pivoted to the magazine in engagement with the blocks of the front advertisement carrying rod, means for adjusting said plates to aline the block grooves with the chain pins, and a magazine gate holding all rods but the first against removal.

3. An advertising device comprising a case, a pair of endless advertisement carrying belts, a continuous running motor operating said belts, a plurality of advertising

sheets, a magazine holding said sheets, said belts adapted to pick said sheets from the magazine, an electric circuit supplying power to the motor, a shunt circuit supplying electric power to said circuit breaker, and a gravity actuated circuit maker in said shunt circuit maintained in open position by advertisements carried by the belts, a magnet circuit breaker in said first mentioned circuit adapted to break said circuit when the belts fail to pick an advertisement from the magazine.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

CARLETON K. FOTHERINGHAM.
ARCHIE R. LAING.

Witnesses:
STUART R. W. ALLEN,
G. M. MORELAND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."